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WILLOW ROCK ENERGY STORAGE CENTER

FINAL DECISION



**CALIFORNIA
ENERGY COMMISSION**
Governor Gavin Newsom

December 2025
CEC-800-2025-001-CMF
Docket Number 21-AFC-02

CALIFORNIA ENERGY COMMISSION

715 P Street
Sacramento, CA 95814

21-AFC-02 (Application for Certification)

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CALIFORNIA ENERGY COMMISSION

715 P Street
Sacramento, California 95814

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CEC-70 (Revised 7/22)



IN THE MATTER OF:

Willow Rock Energy Storage Center

Docket No. 21-AFC-02

Order No: 25-1219-06

COMMISSION ADOPTION ORDER

The California Energy Commission (CEC) adopts the Presiding Member's Proposed Decision (PMPD) (TN 267183) and Errata (TN 267949) prepared and recommended by the Committee, as set forth in the Proposed Final Decision (TN 267950) for the Willow Rock Energy Storage Center Application for Certification plus two additional corrections on pages A-135 and A-137 identified in CEC Staff's communication to the Hearing Office (TN 267974). These adopted documents and recommendations comprise the CEC's Final Decision (Decision).

The Decision is based upon the hearing record of these proceedings and considers the comments received on the PMPD prior to and at the Public Hearing held on December 19, 2025. The Decision contains a summary of the proceedings and evidence presented, and the rationale for the findings reached and Conditions of Certification imposed.

This Commission Adoption Order (Order) incorporates by reference the text, evidence, Conditions of Certification, compliance verifications, and Appendices contained in the PMPD and Errata. The requirements contained in the Decision ensure that the proposed Willow Rock Energy Storage Center will be designed, sited, constructed, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

FINDINGS

The CEC hereby adopts the following findings pursuant to the California Environmental Quality Act (Public Resources Code sections 21000 *et seq.*), the Warren-Alquist Act (Public Resources Code sections 25500 *et seq.*), and the CEC regulations (California Code of Regulations, title 20), in addition to those findings contained in the Decision:

1. The Conditions of Certification contained in the Decision ensure that the Willow Rock Energy Storage Center will be designed, constructed, sited, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and

standards, including applicable public health and safety standards, and air and water quality standards.

2. Implementation of the Conditions of Certification contained in the Willow Rock Energy Storage Center Decision will ensure protection of the environmental quality and reasonably safe and reliable operation of the Willow Rock Energy Storage Center.
3. Implementation of the Conditions of Certification contained in the Willow Rock Energy Storage Center Decision will also ensure that the Willow Rock Energy Storage Center project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative environmental impacts, with the exception of unmitigable significant impacts to visual resources.
4. Impacts to visual resources caused by the Willow Rock Energy Storage Center will be significant and unavoidable at Key Observation Points 2, 3 and 4. There are no feasible alternatives to the Willow Rock Energy Storage Center that would reduce the significant impacts to visual resources and achieve most of the benefits and objectives of the project.
5. The Decision details specific energy and non-energy benefits from the Willow Rock Energy Storage Center, including: sustainable, non-combustible, and quick-starting energy storage technology that will facilitate the integration of renewable energy into the electrical grid while displacing more greenhouse gas intensive and less efficient energy generation; and direct and indirect economic benefits through creation of highly skilled jobs, state and local tax revenues, and expenditures for materials and supplies.
6. Changes or alterations have been incorporated into the Willow Rock Energy Storage Center that lessen the impacts of the project, and that mitigate to a less than significant impact in all areas except for visual resources.
7. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the Willow Rock Energy Storage Center and may be reasonably expected to ensure public health and safety.
8. The Willow Rock Energy Storage Center will, with implementation of the Conditions of Certification, avoid any substantial adverse environmental effects on nearby state, regional, county, and city parks, and areas for wildlife protection.
9. There is an environmental justice population, based on either the presence of minority or low-income populations, within a six-mile radius from the project. With the exception of significant impacts to visual resources, the Willow Rock Energy Storage Center will not have any significant environmental impacts and therefore will not have a disproportionate impact on environmental justice populations.

10. Based on the federal and state guidelines on environmental justice, the significant impacts to visual resources from the Willow Rock Energy Storage Center will not have a disproportionate socioeconomic impact on minority or low-income populations.
11. The Decision contains a discussion of the public benefits of the Willow Rock Energy Storage Center as required by Public Resources Code section 25523(h).
12. The Willow Rock Energy Storage Center will benefit the local and regional area in local expenditures and payrolls during the construction and operation of the facility, as well as a benefit to public finance and local economies through taxation. These activities will provide an economic benefit to the local and regional area.
13. The Willow Rock Energy Storage Center Decision contains measures to ensure that the planned, temporary, or unexpected closure of the Willow Rock Energy Storage Center will conform to applicable laws, ordinances, regulations, and standards.
14. Specific economic, legal, social, technological, and other considerations including the provision of employment opportunities for highly trained workers, make infeasible the alternatives identified in the Decision which might avoid the significant impacts to visual resources.
15. With respect to the unavoidable significant impacts to visual resources, the CEC finds that specific energy, economic, technological, and other benefits of the Willow Rock Energy Storage Center outweigh the significant impacts to visual resources. The Decision describes the CEC's specific reasons for this statement of overriding considerations and those reasons are supported by substantial evidence in the record.
16. The proceedings leading to the Willow Rock Energy Storage Center Decision have been conducted in conformity with the regulations governing the consideration of an Application for Certification, and thereby meet the requirements of Public Resources Code sections 21000 *et seq.* and 25500 *et seq.*

ORDER

Therefore, the Commission orders the following:

1. The Presiding Member's Proposed Decision (PMPD) filed on November 12, 2025 (TN 263183) and Errata filed on December 16, 2025 (TN 267949), as set forth in the Proposed Final Decision)(TN 267950) plus two additional corrections on pages A-135 and A-137 identified in CEC Staff's communication to the Hearing Office (TN 267974), are hereby adopted as the CEC's Final Decision and incorporated by reference in this Order.
2. The Application for Certification for the Willow Rock Energy Storage Center as described in the Decision and a certificate to construct and operate the Willow Rock Energy Storage Center are hereby granted.

3. The approval of the Application for Certification for the Willow Rock Energy Storage Center is subject to the timely performance of all Conditions of Certification and compliance verifications.
4. The Conditions of Certification and compliance verifications for the Willow Rock Energy Storage Center are integrated with this Order and are not severable therefrom.
5. While the project owner may delegate the performance of a condition or verification, the duty to ensure adequate conformance of a condition or verification may not be delegated.
6. This Order is adopted, issued, effective, and final on December 19, 2025.
7. Reconsideration of this Order is governed by Public Resources Code section 25530.
8. Judicial review of this Order is governed by Public Resources Code section 25531 and *Communities for a Better Environment v. Energy Resources Conservation & Development Commission* (1st District 2020) 57 Cal.App.5th 786.
9. The CEC hereby adopts the Conditions of Certification, compliance verifications, and associated dispute resolution procedures set forth in the Decision as its monitoring system required by Public Resources Code section 25532.
10. All Conditions of Certification take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, excavation, controlled detonations, and permanent structure construction.
11. This Order licenses the project owner to commence construction of the Willow Rock Energy Storage Center. Subject to the provisions of California Code of Regulations, title 20, section 1720.3, this license expires by operation of law when the Willow Rock Energy Storage Center's commencement of construction deadline passes with no construction.
12. The Executive Director shall transmit a Notice of Decision and appropriate accompanying documents as provided by Public Resource Code section 25537 and California Code of Regulations, title 20, section 1768.
13. The Hearing Officer shall incorporate the PMPD and Errata, as set forth in the Proposed Final Decision plus the two additional corrections identified on the record during the Public Hearing on December 19, 2025, into a single document as the Final Decision. Publication of that document shall not affect the adoption, effective, issuance or final dates of this Order established in paragraph 6 above.

IT IS SO ORDERED

CERTIFICATION

The undersigned Secretariat to the Commission does hereby certify that the foregoing is a full, true, and correct copy of an Order duly and regularly adopted at a meeting of the California Energy Commission held on December 19, 2025.

AYE: Hochschild, McAllister, Gallardo, Skinner

NAY: NONE

ABSENT: Gunda

ABSTAIN: NONE

Dated: December 19, 2025

SIGNED BY:

Kim Todd
Secretariat

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1 Introduction

A. Summary of the Decision

This Proposed Final Decision (Decision) contains the proposed rationale of the California Energy Commission (CEC) in determining that the proposed Willow Rock Energy Storage Center (Willow Rock, or project) will, as mitigated, either have no significant impacts on the environment and comply with all applicable laws, ordinances, regulations, and standards (LORS), or is required for public convenience and necessity and there is no more prudent and feasible means of achieving such public convenience and necessity.¹ This Decision is prepared by the Willow Rock Energy Storage Center Committee (Committee) assigned to manage the proceedings for the Application for Certification (AFC, or Application) for the Willow Rock Energy Storage Center Docket Number 21-AFC-02.² This Decision is based exclusively upon the record established during this certification proceeding and summarized in this document. The Committee has independently evaluated the evidence, provided references to the record³ supporting the findings and conclusions, and specified the measures required to ensure that Willow Rock is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The CEC has exclusive jurisdiction to license this project and is considering this Application under a review process established by Public Resources Code, sections 25500 *et seq.* and California Code of Regulations, title 20, sections 1200 *et seq.* A license issued by the CEC is in lieu of other state and local permits.

B. Background

On December 1, 2021, GEM A-CAES LLC (Applicant, or project owner)⁴ filed an AFC with the CEC to construct and operate the Gem Energy Storage Center.⁵ On June 8, 2022, the CEC

¹ The proposed Conditions of Certification referenced and relied upon in the Decision are provided in **Appendix A** of this Decision.

² On March 10, 2023, the CEC amended its designation of a Committee consisting of Andrew McAllister, Commissioner and Presiding Member, and Noemí Gallardo, Commissioner and Associate Member, to preside over any proceedings arising from the Application. (TN 249087.) This and all other documents related to this proceeding may be found in the [online docket](https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-AFC-02) at <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=21-AFC-02>.

³ The Reporter's Transcript of the Committee Evidentiary Hearing is cited as "[Date] [Event] RT [page number]:[line number(s)]." For example: 8/21/2025 Evidentiary Hearing RT p. 77:5-13. The exhibits included in the evidentiary record are cited as "Exhibit XXXX" or "Ex. XXXX". A list of all exhibits admitted into evidence is contained in **Appendix B** of this Decision.

⁴ A list of Acronyms and Definitions frequently used in this Decision is contained in **Appendix C** of this Decision.

⁵ See Application beginning with TN 240571-1 *et seq.* The application comprises many separate documents filed in the docket beginning December 1, 2021, e.g., the Introduction is TN 240751-2.

determined that the Application filed for the project was exempt from the Notice of Intention process normally required for proposals to construct a thermal power plant or electric transmission line and other related facilities on a site, and ordered that the project could proceed as an AFC pursuant to Public Resources Code, section 25519.⁶ On July 13, 2022, the CEC found that the Application contained the information required under Public Resources Code section 25522 and California Code of Regulations, title 20, sections 1704 and 1709 and Appendix B, and that the AFC was complete,⁷ commencing a 12-month timeline to issue a final decision on the AFC for the power plant and related facilities pursuant to Public Resources Code, section 25540.6.

On August 5, 2022, Applicant changed the name of the project to the Willow Rock Energy Storage Center.⁸

On March 8, 2024, Applicant filed a Supplemental AFC (Supplemental AFC) to relocate and reconfigure the proposed project.⁹ The Supplemental AFC was deemed complete on July 16, 2024.¹⁰

The Supplemental AFC proposes a nominal 520 MW gross (500 MW net) and 4,160 MWh gross (4,000 MWh net) compressed air energy storage facility deploying Hydrostor Inc. (Hydrostor) Advanced Compressed Air Energy Storage (A-CAES) technology and related accessories. The facility will include four nominal 130 MW gross power turbine trains, each containing electric motor-driven air compressors, heat exchangers, air-powered turbine generators, and 100-foot-tall air exhaust stacks. The trains will share a thermal storage system including six 100-foot-tall hot-water spherical storage tanks and two 60-foot-tall cold-water storage tanks. The proposed project also includes a 21.5-acre, 600-acre-foot capacity hydrostatically compensating surface reservoir with liner and interlocking shape floating cover, a 900,000 cubic yard underground compressed air storage cavern, and all associated operational and safety equipment and piping. The Applicant also proposes an aboveground architectural berm for the onsite re-use of excavated cavern rock, as one of two options for managing that rock; the second option would be to transport the rock offsite to a rock processing facility. The proposed Willow Rock storage facility (Willow Rock site) will be sited on 88.6 acres north of Dawn Road and between State Route 14 (SR-14) and Sierra Highway within unincorporated Kern County, California, approximately 4 miles north of Rosamond, California. Energy stored at Willow Rock will be delivered to the Southern California Edison (SCE) Whirlwind Substation

⁶ Ex. 1006 (TN 243543).

⁷ TN 244093.

⁸ Ex. 1007 (TN 244331).

⁹ The Supplemental AFC comprises many separate documents filed in the docket beginning March 1, 2024, starting with Exhibit 1025 (TN 254774). The Applicant filed an attestation of completeness on March 8, 2024 (Exhibit 1053 (TN 254951)) containing a table specifying each of the filings in the docket that comprise the Supplemental AFC.

¹⁰ TN 257763.

located southwest of the site at the intersection of 170th Street W and Rosamond Boulevard, via a new approximately 19-mile 230-kilovolt (kV) generation-tie (gen-tie) line, including approximately 186 transmission poles. The Applicant proposes a preferred route and eight alternate routes based on the feasibility of accessing and constructing the gen-tie on certain segments. The Willow Rock Energy Storage Center will be capable of operating on a 24-hour basis, 365 days a year with an approximately 50-year lifespan.

For more details about Willow Rock, please see the **Project Description** in Section 2 of this Decision.

C. Project Certification Process

Willow Rock and its related and appurtenant facilities are subject to CEC licensing jurisdiction.¹¹ During certification proceedings, the CEC acts as the lead state agency under the California Environmental Quality Act (CEQA).¹² The entirety of the CEC's regulatory process, including the evidentiary record, staff assessments, and associated analyses and decisions of the Committee and the CEC, are functionally equivalent to the preparation and adoption of an Environmental Impact Report pursuant to CEQA.¹³ The process is designed to be completed within a specified time period when the required information is submitted in a timely manner.

The CEC's certification process provides a thorough review and analysis of all aspects of a proposed power plant project. During this process, the CEC conducts a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

The CEC's process allows for and encourages public participation so that members of the public may become involved either informally or on a formal level as intervenor parties who have the opportunity to present evidence and cross-examine witnesses. The CEC also has a Public Advisor available to assist the public with participating in the certification proceeding by contacting publicadvisor@energy.ca.gov or (916) 269-9595.

The process begins when an Applicant submits an application for certification, or AFC. CEC staff (Staff) reviews the data submitted as part of the AFC and makes a recommendation to the CEC¹⁴ on whether the AFC contains adequate information to begin the certification process. After the CEC determines an AFC contains sufficient analytical information and deems

¹¹ Pub. Resources Code, §§ 25500 *et seq.*

¹² Pub. Resources Code, §§ 25519(c) & 21000 *et seq.*

¹³ Pub. Resources Code, § 21080.5

¹⁴ The CEC, or Energy Commission, consists of the five commissioners appointed and confirmed to review, oversee, and vote on items of business for the CEC. CEC Staff are the professional staff, consultants, or experts of the CEC's Siting, Transportation and Environmental Protection (STEP) Division who review and perform the environmental, social, engineering, and safety review.

it “data adequate,” it appoints a Committee of two commissioners to manage the discovery and evidentiary proceedings of the certification process. Once discovery is complete, Staff prepares a Preliminary Staff Assessment (PSA) and Final Staff Assessment (FSA) that evaluate the engineering, environmental, safety, and reliability of the proposed project. Next, this process includes Evidentiary Hearings and other public conferences, through which the evidentiary record is developed and becomes the basis for the Presiding Member’s Proposed Decision (PMPD). The PMPD considers a project's environmental impact and conformity with applicable laws, ordinances, regulations, and standards (LORS) and provides recommendations to the CEC for a Final Decision.

The initial portion of the certification process is weighed heavily towards ensuring public awareness of the proposed project and obtaining necessary technical information. During this informational and discovery phase, the following events typically occur:

- The Committee holds an informational hearing, a site visit, and status conferences.
- Staff and the Parties publish issues identification reports.
- Individuals or groups may petition the Committee to be Intervenors.
- Staff and Intervenors issue data requests.
- Staff conducts tribal consultation.
- Staff holds public workshops for Intervenors, agency representatives, California Native American tribes, and members of the public to meet with Staff and the Applicant to discuss, clarify, and negotiate pertinent issues.
- Staff publishes its initial technical evaluation of the AFC in its PSA and makes it available for a minimum 30-day comment period.
- Staff publishes its FSA containing Staff’s conclusions about potential environmental impacts and conformity with LORS; proposed Conditions of Certification or mitigation that apply to the design, construction, operation, and closure of the facility; comments made on the PSA; and Staff’s responses to those comments. The FSA serves as Staff’s formal opening testimony in the Evidentiary Hearing.

Following the discovery phase, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the Parties. Shortly after the Prehearing Conference, the Committee schedules a formal Evidentiary Hearing. At the Evidentiary Hearing, all Parties, including Intervenors, may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Local, state, federal, and tribal governmental agencies and members of the public may offer oral or written comments at these hearings. Evidence submitted at the Evidentiary Hearing provides the basis for the Committee’s PMPD, which is available for a 30-day public comment period. The PMPD contains the Committee’s analysis, recommendations, and responses to comments made on the FSA and during the Evidentiary Hearing. Depending on the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, the Revised PMPD requires an additional public comment period. Finally, the CEC decides whether to accept, reject, or modify the Committee's recommendations in a Final Decision at a public hearing.

Throughout the licensing process, members of the Committee, and ultimately the CEC, serve as factfinders and decisionmakers. Other Parties, including the Applicant, Staff, and Intervenor, function independently with equal legal status. An "ex parte" rule prohibits Parties in the case, or other persons with an interest in the case, from communicating on substantive matters with the decisionmakers, their staff, or the assigned hearing officer, unless these communications are made on the public record.¹⁵

D. Procedural History

i. Original AFC

As stated above, the CEC has exclusive jurisdiction to license this project. Public Resources Code, sections 25500 *et seq.* and CEC regulations mandate a public review process and specify the occurrence of certain procedural events in which the public may participate.¹⁶ The key procedural events that occurred in the Willow Rock proceeding are summarized here.

On December 1, 2021, GEM A-CAES LLC (Applicant) filed an AFC with the California Energy Commission (CEC) to construct and operate the Gem Energy Storage Center.¹⁷ On June 15, 2022, the CEC determined that the proposed project was exempt from the Notice of Intention process under Public Resources Code section 25540.6(a)(3), and it issued an order directing Staff to process the application as an AFC.¹⁸

On July 13, 2022, the CEC adopted the Executive Director's recommendation finding that the Applicant's original AFC included all the information required for a complete AFC, initiating the 12-month timeline for the CEC to reach a final decision on the AFC pursuant to Public Resources Code section 25540.6.¹⁹ On August 5, 2022, Applicant changed the name of the proposed project to the Willow Rock Energy Storage Center.²⁰

On August 11, 2022, the Committee convened a site visit and informational hearing on the original AFC in Rosamond, California.²¹ The Notice of the Public Site Visit and Informational Hearing posted on August 1, 2022 was published in both English and Spanish, and was mailed to state and local agencies and members of the community who were known to be interested in the proposed project, including landowners of land adjacent to or in the vicinity of the proposed project.²² During the site visit, interested members of the public were provided transportation to the proposed site of the energy storage facility located near 8684 Sweetser Road, Rosamond, California, 93560, and also to the SCE Whirlwind Substation along the 10.9-

¹⁵ Gov. Code, §§ 11430.10—11430.80.

¹⁶ Cal. Code Regs., tit. 20, §§ 1200 *et seq.* & 1701 *et seq.*

¹⁷ See application beginning with TN 240571-1 *et seq.*

¹⁸ Ex. 1006 (TN 243543).

¹⁹ TN 244093.

²⁰ TN 244331.

²¹ TN 244282.

²² TN 244281 & TN 244282.

mile route for the generation tie (gen-tie) from the Sweetser Road site to the interconnection at the substation. During the informational hearing, the Committee, the Applicant and Parties, interested governmental agencies, and other public participants discussed issues related to development of the Willow Rock project, described the CEC's review process, and explained opportunities for public participation.

On August 31, 2022, the Committee issued a Scheduling Order setting dates for discovery and maximum time limits for the publication of the staff assessments, leaving the schedule for the evidentiary hearing and final decision to be determined later.²³

On September 9, 2022, the Committee granted a petition to intervene filed by California Unions for Reliable Energy (CURE).²⁴

After many months of discovery, exchange of information, and analysis of the feasibility and potential impacts of the project, Staff filed a motion to suspend the proceeding because key project features appeared to require revision.²⁵ The Applicant did not object to Staff's motion,²⁶ and the Committee suspended the original AFC on August 11, 2023 (Suspension Order).²⁷ The Suspension Order provided that the suspension would terminate, and the AFC proceeding would resume, after Applicant filed a supplemental AFC (Supplemental AFC) and the Executive Director verified the completeness of the Supplemental AFC.²⁸

²³ TN 245754.

²⁴ TN 245943.

²⁵ TN 251029.

²⁶ TN 251029 & TN 251186.

²⁷ TN 251599.

²⁸ TN 251599, p. 3.

ii. Supplemental AFC

Beginning March 1, 2024, the Applicant began submitting materials related to the Supplemental AFC to the docket,²⁹ and on March 8, 2024, attested to the completeness of the Supplemental AFC.³⁰ The attestation provided detailed tables indicating which pre-existing documents remained applicable to the Supplemental AFC and which ones were “largely superseded.”³¹

On July 16, 2024, the CEC Executive Director verified that the Supplemental AFC was complete and recommended that the Committee accept the Supplemental AFC as complete and restart the 12-month timeline to reach a decision on the Supplemental AFC per Public Resources Code section 25540.6.³² Based on that recommendation, the Committee terminated the Suspension Order on July 26, 2024, and reinstated the proceeding.³³

On August 30, 2024, the Committee granted a petition to intervene filed by the Center for Biological Diversity.³⁴

On September 9, 2024, the Committee issued a Revised Scheduling Order, rescheduling dates for the discovery phase of the proceeding.³⁵

On November 6, 2024, the Committee convened a second Site Visit and Informational Hearing for the Supplemental AFC in Rosamond, California, to discuss the relocated and reconfigured Willow Rock project described in the Supplemental AFC. The Notice of the Public Site Visit and Informational Hearing posted on October 2, 2024, was published in both English and Spanish,³⁶ and was mailed to state and local agencies and members of the community who were known to be interested in the proposed project, including landowners of land adjacent to or in the vicinity of the relocated proposed project. The Site Visit included transportation for the Parties and interested members of the public to the new proposed site located on an 88.6-acre portion of a parcel north of Dawn Road and between State Route 14 and Sierra Highway, approximately 4 miles north of Rosamond, California within unincorporated Kern County. The Site Visit also included a window tour to the Southern California Edison Whirlwind Substation along the 19-mile preferred route for the generation-tie (gen-tie) line. During the Informational Hearing, the Committee, the Parties, interested governmental agencies, and other public participants discussed issues related to development of the Willow Rock project

²⁹ TN 254774 *et seq.*

³⁰ TN 254951.

³¹ *Id.*

³² TN 257763.

³³ TN 258022.

³⁴ TN 258781.

³⁵ TN 259084.

³⁶ TN 259430 & 259527.

and the CEC's AFC review process, and the Public Advisor's Office explained opportunities for public participation.³⁷

On December 11, 2024, the Committee issued a Second Revised Scheduling Order, granting in part and denying in part a motion by the Applicant to amend deadlines. This order set a schedule for the remainder of discovery and also set dates for the evidentiary phase of the proceeding.³⁸

On March 13, 2025, Staff filed a "Partial Preliminary Staff Assessment" providing analyses for a few engineering and environmental topics and promising the remaining analyses in the future.³⁹

On April 2, 2025, the Committee issued a Third Revised Scheduling Order, directing the Staff to file the full PSA on April 16, 2025, to keep the current schedule for the evidentiary phase on track.⁴⁰ That same day, Staff filed a Motion to Revise the Schedule.⁴¹

On April 14, 2025, the Committee convened a Status Conference of the Parties to resolve Staff's motion and the scheduling challenges in a public forum.⁴² The Committee's Fourth Revised Scheduling Order published on April 15, 2025, memorialized the decision of the Committee, and set new deadlines for the PSA and new dates for the evidentiary phase.⁴³

On April 29, 2025, Staff timely filed a complete PSA.⁴⁴ The public comment period closed on June 16, 2025.

On June 5, 2025, Staff led a Technical and Mitigation Workshop for the Parties and representatives from government agencies, California Native American tribes, and the public to discuss the PSA and identify and resolve areas of disagreement.⁴⁵

On July 16, 2025, Staff timely filed a complete FSA.⁴⁶

On July 17, 2025, the Committee filed a Notice of Prehearing Conference and Evidentiary Hearing, Fifth Revised Scheduling Order, and Further Orders, providing specific instructions to the Parties for submitting testimony and evidence into the record, and describing how

³⁷ Government representatives in attendance included: Kern County Planning and Natural Resources Department; Assemblymember Tom Lackey's office; Rosamond Community Services District; Rosamond Municipal Advisory Council; and Kern Economic Development Corporation.

³⁸ TN 260601.

³⁹ TN 262184.

⁴⁰ TN 262562.

⁴¹ TN 262571.

⁴² TN 262592.

⁴³ TN 262690.

⁴⁴ TN 262852.

⁴⁵ TN 263301.

⁴⁶ TN 264843.

representatives from government agencies, California Native American tribes, and the public may participate in the public hearings.⁴⁷

The Applicant, Staff, and Intervenor Center for Biological Diversity filed opening and rebuttal testimony, and each filed a list of Exhibits from the Docket proposed to be introduced as evidence at the Evidentiary Hearing.

Instead of testimony and exhibits, Intervenor CURE filed a joint statement with the Applicant indicating that the two Parties had reached an agreement to resolve the major environmental issues in dispute between them regarding the Willow Rock Energy Storage Center. CURE confirmed that it would not be introducing testimony or evidence at the Evidentiary Hearing.

The Committee conducted the Prehearing Conference on August 15, 2025, via Zoom. The Committee conducted the Evidentiary Hearing on August 21, 2025, at the Mojave Air & Space Port in Mojave, California. Following the hearing, the Committee invited closing briefs from each of the Parties on legal issues.

The Committee published the PMPD on November 12, 2025, subject to a 30-day comment period. The comment period will close on December 12, 2025.

The CEC will convene a Public Hearing to consider the PMPD and any comments received at its Business Meeting on December 19, 2025.

E. CEC Outreach and Tribal Consultation

Several entities within the CEC provide various notices concerning power plant siting cases. Upon receipt of an AFC, Staff forwards the application to governmental agencies having land use and related jurisdiction in the area of the proposed site and related facility, to obtain their comments on the project.⁴⁸ Staff also publishes a summary of the AFC in public libraries and newspapers of general circulation in the county where the site and related facilities will be located, and throughout the state.⁴⁹ Based on English fluency data in the recent U.S. Census for the population residing in the cities and communities within a six-mile radius of the Willow Rock project site, Staff deemed translation of all notices into Spanish as appropriate, and the public notices for this AFC posted in the public libraries and local newspapers were published in both English and Spanish.⁵⁰ Those notices provided instructions for interested persons to sign up for electronic delivery or request mailing of all future notices in the AFC. Staff maintained a mailing list of all persons statewide who request mailed delivery of notices in this proceeding.

⁴⁷ TN 264853.

⁴⁸ Pub. Resources Code, § 25516.6(f); Cal. Code Regs., tit. 20, § 1714.

⁴⁹ Pub. Resources Code, § 25516.6(g); Cal. Code Regs., tit. 20, § 1713.

⁵⁰ Ex. 2000, FSA, pp. 2-4 and 2-5, and p. 6-5. For this AFC, the summary was published in Rosamond News (in English) on March 28, 2022 (TN 242487), and El Popular circulated throughout Kern County (in Spanish) on April 8, 2022 (TN 242632).

Accordingly, Staff provided notices of Staff workshops and the release of the Staff Assessments in the Docket 21-AFC-02 in both English and Spanish, and mailed these notices to the individuals on the mailing list for this AFC. The Staff also mailed the Notification of Preliminary Staff Assessment in both English and Spanish to all owners and occupants of properties within 1,000 feet of the project site and 500 feet of project linear facilities.⁵¹

Similarly, the Hearing Office notices Committee-led events and Committee orders, including the Informational Hearing and Site Visit, Status Conferences, the Prehearing Conference, Evidentiary Hearings, and other orders and decisions of the Committee. The Hearing Office published all such notices for this AFC in both English and Spanish and distributed the notices to the mailing list as well.

The Staff in the Siting, Transmission, and Environmental Protection Division (STEP) conducts public workshops and consultation with California Native American tribes. Pursuant to Assembly Bill 52⁵² and the CEC Tribal Consultation Policy⁵³, Staff sent letters to California Native American tribes on a Native American Heritage Commission (NAHC) list of tribes identified as having cultural affiliation in the project vicinity and interested in consulting on development projects in the project area.⁵⁴ Staff also requested from the NAHC a search of the Sacred Lands File and a list of contacts among California Native American tribes affiliated with the Willow Rock area.

Tribal consultation letters were mailed on July 26, 2022,⁵⁵ and Staff conducted outreach and consultation with regional tribal governments pursuant to the Governor's Executive Order B-10-11, the CEC's Tribal Consultation Policy, the CEC's Siting Regulations,⁵⁶ and CEQA.⁵⁷ Staff including STEP's Tribal Liaison offered face-to-face, telephone, and email consultations to the tribes that responded.⁵⁸ Details on the tribal consultation and consideration of relevant issues in Staff's analysis of the project are detailed in Section 7(C) **Cultural and Tribal Cultural Resources**.

The Office of the Public Advisor, Energy Equity and Tribal Affairs (Public Advisor's Office) provides additional support and outreach for critical events, language and accessibility support, and information to interested persons who would like to become more actively involved in a power plant siting proceeding. Further, the Office of Media and Public Communications

⁵¹ Ex. 2000, FSA, p. 6-5.

⁵² Pub. Resources Code, §§ 21080.3.1 *et seq.*

⁵³ CEC Tribal Consultation Policy (updated February 14, 2024), publication number CEC-130-2024-01, <https://www.energy.ca.gov/publications/2024/california-energy-commission-tribal-consultation-policy>.

⁵⁴ Ex. 2000, FSA, p. 2-3.

⁵⁵ TN 244223.

⁵⁶ Cal. Code Regs., tit. 20, § 1714.

⁵⁷ Ex. 2000, FSA, p. 6-5.

⁵⁸ Ex. 2000, FSA, p. 2-3.

provides notice of events to local and regional press through press releases and through social media channels to the general community.

Anyone may also subscribe to the proceeding's e-mail List Server which gives an immediate notification of documents posted to the docket in the proceeding. Through the activities of each of these entities, the CEC has made every effort to ensure that interested persons are notified of activities in this proceeding.

F. Public Comment

Throughout these proceedings, as reflected in the transcribed record of public hearings, the Committee provided an opportunity for public comment at each conference and hearing that was convened. Written comments from the public were also solicited on the PSA.

During the 45-day public comment period on the PSA, the California City Chamber of Commerce and twenty-seven members of the surrounding community submitted general comment letters expressing "strong support" for the Willow Rock project, generally based on the investment in the East Kern County economy and in clean energy reliability and resiliency. Additionally, the California Department of Fish and Wildlife (CDFW), the Department of Water Resources Division of Safety of Dams (DWR-DSOD), the Lahontan Regional Water Quality Control Board (Lahontan RWQCB), and Defenders of Wildlife & California Native Plant Society all provided substantive comments on the PSA. The Final Staff Assessment (FSA) published by the Staff on July 16, 2025, addressed each of these comments.

On April 30, 2025, the Kern County Board of Supervisors voted to support the project expressly conditioned on the inclusion of certain mitigation requested by the Kern County Planning and Natural Resources Department to address local impacts to the fire department, roads, and traffic.⁵⁹ At the Evidentiary Hearing on August 21, 2025, the Director of the Kern County Planning and Natural Resources Department reported to the Committee that she was authorized to convey that the Kern County Board of Supervisors fully supports the Willow Rock Energy Storage Center project based on the inclusion of all requested mitigation in the FSA.

Agency and public comments were invited during the Prehearing Conference on August 15, 2025, the Evidentiary Hearing on August 21, 2025, and during the 30-day PMPD comment period beginning November 12, 2025. All comments from these events are listed and summarized in **Attachment D**. Additionally, comments germane to the findings of fact and conclusions of law are addressed where appropriate in each relevant section in this Decision.

⁵⁹ TN 262870.

2 Project Description

A. Introduction

On December 1, 2021, Gem A-CAES, LLC (Applicant) filed an original Application for Certification (AFC) to construct an advanced compressed air energy storage (A-CAES) project in Eastern Kern County, California. On March 8, 2024, the Applicant certified a completed Supplemental AFC to relocate and redesign the Willow Rock Energy Storage Center (Willow Rock) project on the western portion of an approximately 112-acre parcel with Assessor's Parcel Number (APN) 431-022-13 that is bisected by Sierra Highway and the Union Pacific Railway. The Applicant will construct, own, and operate the project.

The Project Description was uncontested, although there are two contingencies for the final project description. The final size and footprint of the energy storage site will depend on whether the Applicant elects to either construct an architectural berm on the west and north sides of the facility for onsite reuse of excavated cavern rock, or transport the rock to an offsite processing and reuse facility. Additionally, as of the Evidentiary Hearing, the Applicant was considering a preferred route and eight alternative routes for the proposed 19-mile 230-kilovolt (kV) generation-tie (gen-tie) line from the energy storage facility site (Willow Rock site) to the Southern California Edison (SCE) Whirlwind Substation.

Evidence on the topic of Project Description is contained in Exhibits 1001—1025, 1032—1036, 1039—1041, 1053, 1055, 1056, 1058, 1059, 1070—1075, 1112, 1127, 1128, 1130, 1140, 1141, 1153, 1155—1160, 1192, 1233 and 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.¹

B. Setting

The Willow Rock project will be constructed on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 (SR-14) and Sierra Highway within unincorporated, southeastern Kern County, California. The site is on the western portion of an approximately 112-acre parcel identified as APN 431-022-13. Additional parcels adjacent to the site may be used for temporary parking, construction laydown, environmental mitigation, or optional construction of an architectural berm.² (See **Figure 2-1.**) The site is on undeveloped land zoned Exclusive Agriculture (A), which allows "electrical power generating plants" and the temporary construction processes such as rock crushing and the concrete batch plant, subject to a conditional use permit (CUP). The area surrounding the site has

¹ 8/21/25 Evidentiary Hearing RT pp. 38:19 – 48:20.

² Ex. 1233, Applicant's Opening Testimony, Attachment A, pp. 2-2 through 2-4, and Tables 2-1 and 2-2.

sparse residential development with the nearest residence approximately 0.8 miles from the northwest corner of the Willow Rock site.

The Supplemental AFC describes in detail a proposed 19-mile generation tie (gen-tie) route, plus eight optional routes, to connect the storage facility to the SCE Whirlwind Substation located southwest of Willow Rock at the intersection of 170th Street W and Rosamond Boulevard. (See **Figure 2-2.**) The proposed options for the gen-tie lines pass through a variety of base zoning designations and their zoning overlays, including the general base zoning designations of: Estate, Exclusive Agriculture, Limited Agriculture, General Commercial, Neighborhood Commercial, Light Industrial, Open Space, Low Density Residential, Platted Lands, and Recreation Forestry. The gen-tie line is permitted under all these zoning designations as transmission lines and supporting infrastructure.³ The final alignment will depend on feasibility, site access, and potential interactions with existing and planned uses adjacent to the route.⁴

C. The Proposed Project

The Willow Rock project will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using Hydrostor, Inc.'s (Hydrostor's) proprietary, advanced compressed air energy storage (A-CAES) technology.⁵ Energy stored at the facility will be delivered to the Southern California Edison (SCE) Whirlwind Substation via a new approximately 19-mile long 230-kilovolt (kV) generation-tie (gen-tie) line. Willow Rock will be capable of operating on a 24-hour basis, 365 days a year with an approximately 50-year lifespan.

Hydrostor's A-CAES technology is intended to provide long-duration, emission-free energy storage at bulk capacity. The system will store compressed air in a purpose-built underground storage cavern that is filled with water through a hydraulic conduit from a water storage compensation reservoir at the ground surface level. The hydrostatic pressure from the water in this compensation reservoir and the associated water shaft will maintain a near-constant air pressure in the cavern throughout both the charging and discharging cycles. The water-based thermal management system will capture the heat developed during air compression, store it, and then re-use it when generating electricity, making the process nearly adiabatic. This design is intended to increase the system's efficiency and eliminate the need for burning fossil fuels.

³ Ex. 2000, FSA, p. 3-8.

⁴ Ex. 1233, p. 6.

⁵ For drawings of the construction phase, operations phase, and elevation profiles with and without the architectural berm, see Ex. 1233, Applicant's Opening Testimony, Attachment A, Figures 2-3 through 2-6.

When the Hydrostor A-CAES system is charging (known as the “charge cycle”), off-peak energy or surplus electricity (such as excess solar that might otherwise be curtailed when production exceeds demand) from the grid is used to drive air compressors, converting the electrical energy into potential energy in the compressed air and heat energy stored by the thermal energy management system. To generate electricity (known as the “discharge cycle”), compressed air is discharged from the cavern by hydrostatic pressure when the compensation water flows back into the cavern. The cool high-pressure air exiting the cavern is reheated using the heat stored by the thermal management system. The reheated compressed air is then used to drive air-expansion turbine generators, which convert the stored potential energy back into electricity for the grid.

The actual net electrical output of the system will vary in response to ambient air temperature conditions, electrical grid operating requirements such as voltage or volt ampere reactive (VAR) support, grid dispatch requirements, and other operating factors.

i. A-CAES Energy Storage Process and Cooling Systems

The overall facility will consist of four nominal 130 MW (gross) trains, outputting a total of 500 MW net at the point of interconnection. Each train will contain an electric motor-driven air compressor drivetrain, heat exchangers, an air turbine generator, air exhaust stacks, and ancillary equipment. The trains will share a common set of thermal storage tanks (hot and cold water), as well as the air storage cavern. The project will include the following key features:

- Eight electric-motor-driven air compressors configured in four trains, totaling nominally 500 MW net
- Four nominally 130 MW air-powered turbine generators with 100-foot-tall air vent stacks
- Heat extraction and recovery main process heat exchangers
- Thermal storage system using water, including up to six, 87.5-foot-diameter by 100-foot-tall (maximum) hot-water spherical storage tanks and two 150-foot-diameter, 60-foot-tall cold-water storage tanks
- Cooling system including three air-cooled heat exchangers with evaporative mist system using excess internally produced process water
- One approximately 21.5-acre, 600-acre-foot capacity hydrostatically compensating surface reservoir with liner and interlocking shape floating cover
- Aboveground piping pipe racks and filter houses
- Underground compressed air storage cavern (approximately 900,000 cubic yards capacity) constructed in the bedrock below the site at a depth of approximately 2,000 to 2,500 feet below ground surface (bgs), including cavern access via one or more shafts
- Interconnecting conduits for movement of compressed air to and from the cavern
- Potential permanent aboveground architectural berm for onsite re-use of excavated cavern rock

The facility will be designed for 520 MW gross rated capacity on both charge and discharge with an 8-hour discharge duration at full rated capacity. The facility will be designed to achieve an average round trip efficiency (RTE) of 55 to 60 percent. This means that the facility will return 55 to 60 percent of the electric energy used to complete the storage cycle as useful power output during the discharge cycle and that a complete charge of the cavern will require about 13.5 hours at full rated capacity (eight hours divided by 60 percent RTE).

More detailed discussions of the A-CAES energy storage process and cooling systems are provided throughout this Decision including in Facility Design (Section 5(A)), Power Plant Efficiency (Section 5(B)), and Power Plant Reliability (Section 5(C)).

ii. Electric Transmission System Engineering

The net electric power generated at Willow Rock will be transmitted to the electrical grid at the point of interconnection. The electric power required for charging the system will be drawn from the electrical grid with additional power for the auxiliaries. A power management system will interface with Southern California Edison (SCE) to coordinate power export/import quality and voltage regulation.

Power will be generated by the four generators at 13.8 kV and transformed to 230 kV for the grid interconnection. The 230/13.8 kV main transformers in each train will support connection to the local 230 kV network at the SCE Whirlwind Substation.

To connect the energy storage facility with the SCE Whirlwind Substation, the project proposes:

- One approximately 19-mile-long 230 kV single-circuit double-bundle conductor gen-tie line along a preferred gen-tie route or one of 8 route options
- Approximately 186 transmission poles (approximately 0.2 acres permanent disturbance)
- Onsite 230 kV substation with oil-filled transformers with 230/13.8 kV rating

There are expected to be a small number of short underground gen-tie line segments to allow for crossing of a Los Angeles Department of Water and Power high-voltage transmission corridor and in other locations where the transmission corridor is congested with preexisting facilities. Open trenching or horizontal directional drilling will be used to complete these short underground segments.

More detailed discussions of the electric transmission system are provided throughout this Decision including in **Transmission System Engineering** (Section 5(D)) and **Transmission Line Safety and Nuisance** (Section 5(E)).

iii. Operation and Maintenance Facilities, Ancillary Support Systems, and Other Features

The Applicant's objective is for the Willow Rock project to be available to operate at its full load at least 95 percent of the time. The energy storage center will be operated and monitored continuously 24 hours per day, seven days per week, by qualified and licensed onsite operations staff and will not be remotely operated (other than potential grid regulation-required operations such as generator transfer trips or special protection schemes).

There will be a total of approximately 40 full-time staff to operate the facility. The operations staff will include control room operators (24 hours per day, seven days per week) and roving operators in the field conducting general rounds at least twice per 12-hour shift.

For operation and maintenance of the energy storage facility, the project includes:

- Site stormwater drainage system and stormwater percolation/evaporation pond
- Water supply connection to an existing Antelope Valley East Kern (AVEK) Water Agency supply pipeline adjacent to Sierra Highway east of the Willow Rock project site
- Fire detection and fire monitoring systems
- Firewater tank and fire suppression system
- Acoustic enclosures for Turbomachinery
- Weather Enclosures for Motor Control Center
- One primary all-electric and one secondary diesel-fired 345-kilowatt (kW) (460 horsepower) emergency fire pump
- Three diesel-fired up to 2.5 MW, 4.16 kV emergency backup power supply engines to maintain critical loads in the event of a loss of power
- One combined office, control room, and maintenance building
- Employee and visitor parking area with electric vehicle charging ports and landscaping
- Primary and secondary entrances with security access gates and site perimeter fencing
- Permanent plant access roads within the Willow Rock site
- Extension/upgrades to Dawn Road between the SR 14 interchange and Sierra Highway

Willow Rock will not require the combustion of fossil fuel and will not produce combustion-related air emissions during normal operation. The project will include three emergency diesel-fired engines to maintain critical loads in the event of a loss of power and one diesel-fired fire pump engine. These engines are expected to operate less than 50 hours per year for reliability testing and maintenance and will not operate concurrently during testing. The diesel-fired engines will operate in an emergency for other critical facility loads when electric power is not available. A separate diesel-engine-driven fire pump will provide water in the event of an emergency.

iv. Temporary Construction Facilities

To excavate the cavern, approximately 1.3 million cubic yards of crushed rock (accounting for swell and void space) will be extracted during construction. The proposed project will include options for managing the extracted rock that may be implemented alone or in any combination, including (a) permanent on-site storage in the form of an architectural berm around portions of the site; (b) off-taker transport for commercial use; and (c) off-taker transport for permanent off-site storage. The size of the potential architectural berm will depend on the quantity of rock. The height is expected to not exceed approximately 10 feet. If all the rock were re-used onsite, the total facility size will increase by up to an additional approximately 74.6 acres for a total of approximately 163.5 acres.

Temporary facilities and features to support the construction of the project include:

- Up to approximately 122.2-acre total laydown areas including cavern construction laydown area, construction phase earthwork areas, cavern rock temporary re-use areas, cavern rock temporary backup re-use areas, and parking areas located on adjacent and nearby parcels
- Rock crushing facility and concrete batch plant to support cavern construction and excavated rock management (acreage included in total temporary disturbance)
- Two temporary entrances for construction (the Dawn Road construction entrance may be converted to permanent)
- An estimated up to 1.5 miles of unpaved temporary access road along the gen-tie line corridor as needed (approximately 3.7 acres)
- Approximately 35 conductor pull and tensioning sites (approximately 21.5 acres total)
- Approximately 75- by 75-foot temporary disturbance for placement of each transmission pole (approximately 23.6 acres total)

v. Water Use

An estimated 1,400 acre-feet of water will be needed throughout the construction and startup period. Most of the water will be used for filling the hydrostatically compensating reservoir. Other uses include supporting construction of the cavern works (shaft drilling and cavern excavation), surface works (hydrotesting and general purpose washdown), and fire system testing.

The 600-acre-foot surface reservoir will require approximately 868 acre-feet of water for initial fill (accounting for evaporation losses during the filling period). The reservoir fill will require approximately 14 months, with additional monthly fill requirements. The required fill amount accounts for both precipitation and evaporation.

Once the facility is in operation, it is expected to have an annualized surplus of 3.6 acre-feet per year (on average) of non-potable recharge quality water to provide surface reservoir water make-up. Evaporative loss will be reduced by using a cover on the reservoir.

Antelope Valley East Kern (AVEK) will supply the quantity and quality of water needed for the project.

More detailed discussions of water requirements for the Willow Rock project are provided throughout this Decision including in **Soil and Water Resources** (Section 7(B)).

vi. Waste Management

a. Waste Water and Septic Waste

Most of the project wastewater will be reused in the system immediately after treating the water for reintroduction into the process. If required, between zero to 250,000 gallons per year of water could be hauled offsite to an appropriate treatment facility in compliance with all applicable laws, ordinances, regulations, and standards.

The septic waste from the administration/control building will be either 1) directed to a nearby underground septic storage tank, pumped out periodically by truck, and trucked offsite to an approved disposal facility, or 2) managed and discharged through a lateral septic system containing a lateral line from the structure to a septic tank.

b. Stormwater

Onsite stormwater flows generated within the Willow Rock project site boundary will be routed to an unlined stormwater pond and will not be discharged outside the Willow Rock project site. The specific method of offsite perimeter stormwater drainage will depend on whether the Applicant elects to install the architectural berm for the reuse of the excavated rock. Either way, offsite flows will be diverted via new perimeter ditches sized to carry the 100-year discharge calculated using TR55 Soil Conservation Service (SCS) Unit Hydrograph methodology, to the ditch alongside Sierra Highway.

c. Excavation Waste

Based on current engineering and environmental planning, the Applicant is considering options for adaptive re-use of the cavern rock either onsite within the project boundaries or hauled offsite to independent third parties. The project analysis assumes that cavern rock will be fully reused through a combination of four options: up to 100 percent reused onsite as an architectural berm (With Berm), up to 100 percent hauled offsite to the Robertson's Ready Mix in Los Angeles County, up to 100 percent hauled offsite to the Holliday Rock facility in Kern County, and/or up to 100 percent hauled offsite to the Vulcan Materials Inc. processing facility in Los Angeles County. At the time of this Decision, Applicant is pursuing commercial

agreements with the named private off-takers, and design of an onsite architectural rock berm is being advanced through engineering.

d. Solid Nonhazardous Wastes

The project will produce nonhazardous waste related to construction, operation, and maintenance that is typical of power generation and energy storage operations. Surface construction wastes will generally include soil, scrap wood, excess concrete, empty containers, scrap metal, insulation, and sanitary waste. Cavern construction wastes will include some of the same materials, as well as explosives packaging. Solid waste will be trucked offsite for recycling or disposal.

e. Hazardous Materials and Wastes

All hazardous materials and wastes including oily rags, lubricating oil, chemical cleaning solutions and waste will be stored, handled, and used, recovered, and recycled or disposed of following applicable regulatory requirements. Personnel will be properly trained in the handling of these chemicals and will be instructed in the procedures to follow in the event of a chemical spill or accidental release. Safety showers and eyewashes will be provided adjacent to, or in the vicinity of, chemical use and storage areas. Plant personnel will use approved personal protective equipment during chemical spill containment and cleanup activities. Adequate supplies of emergency response equipment, including absorbent material, will be stored onsite for spill cleanup.

More detailed discussions of waste management for the Willow Rock project are provided throughout this Decision including in **Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire** (Section 6(E)) and **Solid Waste Management** (Section 6(F)).

vii. Fire Protection

The fire protection system will be designed to protect personnel and limit property loss and facility downtime in the event of a fire. The system will include an electric fire pump, a small jockey pump to keep the system under pressure, and a fire protection water network system consisting of hydrants or standpipes and portable fire extinguishers. Where required, automatic or fire sprinkler systems will be provided. A diesel-fired approximately 345 kW (460 horsepower) fire pump will be provided for emergency backup.

More detailed discussions of the fire protection plans and requirements for the Willow Rock project are provided throughout this Decision including in **Worker Safety and Fire Protection** (Section 6(D)).

D. Project Schedule and Construction

i. Construction

The construction of the Willow Rock project from site preparation and grading through full-scale operation is expected to take 60 months. Major project milestones are listed in **Table 2-1**.⁶

TABLE 2-1 Major Project Milestones				
Target Project Milestones	Begin		Complete	
	Month Number	Calendar Date	Month Number	Calendar Date
Site Preparation & Mobilization	1	Dec-25	3	Feb-26
Grading	2	Jan-26	13	Dec-26
Reservoir Excavation	3	Feb-26	13	Dec-26
Shaft Drilling (Ventilation and Process Connections)	10	Sep-26	35	Oct-28
Access Shaft Excavation	11	Oct-26	23	Oct-27
Topside Equipment Installation	15	Feb-27	45	Aug-29
Transmission Line Construction	24	Nov-27	39	Feb-29
Cavern Construction (and Cavern Rock Crushing and Hauling)	24	Nov-27	47	Oct-29
Topside Equipment Commissioning	40	Mar-29	52	Mar-30
Subsurface Commissioning	47	Oct-29	52	Mar-30
Full Plant Commissioning	52	Mar-30	55	Jun-30
Startup	55	Jun-30	60	Oct-30
Construction Demobilization	59	Sep-30	60	Oct-30
Commercial Operation	60	Oct-30	61	Nov-30

During construction, there will be an average and peak workforce of approximately 273 and 749 workers, respectively, including construction craft workers and supervisory, support, and construction management personnel onsite if 100 percent of the waste rock is hauled offsite. The construction average and peak workforce will decrease slightly to 269 and 731, respectively, if all the excavated rock is re-used onsite in the form of an architectural berm.

Work schedules are anticipated to be:

- Surface work: 8 hours/day, 5 days/week
- Grading, excavation, and shaft drilling: 12 hours/day, 10 days on, 4 days off
- Cavern mobilization and site preparation: 10 hours/day, 5 days/week

⁶ Ex. 2000, Final Staff Assessment, Table 3-3, p. 3-35.

- Cavern Construction: 24 hours/day, 7 days/week

Construction laydown and parking will be located on property to the west and north of the Willow Rock site. The peak construction site workforce level is expected to last from month 25 through month 46 of the construction period, with the peak being months 26 and 27. **Table 2-2⁷** provides an estimate of the average and peak construction traffic during the 60-month construction/commissioning period for Willow Rock based on the scenario assuming 100 percent of excavated rock is hauled offsite.

TABLE 2-2 Estimated Worst-Case Average And Peak Construction Traffic		
Vehicle Type	Average Daily Trips	Peak Daily Trips
Construction Workers (one way, no carpooling assumed)	273	749
Deliveries	45	60
Total	318	809

A temporary portable rock crushing facility will be located onsite for up to 10 hours per day, seven days per week for 22 months beginning approximately in month 25. The rock crushing facility will be capable of processing up to 350 tons per hour and is expected to consist of a primary jaw crusher, a secondary cone crusher, screens, three conveyors, and two stackers. The facility will use a combination of water sprays and a baghouse to control fugitive dust and fine particulate matter emissions. The facility will be capable of operating from a locally provided power feed or using two 779-horsepower diesel-fired engine generators meeting U.S. EPA Tier 4 emission standards.

A temporary portable concrete batch plant is also expected to be located onsite to support construction of the shafts and, if necessary, initial cavern construction. The concrete batch plant is expected to operate onsite for approximately 12 to 15 months. Construction is expected to require up to 80 cubic yards per day of finished cement. The facility will be capable of operating from a locally provided power feed or using one 500-horsepower diesel-fired engine generator meeting U.S. EPA Tier 4 emission standards.

The entire facility including the rock crushing and concrete batch plant will be certified under the California Air Resources Board Portable Equipment Registration Program.

ii. Facility Closure and Decommissioning

The Willow Rock project is intended to be operated for approximately 50 years. The future closure of the facility could be temporary or permanent.

For a temporary closure where there is no release of hazardous materials, the applicant will maintain security of the Willow Rock site and will notify the CEC and other responsible agencies as required by law. If the temporary closure includes damage to the Willow Rock

⁷ Ex. 2000, FSA, Table 3-4, p. 3-36.

facilities, and if there is a release or threatened release of regulated substances or other hazardous materials into the environment, procedures will be followed as set forth in an Emergency Management Plan in accordance with a Hazardous Materials Plan. Procedures will include methods to control releases, notification of applicable authorities and the public, emergency response, and training for facility personnel in responding to and controlling releases of hazardous materials. Once the immediate problem is solved and the regulated substance/hazardous material release is contained and cleaned up, temporary closure will proceed as described above for a closure where there is no release of hazardous materials.

The details of decommissioning for a permanent closure are not described in the record. Instead, Staff proposes Condition of Certification **COM-16** Facility Closure Planning which will require the Applicant to submit a decommissioning plan to the CEC for approval prior to decommissioning to include:

- Conformance of the proposed decommissioning activities to all applicable LORS and local/regional plans.
- Comprehensive scope of work, including but not limited to:
 1. Dismantling and demolition;
 2. Recycling and site clean-up;
 3. Impact mitigation and monitoring;
 4. Site remediation and/or restoration;
 5. Exterior maintenance, including paint, landscaping and fencing;
 6. Site security and lighting; and
 7. Any contingencies.
- Identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than significant level. Potential impacts to be considered shall include, but not limited to:
 1. Traffic;
 2. Noise and vibration;
 3. Soil erosion;
 4. Air quality degradation;
 5. Soil waste;
 6. Hazardous materials;
 7. Waste water discharges; and
 8. Contaminated soil.

E. Project Objectives

The objectives for the Willow Rock Energy Storage Center include:

- Provide 500 MW of quick-starting, flexible, controllable generation with the ability to ramp up and down through a wide range of electrical output to facilitate the integration of renewable energy into the electrical grid in satisfaction of California's Renewables Portfolio Standard (RPS) and climate objectives.
- Interconnect the project to the California Independent System Operator-controlled SCE Whirlwind Substation, a major substation in or near the Tehachapi Renewable Wind Resource Area, to facilitate the integration of onshore and offshore renewable energy development.
- Implement a proven sustainable energy storage technology that provides improved technological diversity, non-combustible energy storage, minimal residual hazardous waste at asset retirement, a long-term commercial lifespan of 30 years or greater, and non-degrading energy storage.
- Use A-CAES technology to provide dispatchable long-duration storage and energy delivery for a minimum of 8 hours to achieve the following:
 - fossil fuel and greenhouse gas emissions-free operation,
 - flexible capacity with minimal response time,
 - long-duration storage to avoid curtailment through energy storage and to facilitate the further integration of renewable resources,
 - peaking energy for local contingencies,
 - voltage support and primary frequency response, including synchronous power output to support grid resiliency without the need for fossil fuel,
 - superior transient response attributes, including synchronous power output; and superior round-trip thermodynamic efficiency.
- Locate the facility on a site with adequate geologic characteristics for the underground facilities for compressed air storage, including suitable overburden characteristics (limited thickness, constructable soil type); deep subsurface geological formation (2,000 to 2,500 feet below ground surface) of sufficient quality and definition at the required depth for construction of the excavated storage cavern; ultra-low hydraulic conductivity and permeability in deep subsurface geological formation to retain water and air under pressure within the excavated storage cavern; and competent geological structural integrity to sustain an excavated storage cavern at depth intact indefinitely, allowing for repeated compressed air injection and discharge cycles over the life of the project without eroding or collapsing.
- Site the project near adequate water supply for construction.
- Locate the project on a site that is available to provide adequate site control through long-term lease or purchase.
- Site the project on land with acceptable constructability and with adequate access and size for construction of aboveground facilities—at least approximately 80 acres.
- Minimize additional supporting infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity.

- Create jobs in Kern County and the state of California through both construction and operation of the facility.
- Be a good corporate citizen and respected member of the community through the lifecycle of the project.⁸

F. Approach to Cumulative Impact Analysis

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.⁹

Under CEQA, there are two commonly used methodologies for establishing the cumulative impact scenario—the “list approach” and the “projections approach.” The list approach uses a “list of past, present, and probable future projects producing related or cumulative impacts” (Cal. Code Regs., tit. 14, § 15130(b)(1)(A)). The projections approach uses a “summary of projections contained in an adopted local, regional or statewide plan, or related planning document, that describes or evaluates conditions contributing to the cumulative effect” (Cal. Code Regs., tit. 14, § 15130(b)(1)(B)).

The FSA for Willow Rock utilizes the list approach for describing the context and analyzing the potential cumulative effects related to the proposed Willow Rock project. The record contains evaluations of cumulative impacts within the analysis of each resource area. The map and list of past, present, and probable future projects considered in the cumulative impact analysis in the FSA are included in **Attachment E** Master Cumulative Projects Map and List. Staff’s conclusion that there will be less than significant impacts to cumulative effects of the Willow Rock Energy Storage Center together with other past, current, and probable future projects considered in the analysis was undisputed.

Each section of this Decision defines its own geographic scope for cumulative impact analysis based upon the potential area within which impacts from the Willow Rock project could combine with those of other projects.

G. Agency and Public Comment

Following the posting of the Final Staff Assessment, numerous public comments were received regarding the Willow Rock Energy Storage Center as a whole, including three written comments and oral comments from eight individuals who spoke at the Evidentiary Hearing. The public comments were from individuals representing local government, business development, and community organizations. All were in support of project, citing: the jobs and

⁸ Ex. 1233, pp. 7-8.

⁹ Cal. Code Regs., tit. 14, § 15130.

economic benefits; the renewable and reliable energy; the community outreach and transparency of the project owner; and providing long duration energy storage in an environmentally responsible way.

At the Evidentiary Hearing, the Director of the Kern County Planning and Natural Resources Department stated she had the authority to report that the Board of Supervisors supported the Willow Rock Energy Storage Center based on the inclusion of conditions in the FSA that Kern County requested to be included as Conditions of Certification addressing a number of construction and operational aspects of the project. The Committee has considered all comments and specific conditions requested by Kern County as incorporated in the FSA,¹⁰ and concurs with Staff that each of them are reasonable to avoid or mitigate significant impacts to the environment, public health, and safety, or to provide local and regional public benefits. Thus, as discussed in this and other sections of this Decision, the Committee has accepted those proposed conditions and included them in the Conditions of Certification in **Appendix A**.

Additionally, the California Department of Fish and Wildlife (CDFW), Department of Water Resources Division of Safety of Dams (DWR-DSOD) provided oral and written comments during the Evidentiary Phase, supporting the overall objectives of the project while ensuring that satisfactory mitigation within their areas of jurisdiction if not for the CEC's in-lieu authority are made Conditions of Certification to ensure that the Willow Rock Energy Storage Center is consistent with their laws, ordinances, regulations, and standards (LORS) and mitigate significant impacts. Details of these agency comments are addressed in subsequent sections of this Decision, including but not limited to **Facility Design** (Section 5(A)), **Biological Resources** (Section 7(A)), **Soil and Water Resources** (Section 7(B)), and **Land Use, Agriculture, and Forestry** (Section 8(A)). Those sections describe the Conditions of Certification that incorporate the agency expertise and mitigation recommended by those representatives.

The names of each of the agency and public commenters, and citations to the record for their comments, are provided in **Appendix D** (Agency and Public Comment) to this Decision.

H. Findings of Fact

Based on the evidence, the CEC makes the following findings:

1. Gem A-CAES, LLC will own and operate the Willow Rock Energy Storage Center on private land in the unincorporated area north of the City of Rosamond in the County of Kern, California.

¹⁰ See TN 259786, TN 262870, and TN 263490.

2. Construction of the Willow Rock Energy Storage Center facility, from site preparation and grading to commercial operation, is expected to take place over an approximate 60-month period starting in December 2025 and lasting through November 2030.
3. The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology.
4. The Willow Rock Energy Storage Center will store compressed air in a purpose-built underground storage cavern that is filled with water through a hydraulic conduit from a water storage compensation reservoir at the ground surface level. To generate electricity, the compressed air will be discharged from the cavern and reheated using the heat stored by the facility's thermal management system. The reheated compressed air will then drive air-expansion turbine generators, which will convert the stored potential energy into electricity to be dispatched to the grid.
5. The Willow Rock Energy Storage Center is expected to use primarily curtailed electricity to charge the cavern for about 13.5 hours for the facility's full rated capacity, and will discharge electricity for about 8 hours with an average round trip efficiency (RTE) of 55 to 60 percent.
6. Energy stored at the Willow Rock Energy Storage Center will be delivered to the Southern California Edison (SCE) Whirlwind Substation via a new approximately 19-mile long 230-kilovolt (kV) generation-tie (gen-tie) line, along a preferred route with eight well-described options for certain segments depending on site access and feasibility.
7. The purpose-built cavern requires that about 1.3 million cubic yards of crushed rock (accounting for swell and void space) will be extracted during construction. The proposed project will include options for managing the extracted rock that may be implemented alone or in any combination, including (a) permanent on-site storage in the form of an architectural berm not to exceed approximately 10 feet in height around portions of the site; (b) off-taker transport for commercial use; and (c) off-taker transport for permanent off-site storage. The footprint and size of the potential architectural berm would depend on the quantity of rock needed to be stored on-site.
8. The Willow Rock Energy Storage Center will require approximately 1,400 acre-feet of water during the construction period, which includes 868 acre-feet of water to initially fill the 600-acre-foot hydrostatically compensating reservoir. Due to the efficiencies in the thermal management system, the facility is expected to have an annualized surplus of 3.6 acre-feet per year (on average) of non-potable recharge quality water to provide surface reservoir water make-up. Antelope Valley East Kern (AVEK) will supply the quantity and quality of water needed for the project.

9. The Willow Rock Energy Storage Center will reuse most of the project wastewater in the system after onsite treatment to reintroduce the water back into the process, with provisions to haul up to 250,000 per year of excess project wastewater offsite to an approved treatment facility. Septic waste from the administration and control room will be managed in an underground septic storage tank and pumped out periodically to an approved disposal facility.
10. The project will include three diesel-fired emergency backup power supply engines to maintain critical loads in the event of a loss of power.
11. The Willow Rock Energy Storage Center fire protection system will include an electric fire pump, a small jockey pump to keep the system under pressure, and a fire protection water network system consisting of hydrants or standpipes and portable fire extinguishers. A diesel-fired approximately 345 kW (460 horsepower) fire pump will be provided for emergency backup.
12. Firefighting water for Willow Rock Energy Storage Center will be stored in the service/fire water storage tank with a total capacity of 350,000 gallons, containing an internal service water pump suction standpipe so that the required water volume for a fire event is always available to the fire water pumps.
13. Construction laydown and parking for the Willow Rock Energy Storage Center will be located on property to the west and north of the site.
14. The Willow Rock Energy Storage Center construction workforce will average 273 workers over the 60-month construction period and reach a peak of 749 workers in the 26th and 27th month of construction (approximately January and February of 2028).
15. The Willow Rock Energy Storage Center and its objectives are adequately described by the relevant documents contained in the evidentiary record, including the optional architectural berm and the primary and alternative routes for the gen-tie line.

I. Conclusions of Law

The Willow Rock Energy Storage Center is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act.

LEGEND

- WREC Site
- Other Project Parcel
- Project Boundary
- PLSS Township and Range
- PLSS Section

Section 3

Section 4

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3 Project Alternatives

A. Introduction

The California Environmental Quality Act (CEQA) Guidelines and the California Energy Commission's (CEC's) regulations require an evaluation of the comparative merits of a reasonable range of alternatives to the Willow Rock Energy Storage Center that would achieve most of the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.¹

Evidence on the topic of Project Alternatives is contained in Exhibits 1000, 1001, 1002, 1003, 1004, 1005, 1006, 1025, 1032, 1033, 1040, 1041, 1053, 1090, 1135, 1155, 1233, 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.²

B. Setting and Project Description

The Willow Rock Energy Storage Center will be a long-duration energy storage facility using Hydrostor's advanced compressed air energy storage (A-CAES) technology, located in Kern County. Willow Rock will provide 500 MW of energy with an 8-hour discharge duration at full rated capacity. Willow Rock will not require the combustion of fossil fuel and will not produce combustion-related air emissions during normal operation. Energy stored at Willow Rock will be delivered to the Southern California Edison (SCE) Whirlwind Substation via a new approximately 19-mile 230-kV generation-tie (gen-tie) line. The Willow Rock facility will be capable of operating on a 24-hour basis, 365 days a year, with an approximately 50-year lifespan.³

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

C. Project Objectives

The Applicant proposes to combine dispatchable, operationally flexible, and efficient energy generation with state-of-the-art, advanced compressed air energy storage (A-CAES) technology to facilitate the integration of variable renewable energy resources on the transmission grid and to meet the needs of California and the region for reliability services.

¹ Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e).

² 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

³ Ex. 2000, pp. 1-2 and 3-2 – 3-3.

The applicant's project objectives are as follows:

- Provide 500 megawatts (MW) of quick-starting, flexible, controllable generation with the ability to ramp up and down through a wide range of electrical output to facilitate the integration of renewable energy into the electrical grid in satisfaction of California's Renewables Portfolio Standard (RPS) program and climate objectives, by displacing older and less efficient generation.
- Interconnect the project to the transmission grid controlled by the California Independent System Operator (California ISO) at the SCE Whirlwind Substation, a major substation in or near the Tehachapi Renewable Wind Resource Area, to facilitate the integration of onshore and offshore renewable energy development.
- Implement a proven sustainable energy storage technology that provides improved technological diversity, non-combustible energy storage, minimal residual hazardous waste at asset retirement, a long-term commercial lifespan of 30 years or greater, and non-degrading energy storage.
- Use A-CAES technology to provide dispatchable long-duration storage and energy delivery for a minimum of 8 hours; fossil fuel and greenhouse gas emissions-free operation; flexible capacity with minimal response time; provide long-duration storage to avoid curtailment through energy storage and to facilitate the further integration of renewable resources; peaking energy for local contingencies; voltage support and primary frequency response, including synchronous power output to support grid resiliency without the need for fossil fuel; superior transient response attributes, including synchronous power output; and superior round-trip thermodynamic efficiency.
- Locate the facility on a site with adequate geologic characteristics for the underground facilities for compressed air storage, including suitable overburden characteristics (limited thickness, constructable soil type); deep subsurface geological formation (2,000 to 2,500 feet below ground surface) of sufficient quality and definition at the required depth for construction of the excavated storage cavern; low hydraulic conductivity and permeability in deep subsurface geological formation to retain water and air under pressure within the excavated storage cavern; and competent geological structural integrity to sustain an excavated storage cavern at depth intact indefinitely, allowing for repeated compressed air injection and discharge cycles over the life of the project without eroding or collapsing.
- Site the project on land with acceptable constructability and with adequate access and size for construction of aboveground facilities, at least approximately 80 acres.
- Site the project near adequate water supply for construction.
- Locate the project on a site that is available to provide adequate site control, through long-term lease or purchase.
- Minimize additional supporting infrastructure needs and reduce potential environmental impacts by locating the facility near existing and planned infrastructure, including access to an existing substation with available transmission capacity.
- Create jobs in Kern County and the State of California through both construction and operation of the facility.

- Be a good corporate citizen and respected member of the community through the lifecycle of the project.⁴

D. Environmental Analysis of Alternatives

CEQA requires that we consider a reasonable range of alternatives that could feasibly accomplish most of the basic project objectives while avoiding or substantially lessening one or more of the significant effects. The alternative, or range of alternatives including the “No Project” alternative, is governed by the “rule of reason,” and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. Rather, the analysis is necessarily limited to alternatives that the “lead agency determines could feasibly attain most of the basic objectives of the project.”⁵

Here, Staff considered a reasonable range of alternatives. Alternative technologies were initially considered and not evaluated further, primarily due to potential feasibility issues or an inability to attain the basic project objectives, such as: fuel cells, long-duration battery energy storage technologies, 100 percent hydrogen-fueled power plant, traditional compressed air energy storage, and pumped thermal energy storage. Several alternative sites were initially considered and rejected, primarily due to unfavorable geologic conditions and site control and site access issues.⁶

For further analysis and comparison to the project, Staff selected a No Project/No Build Alternative (Alternative 1), and Reduced Capacity Alternative (Alternative 2).⁷

i. Alternatives Considered and Not Evaluated Further

a. Fuel Cell Technology Alternative

Staff considered and rejected two fuel cell technologies: solid oxide fuel cells (SOFCs) and polymer electrolyte membrane (PEM) fuel cells (also called proton exchange membrane fuel cells). Fuel cells convert chemical energy into electrical energy.⁸ The Final Staff Assessment (FSA) states that SOFCs have slow startup times that do not meet the proposed project’s objective because the project could be dispatched with little notice.⁹

Both fuel cell technologies are not proven at the scale of the proposed project. SOFCs are used commercially to supplement base load power demands of data centers; however, the facilities that use them have relied on the electric grid to support other loads while retaining

⁴ Ex. 1233, pp. 7-8.

⁵ Cal. Code Regs., tit. 14, § 15126.6.

⁶ Ex. 2000, FSA, p. 8-1.

⁷ Ex. 2000, FSA, p. 8-1.

⁸ Ex. 2000, FSA, p. 8-11.

⁹ Ex. 2000, FSA, p. 8-12.

traditional uninterruptible power supply and generators for emergency power. PEM fuel cells are typically used for low-power applications that require intermittent power in the capacity ranges of 10 and 125 KW, although capacity has increased to up to 1 MW.¹⁰

Moreover, both fuel cell technologies suffer feasibility constraints due to reliance on hydrogen (H₂) for fuel.¹¹ To meet the proposed project's objective of "fossil fuel and greenhouse gas emissions-free operation," the facility would require approximately 260,000 kilograms (kg) of H₂ for 500 MW of fuel cells to operate for 8 hours (not including redundant fuel cells).¹² Pipeline infrastructure for H₂ is currently limited, so H₂ would need to be transported or generated and then stored onsite.¹³ The project would require approximately 237 trailers of compressed H₂ or 60 trailers of liquid H₂ for 500 MW of fuel cells for up to 8 hours of operation.¹⁴

Production of H₂ would require substantially more space. An H₂ production facility would replace the cavern and water reservoir associated with the proposed project and would cover an estimated 98 acres to meet the demands of 500 MW. In comparison, Willow Rock as proposed allots 61 acres for the cavern and water reservoir.¹⁵

Storage of H₂ also suffers feasibility constraints. Storage of liquified H₂ loses 1 percent of the stored H₂ per day due to release of boil-off gas. Safely managing these systems would require special expertise and equipment, which would add to the cost and complexity of the proposed project. Fuel storage equipment must comply with the standards specified by the National Fire Protection Association along with the local codes to protect against hazardous material release, fire, and explosions during natural disasters and accidents. Additionally, permits for the storage of hazardous materials would be needed pursuant to the local codes. The presence of such storage systems would also likely raise public safety concerns (for example, due to the flammability of H₂) and introduce new compliance and potential safety impacts that would not occur under the proposed project.¹⁶

Thus, fuel cells for large-scale peak power demand are not fully proven and have various feasibility constraints, including storage space, significant losses due to boil-off gas, the need for specialized equipment, concerns about public safety, and undetermined reliability. Securing fuel for the cells and storing it is a challenge requiring specialized expertise and increased

¹⁰ Ex. 2000, FSA, pp. 8-12 – 8-13.

¹¹ Ex. 2000, FSA, p. 8-15.

¹² Ex. 2000, FSA, p. 8-13.

¹³ Ex. 2000, FSA, pp. 8-12 – 8-13.

¹⁴ Ex. 2000, FSA, pp. 8-13 – 8-14.

¹⁵ Ex. 2000, FSA, pp. 8-13 [requiring 260,000 kg of H₂], 8-21 [production of 200 tons of H₂ requires 98 acres].

¹⁶ Ex. 2000, p. 8-14.

costs for installing and maintaining systems. Because of the limitations described above, fuel cell technology is currently not a feasible alternative to the project's proposed technology.¹⁷

b. Long-duration Battery Energy Storage Technologies

Long-duration energy storage (LDES) systems are storage systems capable of delivering electricity for 8 or more hours in duration. LDES technologies are categorized based on the type of energy they store, which is ultimately converted to electrical energy, such as electrochemical storage, mechanical storage, or thermal storage. Staff has considered non-lithium-ion electrochemical (battery) LDES technologies as alternatives to the proposed project. Among this type of LDES technology, staff considered aqueous redox flow batteries (RFBs) and metal-air flow batteries. Staff also considered a lithium-ion (Li-ion) battery energy storage system (BESS).¹⁸

While non-lithium BESS technologies are progressing, scalability, cost, and storage duration remain key barriers. Existing systems do not yet provide the multi-day storage capacity or efficiency of A-CAES. As a result, while non-lithium LDES solutions are advancing, they are not yet a feasible alternative to the Willow Rock A-CAES facility. Continued innovation, cost reductions, and technological breakthroughs will determine their future viability for large-scale deployment.¹⁹

The feasibility of a Li-ion BESS alternative at the scale of Willow Rock is technically questionable. It would be among the first long-duration applications of this size. A BESS traditionally has a continuous operational discharge duration of 4 hours; operating for 8 hours continuously would double the discharge duration. But BESS systems are not recommended to operate from 100 percent charge to 0 percent discharge, so additional capacity would be needed to ensure the alternative reliably provides 8 hours of continuous operation. Changing the project's energy storage technology would require a wholly new set of project design and technical studies and would cause a substantial loss of financial investments.²⁰

The feasibility of a BESS alternative at the project site is questionable. The Applicant has obtained site control of the 112-acre site proposed for the Willow Rock project with an optional purchase and sale agreement with the landowner. The Applicant develops energy storage projects solely through the design and installation of its A-CAES technology, not batteries. A review of these batteries would be needed to assess the grid's ability to charge batteries for long hours and discharge the power back to the grid at different time intervals. Charging and discharging could create line congestion, which should be considered. Also, it would be necessary to maintain a 90 percent power factor at the point of interconnection to ensure an efficient power transfer and reduce energy losses. So, the potential feasibility of a BESS

¹⁷ Ex. 2000, FSA, p. 8-14.

¹⁸ Ex. 2000, FSA, p. 8-15.

¹⁹ Ex. 2000, FSA, p. 8-18.

²⁰ Ex. 2000, FSA, p. 8-19.

alternative on the project site is questionable and depends largely on a hypothetical scenario where a different developer has a set of project objectives and a plan to install a long-duration BESS on a portion of the Willow Rock property. A BESS developer would have its list of siting criteria and a process to evaluate potential project sites for a BESS project, and it is not feasible for Staff to independently determine the best location for such a site.²¹

A long-duration Li-ion BESS alternative would require a full site assessment to determine the total space requirements, which would include a construction and equipment laydown area, batteries, inverters, parking, and areas for a switchyard and equipment. The total space requirements for a long-duration BESS cannot be accurately estimated; although some BESS proposals are being reviewed by CEC staff, site arrangements vary considerably, including the spaces between battery storage containers. Therefore, it is unknown how this alternative might be configured relative to the planned project area at the proposed site. Without an approximate project area, staff's comparative environmental impact analysis for a theoretical Li-ion BESS alternative would likely involve guesswork without meaningful conclusions.²²

The Li-ion BESS alternative would not meet basic project objectives. Willow Rock is proposed by Hydrostor using its A-CAES technology and thus implementing technological diversity, which are part of its basic project objectives.²³ Hydrostor develops energy storage projects solely through the design and installation of its A-CAES technology, not batteries.²⁴ So, a battery alternative would not use A-CAES technology, implement technological diversity, or potentially be feasible for the Applicant.

Moreover, the project objectives specify operational characteristics and services that are needed to support the transmission grid and help achieve the state's renewable energy goals. Included is an objective to provide "voltage support and primary frequency response...." Batteries alone cannot provide volts-ampere reactive (VAR) support to the grid. While modern inverters can contribute VAR support to the system, they may not be able to withstand significant faults, potentially leading to delayed current supply to the grid and a subsequent voltage collapse. Under this alternative, the BESS developer would need to request that Southern California Edison (SCE) conduct a comprehensive VAR study to evaluate transient and post-transient power flow issues. It would also be necessary to determine if the system has additional synchronized generators adjacent to the project interconnection point that could provide VAR to the system if a fault occurred. Alternatively, capacitor banks could be installed at the project interconnection substation, which would also require an assessment from SCE.

²¹ Ex. 2000, FSA, p. 8-20.

²² Ex. 2000, FSA, pp. 8-19 – 8-20.

²³ Ex. 2000, FSA, p. 8-3.

²⁴ Ex. 2000, FSA, p. 8-20.

Either option would likely require a wait in the queue before SCE could perform the study. These are also considered potential feasibility issues for a Li-ion BESS alternative.²⁵

BESS systems were initially considered but are not evaluated further as alternatives to Willow Rock based on these feasibility issues and the inability of BESS to meet the project objectives.²⁶

c. 100 Percent Hydrogen-fueled Power Plant

This technology uses gas turbines and heat exchangers to burn 100 percent hydrogen gas (H₂) as a fuel source to generate power. One hundred percent H₂ capable turbines require specialized equipment that is only recently becoming commercially available and is not yet a proven technology for large-scale applications. In addition, H₂ is abundant but not a readily available resource and would need to either be produced onsite in a separate facility or provided from an offsite source.²⁷

Production of H₂ would require substantially more space. An H₂ production facility would replace the cavern and water reservoir associated with the proposed project and would cover an estimated 98 acres to meet the demands of 500 MW. In comparison, Willow Rock as proposed allots 61 acres for the cavern and water reservoir.²⁸

Storage of H₂ also suffers feasibility constraints. As discussed above, storage of liquified H₂ loses 1 percent of the stored H₂ per day due to release of boil-off gas. Safely managing these systems would require special expertise and equipment, which would add to the cost and complexity of the proposed project. Fuel storage equipment must comply with the standards specified by the National Fire Protection Association along with the local codes to protect against hazardous material release, fire, and explosions during natural disasters and accidents. Additionally, permits for the storage of hazardous materials would be needed pursuant to the local codes. The presence of such storage systems would also likely raise public safety concerns, due to the flammability of H₂ for example, and introduce new compliance and potential safety impacts that would not occur under the proposed project.²⁹

Because of the limitations described above, 100 Percent Hydrogen-fueled Power Plant technology is currently not a feasible alternative to the project's proposed technology.³⁰

²⁵ Ex. 2000, FSA, p. 8-20.

²⁶ Ex. 2000, FSA, p. 8-20.

²⁷ Ex. 2000, FSA, p. 8-20.

²⁸ Ex. 2000, FSA, pp. 8-13 [requiring 260,000 kg of H₂], 8-21 [production of 200 tons of H₂ requires 98 acres].

²⁹ Ex. 2000, FSA, p. 8-14.

³⁰ Ex. 2000, FSA, p. 8-14.

d. Traditional Compressed Air Energy Storage (CAES)

CAES technology is similar to A-CAES technology in that a compressor is used to convert electrical energy into high-pressure compressed air that is stored in this increased energy state. When electricity is required, compressed air is expanded through a turbine generator, converting the stored energy back into electricity. However, heat must be added back into the compressed air before expansion because the expansion process results in significant cooling of the expanding air stream. The turbine would not operate at unacceptably low temperatures. Traditional CAES facilities lose heat generated during compression and require additional energy like natural gas or grid electricity to heat the air during expansion. A-CAES offers a more efficient system that captures and stores this heat, resulting in a reduced reliance on fossil fuels, or additional power demand such as battery energy storage, during electricity generation. Thus, A-CAES is considered a more advanced version of CAES with improved efficiency by utilizing the heat of compression. A-CAES is preferred over CAES for its ability to provide a more sustainable solution for large-scale energy storage.³¹

e. Pumped Thermal Energy Storage

Pumped thermal energy storage (PTES) technology uses a system of hot and cold media to store energy converted from electricity in the form of heat inside a thermal medium. PTES technology is nearing readiness for large-scale deployment but is not yet mature enough to be considered as a viable alternative to Willow Rock.³²

f. Alternative Sites

Key siting criteria for the proposed Willow Rock project require that particular geologic characteristics be present to support the underground facilities for compressed air storage. The geology underlying the proposed site has been initially evaluated to consist of hard rock at a depth that is compatible with the design of the A-CAES cavern storage system. Thus, an alternative site can be rejected as infeasible if the deep, hard rock geology required for the cavern storage system is deficient. Other siting criteria that are also consistent with several project objectives include:

- Locating the project near existing and planned infrastructure with access to an existing substation with available transmission capacity.
- Identifying sites where site control is possible through a long-term lease or property purchase.
- Siting the project with adequate access and on a site sufficiently sized for construction of aboveground facilities (approximately 88.6 acres).

³¹ Ex. 2000, FSA, pp. 8-22 – 8-23.

³² Ex. 2000, FSA, pp. 8-23 – 8-25.

- Siting near an adequate water supply for use during construction.³³

The applicant studied but rejected seven alternative sites that would not meet several of the project objectives:³⁴

- The Rosamond Hills site was rejected because underlying rock formations that are not as strong, durable, and impermeable as other sites considered.³⁵
- The Little Buttes site was rejected because its terrain is unsuited for project construction without mass site grading. Moreover, site control is an issue for the Little Buttes site given that it is composed of 20 parcels and 18 separate landowners. By comparison, the proposed Willow Rock site covers approximately 88.6 acres on a 112-acre parcel, and a purchase option agreement has been executed with the landowner.³⁶
- U.S. Bureau of Land Management (BLM) site was rejected because of its complex steep terrain and because the north side of the BLM property consists of 29 privately-owned parcels and 18 separate landowners, and there is no public access point to the BLM property.³⁷
- Pacific Steel Group site was rejected because Pacific Steel Group plans to develop a hybrid micro steel mill on the property, so the property is not available.³⁸
- The "G" site was rejected because applicant was unable to gain site control. Water access at the site was uncertain. Moreover, negotiations with Union Pacific to construct a crossing over the railroad corridor would cause challenges, including potential project schedule delays.³⁹
- The Odel site was rejected because construction work and negotiations would be required to allow site access, and water access for construction would rely on groundwater wells.⁴⁰
- The Villa Haines site was rejected because topography on the north half of the property would cause grading and constructability issues and no surrounding land is available for construction laydown, parking, or other project support uses.⁴¹

CEQA provides that "in some cases there may be no feasible alternative locations for a geothermal plant or mining project which must be in close proximity to natural resources at a given location."⁴² Here, some of the alternative sites were rejected because the geologic formations were ultimately determined to be undesirable for subsurface A-CAES cavern

³³ Ex. 2000, FSA, p. 8-25.

³⁴ Ex. 2000, FSA, p. 8-26.

³⁵ Ex. 2000, FSA, pp. 8-25 – 8-26.

³⁶ Ex. 2000, FSA, p. 8-26.

³⁷ Ex. 2000, FSA, p. 8-26.

³⁸ Ex. 2000, FSA, p. 8-27.

³⁹ Ex. 2000, FSA, p. 8-27.

⁴⁰ Ex. 2000, FSA, p. 8-27.

⁴¹ Ex. 2000, FSA, p. 8-28.

⁴² Cal. Code Regs., tit. 14, § 15126.6(f)(2)(B).

construction and operation, including the original project site on Sweetser Road. Four sites were rejected primarily due to an inability to gain site control, site access challenges, and an uncertain water supply during construction. Staff is unaware of any other potentially feasible alternative site. Thus, no alternative site is required for analysis and comparison to the Willow Rock project as proposed.⁴³

ii. No Project Alternative

Willow Rock will cover approximately 88.6 acres on the western portion of an undeveloped, 112-acre property that is under private ownership. The applicant has obtained site control of the whole property through an optional purchase and sale agreement with the landowner. The site has no permanent structures or buildings.⁴⁴

Under the No Project Alternative, the CEC would not issue a license to the applicant to construct and operate Willow Rock. Should Willow Rock not move forward, a new project could eventually be approved at the site. However, the design, potential impacts, and time frame concerning a future project would be subjects of speculation. The No Project Alternative is characterized by the continuation of existing conditions at the site. No other use is reasonably foreseeable; therefore, it is assumed that existing conditions would generally persist at the site for an unknown period.⁴⁵

If Willow Rock were not constructed, the applicant's basic project objectives would not be attained,⁴⁶ and the environmental, reliability, and other public benefits would not be realized, namely:

- Willow Rock will contribute to the integration of variable renewable resources in the Tehachapi Renewable Resource Area. Through energy storage, Willow Rock will help avoid the curtailment of renewable resources and help meet California's and the region's electric reliability needs.
- Willow Rock will provide rapid-response delivery of energy and synchronous condenser voltage support services that provide reliability support and stability to the grid and integrating intermittent renewable energy sources to the electrical grid.
- Willow Rock technology will provide peaking energy for local contingencies.
- Willow Rock will be located on compatibly zoned parcels in a sparsely populated area which will minimize land use impacts.⁴⁷

The No Project Alternative is the environmentally superior alternative because it would avoid all impacts of the proposed Willow Rock project by not creating any physical changes to the

⁴³ Ex. 2000, FSA, p. 8-28.

⁴⁴ Ex. 2000, FSA, p. 8-29.

⁴⁵ Ex. 2000, FSA, p. 8-29.

⁴⁶ Ex. 2000, FSA, pp. 8-3 and 8-29.

⁴⁷ Ex. 2000, FSA, pp. 7-1 – 7-3.

environment at the project site.⁴⁸ The Willow Rock project has potentially significant impacts, but all of them will be avoided or reduced to less than significant levels with the implementation of the Conditions of Certification, except its impacts to Visual Resources which will remain unmitigated. As to Visual Resources, the project could substantially degrade the existing visual character or quality of public views of the site and its surroundings. This visual impact remains significant even after implementation of **Visual Resource** Conditions of Certification. The potential impacts of Willow Rock are discussed further in the following section regarding the Reduced Capacity Alternative. The No Project Alternative would avoid all significant impacts relating to construction and operation of the project.⁴⁹

iii. Reduced Capacity Alternative

a. Merits of the Reduced Capacity Alternative

Staff considered a Reduced Capacity Alternative to the project with half the proposed MW capacity of 520 MW. This alternative would consist of two 130-MW air expansion turbine generators instead of the four proposed in the AFC. As a result, the footprint of the power block would be reduced, potentially from 11 acres to approximately 5½ acres.⁵⁰

The reduction in the number of the turbines from four to two would decrease the overall air expansion capacity, which means a smaller cavern would be needed to store compressed air, and less water displacement would be required. As a result, the compressed air cavern volume could also be reduced, potentially halving it from the proposed 900,000 cubic yards. This would allow for a proportional reduction in reservoir capacity, and a decrease in reservoir acreage from approximately 21.5 acres to approximately 10.75 acres. Alternatively, the reservoir depth could be reduced by lowering the reservoir's embankment height. The reservoir embankment would still be under the Department of Water Resources Division of Safety of Dams (DWR-DSOD) jurisdiction.⁵¹

With the reduced cavern size, the quantity of excavated rock removed from the cavern would also be reduced. If the architectural berm were constructed with the waste rock, the length of the berm would be shortened, and its placement on the site could vary somewhat from its proposed location.⁵²

⁴⁸ Ex. 2000, FSA, p. 7-43.

⁴⁹ Ex. 2000, FSA, pp. 1-5 and 8-29.

⁵⁰ Ex. 2000, FSA, p. 8-31.

⁵¹ Ex. 2000, FSA, p. 8-31.

⁵² Ex. 2000, FSA, p. 8-31.

This alternative would require additional design work that would extend the pre-construction phase. The financial feasibility of this alternative is uncertain, as reduced revenue potential and added reconfiguration costs could impact economic viability.⁵³

Operationally, the Reduced Capacity Alternative introduces new technical complexities, particularly in maintaining stable system pressure and thermal management with a reduced cavern and reservoir size. The reliance on pumps to stabilize pressure could lead to higher operational costs and additional maintenance needs.⁵⁴

The overall feasibility of this alternative is uncertain due primarily to economic and operational challenges and the project schedule delay that would result from a facility redesign. While the alternative would still meet several project objectives, the reduction in capacity could limit its overall contribution to grid reliability and renewable energy integration.⁵⁵

While this alternative would still provide quick-starting, flexible, and controllable energy generation, it would only partially meet the project's primary objective by delivering only half of the intended capacity. However, it would still align with several other project goals, such as integrating renewable energy into the grid, utilizing a sustainable energy storage technology, and reducing some environmental impacts due to the smaller project footprint and cavern.⁵⁶

The Committee notes that some of the project objectives and non-energy benefits provided by the Willow Rock Energy Storage Center and discussed in **Socioeconomics, Environmental Justice, and Public Benefits** (Section 8(c)) would likely be reduced. Although not addressed in the alternatives analysis in the FSA, it stands to reason that the number of construction and operation jobs documented in the evidentiary record would be reduced.

This is an environmentally superior alternative to Willow Rock as proposed.⁵⁷ A summary comparison of potential impacts of this alternative versus the Willow Rock project as proposed is discussed in the following section, "Comparison of Potential Environmental Impacts of the Reduced Capacity Alternative to Willow Rock as Proposed."

b. Comparison of Potential Environmental Impacts of the Reduced Capacity Alternative to Willow Rock as Proposed

Under the Reduced Capacity Alternative, many of the impacts on resources evaluated by staff were determined to be **similar** to Willow Rock as proposed even with the project facility footprint, compressed air cavern volume, and capacity of the hydrostatic compensating reservoir reduced approximately in half. Construction water consumption would be reduced

⁵³ Ex. 2000, FSA, p. 8-35.

⁵⁴ Ex. 2000, FSA, p. 8-35.

⁵⁵ Ex. 2000, FSA, p. 8-35.

⁵⁶ Ex. 2000, FSA, pp. 8-32 – 8-33.

⁵⁷ Ex. 2000, FSA, p. 8-44.

from 280 AFY to 210 AFY. Total construction water demand would be reduced from 1,400 AF to 1,050 AF. This rate of reduced water use is not considered to be a substantial lessening of impacts on water supply.⁵⁸

The following discussion is focused on resource impacts that could be substantially lessened under this alternative. Conditions of Certification like those recommended for Willow Rock as proposed would reduce these impacts to less than significant.⁵⁹

The comparative analysis of air quality impacts showed that the maximum short-term and annual impacts during project operations would be **less** than Willow Rock as proposed due to a reduction in the number of emergency generators from three to one or two. Public health impacts from potential exposure to Valley Fever and construction emissions would be **less** than Willow Rock as proposed during project construction. Public health impacts from diesel particulate matter emissions during project operations would also be **less** than Willow Rock as proposed due to a reduction in the number of emergency generators. The total construction and operational emissions would be substantially lessened due to a smaller footprint and construction timeline. However, worst-case daily and annual air quality impacts would be **similar** to the Willow Rock as proposed during construction because worst-case air quality impacts depend on worst-case emissions.⁶⁰

The smaller project footprint, reduced cavern size, and shorter architectural berm would reduce direct and indirect impacts on biological resources, including impacts on native vegetation communities and sensitive plant and wildlife species. Removal of hundreds fewer western Joshua trees would likely occur under this alternative. Construction-related impacts on four special-status plant species could be reduced as would impacts on Crotch's bumble bee, burrowing owls, and burrowing mammals. Controlled detonation for cavern construction would still be required, although it would likely occur for shorter durations due to the reduced cavern size; the reduction in blasting would reduce potential noise and ground borne vibration impacts on nesting birds, insects, and burrowing animals in adjacent habitat. Overall, direct and indirect impacts on biological resources would be **less** than Willow Rock as proposed and could substantially lessen impacts on these resources.⁶¹

The Reduced Capacity Alternative would substantially lessen impacts on cultural and tribal cultural resources. It is always preferable to avoid cultural resources and leave them intact and undisturbed because they are non-renewable. Within the Willow Rock site, there are known historical resources that would be impacted and disturbed by the project. Even though avoidance is the preferred management approach for cultural and tribal cultural resources in the Willow Rock project area, the mitigation plan required under **CUL/TRI-3** acknowledges

⁵⁸ Ex. 2000, FSA, p. 8-43.

⁵⁹ Ex. 2000, FSA, p. 8-43.

⁶⁰ Ex. 2000, FSA, p. 8-43.

⁶¹ Ex. 2000, FSA, pp. 8-43 – 8-44.

that a prescriptive treatment including removal and curation may be necessary for unavoidable impacts. The smaller project footprint, depending on how it was configured on the site, could reduce impacts or avoid all together these known historical or cultural resources. Additionally, the project area is sensitive for buried cultural resources, and the Reduced Capacity Alternative would involve less excavation during construction and would lessen the potential to encounter buried cultural and tribal cultural resources, including human remains. Although impacts on cultural and tribal cultural resources would occur under this alternative, there would be fewer impacts and increased onsite preservation of these resources compared to the Willow Rock project as proposed. Overall, impacts on cultural and tribal cultural resources and undiscovered buried archaeological resources would be **less** than Willow Rock as proposed.⁶²

Construction activity would involve less excavation and use of less heavy equipment. Controlled detonations for cavern construction would be required, although it would occur for shorter durations due to the reduced cavern size. During construction, the intensity and duration of construction-related noise and vibration impacts affecting sensitive receptors, including wildlife, would be **less** than Willow Rock as proposed, and would substantially lessen noise and vibration impacts.⁶³

Compared to Willow Rock as proposed, the Reduced Capacity Alternative would substantially lessen direct and indirect impacts on biological resources and cultural and tribal cultural resources. With the reduced footprint and cavern, impacts relating to construction noise and vibration would be substantially lessened. The total construction and operational emissions would be substantially lessened due to a smaller footprint and construction timeline. Because of these impact reductions, the Reduced Capacity Alternative is considered environmentally superior to Willow Rock as proposed.⁶⁴

E. Agency and Public Comment

No comments were received on the **Project Alternatives** section.

F. Findings of Fact

Based upon the evidence, including that presented on each subject area described in other portions of this Decision, the CEC makes the following findings:

1. The evidence shows consideration of a reasonable range of alternatives to the Willow Rock Energy Storage Center, including a Reduced Capacity Alternative and a No Project Alternative.

⁶² Ex. 2000, FSA, p. 8-44.

⁶³ Ex. 2000, FSA, p. 8-44.

⁶⁴ Ex. 2000, FSA, p. 8-44.

2. The evidentiary record contains an adequate review of alternative technologies, sites, and the No Project and Reduced Capacity Alternative. The rationale for selecting alternatives to be discussed were described.
3. Alternative technologies were eliminated from further detailed consideration because they were not feasible or unable to attain the basic project objectives. These included fuel cells, long-duration battery energy storage technologies, 100 percent hydrogen-fueled power plant, traditional compressed air energy storage, and pumped thermal energy storage.
4. The battery storage alternatives were eliminated from further detailed consideration because they would not meet the basic objectives of Willow Rock and feasibility was uncertain.
5. Seven alternative site locations were eliminated from further consideration primarily due to unfavorable geologic conditions and site control and site access issues.
6. The No Project Alternative is the environmentally superior alternative and would avoid all potentially significant impacts of Willow Rock, including significant and unavoidable impacts to Visual Resources. But the No Project Alternative would not meet most of the basic objectives and would not provide electrical system benefits including support for the integration of renewable energy.
7. The Reduced Capacity Alternative is environmentally superior to Willow Rock as proposed. The comparative merits of this alternative were adequately evaluated. Compared to Willow Rock as proposed, the Reduced Capacity Alternative would substantially lessen direct and indirect impacts on biological resources and cultural and tribal cultural resources. With the reduced footprint and cavern, impacts relating to construction noise and vibration would be substantially lessened. The total construction and operational emissions would be substantially lessened due to a smaller footprint and construction timeline. The overall feasibility of this alternative is uncertain due primarily to economic and operational challenges and the project schedule delay that would result from a facility redesign. While this alternative would still provide quick-starting, flexible, and controllable energy generation, it would only partially meet the project's primary objective by delivering only half of the intended capacity. It would also not likely achieve the non-energy benefits of the Willow Rock project as proposed due to the reduced number of construction and operation jobs related to the project.

G. Conclusions of Law

The evidentiary record contains a sufficient analysis of alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations.

4 Compliance Monitoring Plan

A. The Compliance Monitoring Plan and Conditions of Certification

To ensure that certified generating facilities are constructed and operated in compliance with applicable laws, ordinances, regulations, and standards (LORS), as well as the specific Conditions of Certification adopted as part of this Decision, the California Energy Commission (CEC) requires a post-certification monitoring system – Compliance Monitoring Plan – for approved power plants.

The Compliance Monitoring Plan is the administrative mechanism used to ensure that the Willow Rock Energy Storage Center (Willow Rock) is constructed and operated according to the Conditions of Certification. It describes the respective duties and expectations of the project owner and the CEC Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.¹ Compliance with the Conditions of Certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Compliance Monitoring Plan also contains requirements governing the future planned closure, as well as the unexpected temporary and unexpected permanent closure of the project.²

Evidence on the topic of the Compliance Monitoring Plan and Conditions of Certification is contained in Exhibits 1025, 1032-1033, 1040-1041, 1053, 1155, 1233, 1323, 2000 and 2001, and the Reporter's Transcript of the Evidentiary Hearing³.

i. The Compliance Monitoring Plan

The first element of the Compliance Monitoring Plan contains essential compliance conditions (**COM-1 through COM-16**) that set forth:

- the right of access by the CPM, and the duties and responsibilities of the project owner, delegate agencies, and others (**COM-1, COM-2**);
- the requirements for handling confidential records and maintaining the compliance record (**COM-2, COM-9**);
- creation of pre-construction matrix for conditions and tasks that must be fulfilled prior to the start of construction, together with a process for verification of related

¹ Ex. 2000, FSA, pp. 9-1 through 9-8.

² Ex. 2000, FSA, pp. 9-3 and 9-8.

³ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

- submittals, enabling the Applicant to file certain submittals prior to certification in anticipation of construction commencing shortly after certification (**COM-3, COM-4**);
- the requirements for a compliance matrix, periodic compliance reports, and other administrative procedures necessary to verify the compliance status of all CEC-imposed conditions (**COM-5, COM-6, COM-8**);
 - notification to Kern County of key project events (**COM-7**);
 - procedures for project amendments or modifications (**COM-11**);
 - reporting of complaints, notices, and citations (**COM-12**);
 - details for submittal of Emergency Response Site Contingency Plan (**COM-13**);
 - incident reporting requirements (**COM-14**);
 - the requirements for facility non-operation, repair/restoration, and closure (**COM-15, COM-16**);
 - payment of annual facility compliance fee (**COM-10**); and
 - the tracking method for required mitigation associated with construction, operation, and closure below a level of significance (**COM-5, COM-16**).

ii. The Conditions of Certification

The second element of the Compliance Monitoring Plan contains all other specific Conditions of Certification required to be implemented by the project owner. These are also found in **Appendix A** of this Decision and referenced in the discussion of each individual topic area in this Decision. The individual conditions contain the measures required to avoid, minimize, or mitigate potentially adverse impacts associated with the construction, operation, and closure of the Willow Rock project to levels of below significance. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied.

The requirements contained in the Compliance Monitoring Plan and in the specific Conditions of Certification are intended to be implemented in conjunction with one another.

iii. Compliance Monitoring Authority and Responsibilities

The Chief Building Official (CBO) is authorized and directed to enforce all provisions of the California Building Code (Building Code), and the California Building Standards Code (Building Standards Code). The CEC serves as the CBO and has the responsibility to enforce the Building Code for all of the energy facilities it certifies. In addition, the CEC has the power to interpret the Building Code and adopt and enforce both rules and supplemental regulations that clarify application of the Building Code's provisions. The CEC's design review and construction inspection process as further discussed in the **Facility Design** section of this Decision conforms to Building Code requirements and ensures that all Facility Design Conditions of Certification are met.

The CEC appoints delegate CBOs (DCBOs) to perform design review and construction inspections on behalf of the CEC. These DCBOs may include the local building official, other

state agencies with specific expertise, and/or independent consultants hired to provide technical expertise that is not provided by the CBO alone. When an entity has been assigned DCBO duties, Staff will enter into an agreement with that entity to outline both its roles and responsibilities and those of its subcontractors and delegates. The project owner shall pay the cost of these reviews and inspections.

B. Agency and Public Comment

The Committee solicited oral comment from technical and legal experts from the Department of Water Resources Division of Safety of Dams (DWR-DSOD) at the Evidentiary Hearing on the topic of compliance of the design, construction and operation of the embankment of the hydrostatically compensating reservoir (reservoir embankment) under the California Water Code and the Dam Safety Program under the jurisdiction of DWR-DSOD.⁴ A more detailed discussion of the CEC's delegation of DCBO responsibilities to DWR-DSOD to review and approve technical requirements for the reservoir embankment under DWR-DSOD's jurisdiction is included in **Soil and Water Resources** in Section 7(B) of this Decision.

C. Findings of Fact

Based on the evidence, we make the following findings and conclusions:

1. Requirements contained in the Compliance Monitoring Plan and the Conditions of Certification as set forth in Appendix A of this Decision are intended to be implemented in conjunction with one another.
2. We adopt the Compliance Monitoring Plan and Conditions of Certification as set forth in Appendix A of this Decision.

D. Conclusions of Law

1. The compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532.
2. The Compliance Monitoring Plan and the Conditions of Certification as set forth in Appendix A of this Decision ensure that the Willow Rock Energy Storage Center will be designed, constructed, operated, and closed in conformity with all applicable laws, ordinances, regulations, and standards.

⁴ 8/21/2025 Evidentiary Hearing RT pp. 179:16 – 226:6.

5 Engineering Assessment

The California Energy Commission (CEC) must determine whether the Willow Rock Energy Storage Center (Willow Rock) will be designed, sited, constructed, and operated to ensure safe and reliable operation.¹ The broad engineering assessment of the proposed Willow Rock project consists of separate analyses that examine the project's facility design and engineering elements, power plant efficiency, and power plant reliability. These analyses include the above ground and subterranean project components of the energy storage facility, as well as the project-related interconnection and transmission facilities.

A. Facility Design

This **Facility Design** review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to the design and construction of the Willow Rock Energy Storage Center. This Section 5(A) addresses consistency with laws, ordinances, regulations, and standards (LORS) applicable to the energy storage facility (the Willow Rock site) itself. The analyses of the transmission system (the gen-tie) are in Sections 5(D) (**Transmission System Engineering**) and 5(E) (**Transmission Line Safety and Nuisance**) of this Decision; the analyses of the Willow Rock project's environmental impacts and local impacts are in Sections 6 (**Public Health and Safety**), 7 (**Environmental Assessment**) and 8 (**Local Impact Assessment**) of this Decision.

i. Introduction

The Willow Rock Energy Storage Center will feature a 500-megawatt (MW) Advanced Compressed Air Energy Storage (A-CAES) system, with the capacity to provide up to 4,000 MW-hours of energy storage. The project will be in the Mojave-Rosamond region of eastern Kern County, which lies in seismic design category D.² The energy storage site itself consists of approximately 88.6 acres of private, undeveloped land zoned as Exclusive Agriculture (A) west of Sierra Highway and north of Dawn Road, in unincorporated Kern County approximately 4 miles north of Rosamond, California. The site falls within the boundaries of the Kern County General Plan but is not within any Specific Plan Area. The surrounding landscape is

¹ Pub. Resources Code, §§ 25216.3(a), 25523(a), and 25523(d)(1); Cal. Code Regs, tit. 20, §§ 1741, 1741(b)(3), and 1745.5(b)(13)-(15).

² Ex. 2000, FSA, p 4.2-2, citing the American Society of Civil Engineers' (ASCE's) Hazard Tool which identifies the project site in Kern County as being in seismic design category D on the Earthquake Hazard Map, where buildings and structures may experience "severe and destructive ground shaking."

predominantly open desert with low population density and very limited commercial or institutional development.³

The A-CAES project will utilize a subterranean cavern in which air will be compressed by water sourced from a hydrostatically compensating reservoir and stored during off-peak times, and then released and expanded through turbines to generate electricity on demand.⁴ The water-based thermal management system will capture the heat developed during air compression, store it, and re-use it when generating electricity, making the process nearly adiabatic; this will increase the system's efficiency and eliminate the need for operating energy from fossil fuels.⁵

The above ground components will include four air compression drivetrains, four air-expansion turbine generators, and a thermal management system which is integral to the adiabatic, fuel-free, and emission-free process. Additionally, an approximately 600-acre-foot surface-level hydrostatic compensation reservoir will be excavated and constructed predominantly in cut (below finished grade) using an earthen embankment approximately 6 feet high. The reservoir will cover a surface area of approximately 21.5 acres and have an average depth of approximately 45 feet.⁶

The underground infrastructure will consist of one purpose-built cavern for the storage of compressed air as well as shafts for conveyance of air and water between the cavern and the top-side facility. The storage cavern will be constructed in the bedrock below the Willow Rock project site targeting a depth of approximately 2,000 to 2,500 feet below ground surface (bgs). Access to the cavern for mobilization of the construction equipment and crews will be accomplished by one of two methods: 1) construction of a large-diameter conventionally sunk shaft, or 2) construction of several rotary drilled (blind bore) shafts. Both options are analyzed in the record. Cavern access and construction will be accomplished using conventional mining approaches and techniques.⁷

The written testimony also describes the design details for the major electrical equipment and systems including turbine generators, synchronous motors for the compression trains, power generators for transmission, alternating and direct power supplies for all power generation and auxiliary systems, and three 2.5 MW diesel-fired emergency power generators.⁸

The record also provides details for the various methods following LORS that will be used to properly manage, store, and dispose of hazardous wastes generated by the project including lubricating oils and chemical cleaning wastes. The application includes design details for chemical storage, drain piping, and containment areas. Safety showers, eyewashes, and

³ Ex. 2000, FSA, pp. 3-1 – 3.3 and 3-9.

⁴ Ex. 2000, FSA, pp. 3-10 – 3.11 and Table 3-1.

⁵ Ex. 2000, FSA, p. 3-10.

⁶ Ex. 2000, FSA, p. 3-16.

⁷ Ex. 2000, FSA, pp. 3-16 – 3-20.

⁸ Ex. 2000, FSA, pp. 3-20 – 3-24.

personal protective equipment (PPE) will be provided onsite and adjacent to chemical use and storage areas.⁹

The embankment for the reservoir meets the definition of a jurisdictional dam per California Water Code Sections 6002 and 6003. Since the reservoir embankment is considered a dam, the embankment design, specifications, and construction will be overseen and regulated by the Department of Water Resources Division of Safety of Dams (DWR-DSOD). The CEC will retain exclusive jurisdiction over the Willow Rock project, and the CEC's Delegate Chief Building Official (DCBO) will retain oversight responsibility of the entire project including the reservoir. However, the CEC will delegate design review and inspection of the reservoir embankment construction and periodic operational safety to the DWR-DSOD, with onsite consultation with the DCBO and ongoing guidance from the CPM. See **Soil and Water Resources** in Section 7(B) of this Decision for more information on the reservoir embankment.

For more information on the Willow Rock Energy Storage Center and its related project description, please see the **Project Description** in Section 2 of this Decision.

Evidence on the topic of Facility Design is contained in Exhibits 1001, 1025, 1032-1033, 1035-1036, 1040-1041, 1053, 1056, 1075, 1127, 1128, 1130, 1140, 1141, 1153, 1155, 1233-1234, 1323, and 2000-2001, and the Reporter's Transcript of the Evidentiary Hearing¹⁰.

ii. Assessment of Facility Design

The Supplemental Application for Certification (SAFC) describes the project's facility design and engineering plans. The Final Staff Assessment (FSA) prepared by the CEC Staff (Staff) includes a thorough analysis of the facility design.

The purpose of this facility design analysis is to ensure that the Willow Rock Energy Storage Center is described with sufficient detail to ensure it can be designed and constructed in accordance with applicable engineering codes, is consistent with applicable LORS, and ensures public health and safety.¹¹ In general, this analysis also evaluates the Applicant's proposed design criteria, describes the design review and construction inspection process, and establishes Conditions of Certification. These conditions allow the CEC, the CPM, and the project owner to adopt a compliance monitoring program that will verify compliance with these LORS.¹²

In evaluating the proposed engineering plans, we have considered whether the Willow Rock Energy Storage Center is described with sufficient detail to ensure that the project can be

⁹ Ex. 2000, FSA, p. 3-29.

¹⁰ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20 and 191-271.

¹¹ Ex. 2000, FSA, pp. 4.1-1 through 4.1-6, and Table 4.1-1 (Compliance with Applicable LORS).

¹² Ex. 2000, FSA, Section 4.1.

designed and constructed in accordance with applicable engineering LORS. We have also identified any design requirements that are necessary to address unique project features and site conditions, including those which could potentially affect public health and safety and/or the operational reliability of the project.

Additionally, as we discuss in Section 5(C) **Power Plant Reliability**, we include the maintenance recommendations and QA/QC procedures provided by equipment manufacturers as an engineering standard in the list of LORS that the project owner will be responsible for implementing. Condition of Certification **MECH-1** requires the project owner to provide its Maintenance Program to the DCBO prior to the start of any increment of major mechanical-related components' construction.

The record describes all major structures, systems, equipment, and associated components necessary for power production, including handling and storage facilities for hazardous or toxic materials that could potentially cause health or safety hazards if not constructed properly.¹³ The Conditions of Certification for **Facility Design** are detailed in **Appendix A**, and are summarized here:

- **GEN-1** requires compliance with the 2022 California Building Standards Code, or a successor to that code in effect, whichever is most restrictive.
- **GEN-2** describes the requirements for facility design submittals, master drawings, and master specifications for all major structures, systems, and equipment, and their associated components, including those used for the storage, containment, or handling of hazardous or toxic materials, or those which could become potential health and safety hazards, if not constructed according to applicable engineering LORS.
- **GEN-3 through GEN-8** provide for the assignment of and payment for qualified engineers to monitor and inspect construction of the facility, and the DCBO's final approval of all completed work.
- **CIVIL-1 through CIVIL-4** specify the plans, calculations, and permits necessary for grading, drainage, erosion, and sedimentation plans, and soils, geotechnical or foundation investigation reports, and the DCBO's final approval of the final grading plans.
- **STRUC-1** requires the project owner to submit plans, calculations, and other supporting documentation to the DCBO for design review and acceptance for all project structures, systems, and equipment identified in the DCBO-approved master drawing and master specifications list.¹⁴

¹³ Ex. 2000, FSA, Section 4.1-1.

¹⁴ The CEC is the CBO for certified power plants under our jurisdiction. The CEC may delegate CBO authority to other state or local building officials and/or to independent consultants to carry out design review and construction and operational inspections. When CBO duties are delegated, the CEC requires a Memorandum of Understanding or other written agreement with the delegated entity to outline respective roles, responsibilities, and qualifications of involved

- **STRUC-2** specifies the reports required for structural activities requiring special inspections.
- **STRUC-3** describes how the project owner must submit design changes to the DCBO.
- **STRUC-4** specifies how tanks and vessels (if any) containing quantities of toxic or hazardous materials exceeding amounts specified in the 2022 California Building Code shall be designed.
- **MECH-1 and MECH-2** require the project owner to implement a quality assurance/quality control program to ensure that the project's components are designed, procured, fabricated, installed, and maintained as required by applicable LORS.
- **ELEC-1** ensures that the design and construction of the major electrical features will comply with applicable LORS.

The evidence establishes that the Willow Rock project will utilize accepted industry standards, design practices, equipment manufacturer recommendations, and construction methods in preparing and developing the site and will comply with all applicable site preparation LORS.¹⁵ The project owner must implement the provisions of Conditions of Certification **GEN-1 through GEN-8, CIVIL-1 through CIVIL-4, STRUC-1 through STRUC-3, MECH-1 and MECH-2, and ELEC-1** to ensure that design, construction, and maintenance activities comply with applicable LORS.

The record also includes analyses of: the impacts of the project on soil and water resources; potential geological and seismic hazards; and preliminary project design plans related to grading, excavation, flood protection, erosion control, site drainage, site access, the reservoir, and the optional architectural berm. The **Soils and Water Resources** and **Geological and Paleontological Resources** sections of this Decision provide further discussion of design issues that must be addressed by the project. In particular, Conditions of Certification **WATER-5** and **WATER-6** ensure that the embankment for the hydrostatically compensating reservoir will be designed, constructed, and operated pursuant to sections 6002 and 6003 of the Water Code and under the oversight of DWR-DSOD.

Additionally, the record addresses project closure, which is defined in the record as a facility shutdown with no intent to restart operation. In order to ensure that facility closure will be completed in a manner that is environmentally sound, safe, and protects the public health and safety, the project owner must submit a closure plan to the CEC for review and approval prior

individuals such as those described in Conditions of Certification **GEN-1 through GEN-8**. Based on the unique components of the Willow Rock project, delegated duties to the DWR-DSOD are further specified in **WATER-5 and WATER-6** discussed in **Soil and Water Resources** Section 7(B). The Conditions of Certification further require that every element of project construction must first be approved by the DCBO and that qualified engineers perform or oversee the inspections.

¹⁵ Ex. 2000, FSA, pp. 4.1-4 — 4.1-6.

to the commencement of closing the facility, as required in Conditions of Certification **COM-15** and **COM-16** in the **Compliance Monitoring Plan** section of this Decision. Although future conditions that could affect facility closure are largely unknown at this time, the requirements in the **Compliance Monitoring Plan** are adequate protection, even in the unlikely event that the project is abandoned.¹⁶

iii. Compliance with Laws, Ordinances, Regulations and Standards

The Conditions of Certification enable both the CEC compliance project manager (CPM) and the Applicant to adopt a Compliance Monitoring Program that will verify compliance with all laws, ordinances, regulations, and standards (LORS) applicable to the design, construction, and operation of the project.¹⁷ The LORS, below in **Table 5.A-1**, are applicable to the facility design of Willow Rock Energy Storage Center project. The **Facility Design** Conditions of Certification are contained in **Appendix A** at the end of this Decision.

TABLE 5.A-1 Facility Design Compliance With Applicable LORS	
Applicable LORS	Conformance and Basis For Determination
State	
California Building Standards Code (Building Standards Code) 2022 or 2025 (whichever is the latest edition in effect) (also known as Title 24, California Code of Regulations)	Compliant. Conditions of Certification GEN-1 through GEN-8, CIVIL-1 through CIVIL-4, STRUC-1 through STRUC-4, MECH-1, MECH-2, and ELEC-1 ensure compliance with the Building Standards Code.
California Water Code, Division 3, Part 1, and California Code of Regulations, Title 23, Division 2, Chapter 1 (collectively referred to as the Dam Safety Program Requirements)	Conditions of Certification WATER-5 and WATER-6 ensure compliance with the Water Code.
Local	
Kern County's General Plan Safety Element	Compliant. Conditions of Certification CIVIL-1 and CIVIL-4 , and STRUC-1 through STRUC-4 ensure compliance with the County's General Plan Safety Element.

¹⁶ Ex. 2000, FSA, pp. 3-40 – 3-42.

¹⁷ Ex. 2000, FSA, Table 4.1-1.

TABLE 5.A-1 Facility Design Compliance With Applicable LORS	
Applicable LORS	Conformance and Basis For Determination
General	
Air Moving and Conditioning Association (AMCA) Standards	Compliant. Conditions of Certification CIVIL-1 through CIVIL-4, STRUC-1 through STRUC-4, MECH-1, MECH-2, and ELEC-1 ensure compliance with each of these LORS.
American Concrete Institute (ACI) Codes	
American Institute of Steel Construction (AISC) Codes	
American National Standards Institute (ANSI) Codes	
American Petroleum Institute (API)	
American Society of Civil Engineers (ASCE) Codes	
American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) Standards	
American Society of Mechanical Engineers (ASME) Codes	
American Society of Testing and Materials (ASTM) Codes	
American Water Works Association (AWWA)	
American Welding Society (AWS) Codes	
California Electrical Code	
Concrete Reinforcing Steel Institute (CRSI) Codes	
National Association of Corrosion Engineers (NACE) Standards	
National Electric Safety Code (NESC) Standards	
National Fire Protection Association (NFPA) Standards	
Division of Occupational Safety and Health (Cal OSHA regulations), Title 8 California Code of Regulations	
Steel Deck Institute (SDI) – Design Manual for Floor Decks and Roof Decks	

TABLE 5.A-1 Facility Design Compliance With Applicable LORS	
Applicable LORS	Conformance and Basis For Determination
29 CFR Part 1926.800: Underground Construction (Tunneling) Manual EM 1110-1-1804 – Engineer Manual, Engineering and Design, Geotechnical Manual EM 1110-2-2901 – Tunnels and Shafts in Rock Manual EM 1110-1-3500 – Chemical Grouting Technology Mining Safety and Health Administration (MSHA): Specification CE-1305.02 – Guide Specification for Tunnel Grouting or Equivalent Maintenance and QA/QC recommendations from equipment manufacturers	

The evidence indicates that the design, construction, and eventual closure of the Willow Rock Energy Storage Center and its linear facilities will comply with applicable LORS. The **Facility Design** Conditions of Certification ensure compliance with these LORS.

iv. Agency and Public Comment

At the Evidentiary Hearing, the Committee solicited oral testimony from the Applicant and Staff regarding the facility design, including cavern construction.¹⁸ The Committee also invited comments from technical and legal experts from the DWR-DSOD on the topic of compliance of the design, construction and operation of the embankment of the hydrostatically compensating reservoir (reservoir embankment, or HC-reservoir) pursuant to the Water Code and the Dam Safety Program under the jurisdiction of DWR-DSOD. A more detailed discussion of the CEC DCBO's delegation to DWR-DSOD to review and approve technical requirements for the reservoir embankment that are under DWR-DSOD's jurisdiction is included in **Soil and Water Resources** in Section 7(B) of this Decision.

Also at the Evidentiary Hearing, the Director of the Kern County Planning and Natural Resources Department stated she had the authority to report that the Board of Supervisors supported the Willow Rock Energy Storage Center based on the inclusion of conditions in the FSA that Kern County had requested to be included as Conditions of Certification addressing a number of construction and operational aspects of the project, including but not limited to

¹⁸ 8/21/2025 Evidentiary Hearing RT pp. 226:13 – 271:6.

facility design. The Committee has considered all comments and specific conditions requested by Kern County as incorporated in the FSA,¹⁹ and concurs with Staff that each of them are reasonable to avoid or mitigate significant impacts to the environment, public health, and safety, or to provide local and regional public benefits. Thus, as discussed in this and other sections of this Decision, the Committee has accepted those proposed conditions and included them in the Conditions of Certification in **Appendix A**.

v. Findings of Fact

Based on the uncontroverted evidence, we make the following findings and conclusions:

1. The evidence provides a preliminary engineering design and description of the Willow Rock Energy Storage Center.
2. The **Facility Design** evidence addresses consistency with applicable engineering laws, ordinances, regulations, and standards, but does not discuss the project's potential environmental impacts, which are covered in the Environmental Assessment sections of this Decision.
3. The evidence establishes that the project will be designed, constructed, and maintained in conformity with the applicable laws, ordinances, regulations, and standards.
4. The Conditions of Certification require the project owner to comply with the most current version of the California Building Standards Code and other applicable laws, ordinances, regulations, and standards in effect at the time that design approval and construction begin.
5. The **Facility Design** Conditions of Certification require that qualified engineering personnel perform design review, plan checking, and field inspections of the project.
6. The **Facility Design and WATER-5 and WATER-6** Conditions of Certification ensure that the project is designed and constructed in accordance with applicable law and in a manner that protects public health and safety.
7. The General Conditions of Certification included in the **Compliance Monitoring Plan** section of this Decision delineate the requirements for closure and decommissioning of the project.

¹⁹ See TN 259786, TN 262870, and TN 263490.

vi. Conclusions of Law

The **Facility Design, WATER 5 and Water-6, and COM-15 and COM-16** Conditions of Certification in **Appendix A** of this Decision ensure that the Willow Rock Energy Storage Center will be designed, constructed, and maintained in conformance with the applicable laws, ordinances, regulations, and standards related to the engineering elements summarized in this section of the Decision.

5 Engineering Assessment

B. Power Plant Efficiency

This **Power Plant Efficiency** section analyzes whether the Willow Rock Energy Storage Center will result in inefficient and unnecessary consumption of energy resources.

i. Introduction

The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology. As a long-duration energy storage asset, Willow Rock will be able to provide power during periods of increased need on the grid such as times of high electrical load, periods when intermittent renewable source generation fluctuates, when baseload plants are not operating or are being brought online, or during grid emergency conditions or local reliability needs. To maximize efficiency, the facility is expected to charge during times of low demand on the grid such as times of low electrical load and during periods when renewable source generation is higher than the instantaneous system demand, thus affording the ability to store excess renewable generation that might otherwise be lost or curtailed.

The Supplemental Application for Certification (SAFC) describes the project's energy efficiency. The Final Staff Assessment (FSA) prepared by the CEC Staff includes a substantive analysis of the efficiency of the Willow Rock project.¹

Evidence on the topic of **Power Plant Efficiency** is contained in Exhibits 1005, 1025, 1032-1033, 1040-1041, 1053, 1055, 1155, 1233, 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.²

ii. Assessment of Power Plant Efficiency

a. Thresholds of Significance

CEQA guidelines require that the CEC's analysis "...describe[s] feasible measures

which can minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy."³ In conducting our analysis of the efficiency of the Willow Rock project, we also evaluate whether there are alternatives to the project that could

¹ Ex. 2000, FSA, pp. 3-1 – 3.22 and 5.5.1 – 5.5-6.

² 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20, 130:16 – 130:20, and 211:17 – 211:23.

³ CEQA Guidelines, section 15126.4(a)(1).

reduce wasteful, inefficient, or unnecessary energy consumption. Project fuel efficiency, and therefore its rate of energy consumption, is determined by both the configuration of the power-producing system and the type of fuel and equipment used to generate its power.

b. Direct and Indirect Impacts

The SAFC describes the project's energy efficiency. The FSA includes a substantive analysis of the efficiency of the Willow Rock project.⁴

The overall facility will consist of four nominal 130 MW gross power turbine trains, outputting a total of 500 MW net at the point of interconnection. The trains will contain electric motor-driven air compressors, heat exchangers, air turbine generators, air exhaust stacks, and ancillary equipment. The trains will share a common set of thermal storage tanks (hot and cold water), as well as the air storage cavern.

The water-based thermal management system will capture the heat developed during air compression, store it, and re-use it when generating electricity, making the process nearly adiabatic; this will increase the system's efficiency and eliminate the need for energy from fossil fuels under typical operating conditions, other than emergency backup systems.⁵

Table 5.B-1 describes the energy storage and generation process and efficiencies achieved in each step.⁶

TABLE 5.B-1 Energy Storage And Generation Process Steps			
STEP 1 Air Compression Using Electricity	STEP 2 Heat Capture in a Thermal Management System	STEP 3 Compressed Air Storage	STEP 4 Compressed Air Conversion to Electricity
Off-peak or surplus electricity from the grid is used to operate air compressors that produce high-pressure heated compressed air.	Heat is extracted from the compressed air and stored in a proprietary thermal management system. This nearly adiabatic process increases overall cycle efficiency and eliminates the subsequent need for burning fossil fuels under typical conditions.	Air is stored in a purpose-built storage cavern, where hydrostatic compensation is used to maintain the system at near-constant air pressure during operation.	Hydrostatic pressure forces air back to the surface, where it is recombined with the stored heat and expanded through turbine generators to generate electricity on demand.

When the A-CAES system is charging (known as the "charge cycle"), off-peak energy or surplus electricity (such as excess solar that might otherwise be curtailed when production exceeds demand) from the grid is used to drive air compressors, converting the electrical

⁴ Ex. 2000, FSA, pp. 3-1 – 3.22 and 5.5.1 – 5.5-6.

⁵ Ex. 2000, FSA, p. 3-10.

⁶ Ex. 2000, FSA, Table 3-1.

energy into potential energy in the compressed air and heat energy stored in the hot water thermal storage tanks in the thermal energy management system. For very long standby periods (exceeding a few days) the hot water stored in the spherical tanks will be maintained by electrical heaters.⁷

The air stream exits the compression process at the same pressure as that maintained in the air storage cavern that is governed by the vertical distance between the cavern and the connected hydrostatic compensation reservoir located at the surface. As air is charged into the storage cavern, water is displaced up the hydraulic conduit and into the surface reservoir. This maintains near-constant air pressure within the cavern and stores substantial potential energy in the elevated water. Once in the cavern, the air can be stored until electricity is required.⁸

To generate electricity (known as the “discharge cycle”), compressed air is discharged from the cavern, which allows the compensation water to flow back into the cavern. Similar to the charge cycle, the compensation water from the reservoir maintains near-constant air pressure in the cavern during discharging. The cool high-pressure air exiting the cavern is reheated using the heat stored by the thermal management system and the same set of heat exchangers that were initially used to extract it. The reheated compressed air is then used to drive air-expansion turbine generators, which efficiently convert the stored potential energy back into electricity for the grid.

The facility will be designed for 520 MW gross rated capacity on both charge and discharge with an 8-hour discharge duration at full rated capacity. The facility will be designed to achieve an average round trip efficiency (RTE) of 55 to 60 percent, meaning that the facility will return 55 to 60 percent of the electric energy used to complete the storage cycle as useful power output during the discharge cycle. The actual net electrical output of the system will vary in response to ambient air temperature conditions, electrical grid operating requirements such as voltage or volt-ampere reactive (VAR) support and other operating factors.⁹

When the plant is not actively charging or discharging, it will be maintained in standby/idle mode. The electrical power draw of the facility during standby/idle consists of small pumps, heaters, and coolers in various sections of the plant.¹⁰

The electric power required for charging the system will be drawn from the electrical grid with additional power for the auxiliaries, including:

- Turbine generators to transform medium voltage (13.8 kV) to 230 kV via unit transformers for the electrical grid connections.
- Synchronous motors supplying the four air compressor trains.

⁷ Ex. 2000, FSA, pp. 3-11 – 3.12.

⁸ Ex. 2000, FSA, p. 3-10.

⁹ Ex. 2000, FSA, pp. 3-11 – 3.12.

¹⁰ Ex. 2000, FSA, p. 3-13.

- Auxiliary power supplies for instruments at both 24 volts direct current and 120 volts alternating current.
- Uninterruptible power supply (UPS) system for critical instruments, lighting, valves, telecommunications, security, and smoke and building heat detectors.¹¹

Emergency power will be provided by three diesel-fired self-contained 4.16 kV generators, up to approximately 2.5 MW each, to supply emergency power for all critical loads during a loss of the utility interconnection. These units will meet United States Environmental Protection Agency (USEPA) Tier 4 emissions standards and will normally operate, one at a time, only to facilitate maintenance and reliability testing for up to 50 hours per year.¹²

Construction of the project will take approximately 60 months to complete. Throughout the construction activities, various equipment, such as bulldozers, excavators, cranes, and trucks will consume nonrenewable energy resources, primarily fossil fuels such as gasoline and diesel. The Conditions of Certification will restrict idling of compression engines. It is anticipated that fossil fuels used by the equipment during construction will be used efficiently and will not result in significant long-term depletion of these energy resources or permanently increase the project's reliance on them.¹³

Therefore, construction activities will create a less than significant impact on local and regional energy supplies and a less than significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

During operation, it is likely that the A-CAES system will be charged midday during excess solar renewable energy generation when electricity is the cheapest or might otherwise be curtailed, and will be discharged during periods when energy is scarcer, more expensive, and when there will be little to no renewable energy generation. The project will utilize the electrical grid, during off-peak hours, to power the air compressors to compress and inject air into the storage caverns. The charge mode will require electricity from the electrical grid to power the four compression trains, for up to 13.5 hours per day (4,960 hours per year maximum). When the project is dispatched to provide electricity to the electrical grid, air will be discharged from the cavern and heated by the stored thermal energy within the heat exchanger before entering the turbine expander to generate electricity. The turbine generators can provide the electrical grid with up to 500 MW of electricity for up to eight hours per day (2,976 hours per year).¹⁴

The efficiency is the ratio of useful energy output divided by useful energy input. Thus, the project's round-trip efficiency (RTE) will be approximately 60 percent. The inefficiency is primarily attributed to ancillary electrical loads (facility's in-house power demand), heat loss

¹¹ Ex. 2000, FSA, pp. 3-20 – 3.22.

¹² Ex. 2000, FSA, p. 3-23.

¹³ Ex. 2000, FSA, p. 5.5-3.

¹⁴ Ex. 2000, FSA, pp. 5.5-3 – 5.5-4.

due to heat transfer (heat input into exchangers versus useful heat injected into the turbine), and electrical transmission losses.¹⁵

In light of the project's projected efficiency rating of 60 percent coupled with the fact that the power used to charge the system will be drawn during off-peak hours and might otherwise be curtailed, together with the use of air as an abundant resource that cannot be depleted, the Willow Rock Energy Storage Center will not result in potentially significant impact due to wasteful, inefficient, or unnecessary consumption of energy resources.

Additionally, the emergency diesel generators will be expected to operate for no more than 50 hours each per year, consuming an exceedingly small fraction of available diesel fuel in the state. Therefore, the project's use of diesel fuel will be less than significant.

The Willow Rock project includes measures to reduce energy consumption during construction. Additionally, the project will increase renewable energy generation capacity in the portfolios of Southern California Edison (SCE) and the State. Through energy-efficient design and increased renewable electricity generation, the project will neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency and, therefore, will have no impact on those plans.¹⁶

Because there are no potentially significant impacts nor conflicts with LORS or state and local energy plans from the Willow Rock Energy Storage Center due to wasteful, inefficient, or unnecessary energy consumption, and no mitigation is necessary to lessen any impacts to energy resources to below significant, there is no need to consider whether there are feasible alternatives for long-duration storage technology that can achieve the output and other objectives of this project with fewer impacts on energy resources. A discussion of alternatives to the Willow Rock project is provided in Section 3 (**Project Alternatives**).

c. Cumulative Impacts

Lastly, there are no cumulative impacts on energy resources or efficiency. SCE currently has around 3 gigawatts of energy storage capacity, with plans to add another 8.1 gigawatts to enhance grid reliability. The project's projected maximum net energy demand will be nearly 992,000 MWh per year (MWh received from the grid minus MWh sent back to the grid). This will constitute a small fraction of SCE's current resource capacity and even smaller fraction of its future capacity. Therefore, the project will have no cumulative energy and energy resource impacts with past, present, or probable future projects.¹⁷

¹⁵ Ex. 2000, FSA, p. 5.5-4.

¹⁶ Ex. 2000, FSA, p. 5.5-5.

¹⁷ Ex. 2000, FSA, p. 5.5-6.

iii. Compliance with Laws, Ordinances, Regulations and Standards

The record establishes that the Willow Rock Energy Storage Center will comply with applicable local and state LORS relating to energy use and efficiency. **Table 5.B-2** describes the LORS and the project's consistency with them.¹⁸

TABLE 5.B-2 Conformance With Applicable LORS for Energy Use and Efficiency	
Applicable LORS	Conformance and Basis for Determination
Local	
Kern County	
Kern County General Plan – Energy Element	Compliant. The project will comply with the County's General Plan through compliance with energy related goals, policies, and measures to protect the energy resources.
State	
Senate Bill 100—The 100 Percent Clean Energy Act of 2018	Compliant. The project will comply with SB 100 through its energy-efficient design and increasing renewable electricity generation.
California 2022 Energy Efficiency Standards for Residential and Nonresidential Buildings—Green Building Standards Code, California Code of Regulations, Title 24, or its successor that may be in effect, whichever is more restrictive.	Compliant. The project will comply with the California Green Building Standards Code through conformance with the California Building Standard Codes.

iv. Agency and Public Comment

There were written and oral comments submitted in the record in support of the project, some that approved of the Willow Rock Energy Storage Center's ability to generate reliable and renewable energy, to provide long duration energy storage, and to contribute to energy resource adequacy. Please refer to **Appendix D** (Agency and Public Comment) for a list of specific commenters. The Committee appreciates the comments, and none of them require a specific response.

v. Findings of Fact

Based on the uncontroverted evidence, we make the following findings:

1. The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology.

¹⁸ Ex. 2000, FSA, Table 5.5-1.

2. The Willow Rock project includes measures to reduce nonrenewable energy consumption during construction.
3. During operation, the A-CAES system will be charged primarily during midday during excess solar renewable energy generation when electricity is the cheapest or might otherwise be curtailed, and will be discharged during periods when energy is scarcer, more expensive, and when there will be little to no renewable energy generation.
4. The charge mode will require electricity from the electrical grid to power the four compression trains for up to 13.5 hours per day (4,960 hours per year maximum). The turbine generators will provide the electrical grid with up to 500 MW of electricity for up to eight hours per day (2,976 hours per year).
5. The project's round-trip efficiency will be approximately 60 percent.
6. The emergency diesel generators will be expected to operate for no more than 50 hours each per year, consuming an exceedingly small fraction of available diesel fuel in the state.
7. The record establishes that energy consumed by the Willow Rock project will not create significant adverse effects on energy supplies or resources, nor will it consume energy in a wasteful or inefficient manner, and no mitigation measures are required to lessen potential impacts on energy supplies.
8. Through energy-efficient design, storage, and renewable electricity generation, the Willow Rock project will neither conflict with nor obstruct state or local plans for renewable energy or energy efficiency and, therefore, will have no impact on those plans.
9. No federal, state, or local laws, ordinances, regulations, or standards have been established to regulate the efficiency of A-CAES projects.
10. No Conditions of Certification are required for this topic.

vi. Conclusions of Law

The Willow Rock Energy Storage Center satisfies the standards established by the California Environmental Quality Act Guidelines for energy consumption and energy efficiency because it will not result in adverse effects on energy supplies or resources, nor require additional sources of energy supply, nor consume energy in a wasteful or inefficient manner.

5 Engineering Assessment

C. Power Plant Reliability

This **Power Plant Reliability** section analyzes whether the Willow Rock Energy Storage Center will be designed, sited, and operated to ensure safe and reliable operation.¹

i. Introduction

The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology. The Willow Rock project is the first A-CAES facility of its scale built in the United States. A smaller, utility-scale commercial application at Hydrostor's Goderich A-CAES facility in Ontario, Canada demonstrates the operational performance of the adiabatic process and ability of A-CAES technology to deliver energy storage and grid services. Additionally, in building the Willow Rock Energy Storage Center, the Applicant will be relying on the use of standard industrial equipment and construction approaches. Lastly, the construction and reliability of the air compression cavern will follow the design, construction, and operational parameters consistent with below-ground hydrocarbon storage caverns in use today. The Willow Rock project will be built to operate in a manner consistent with industry norms for reliable and safe operation of each of the surface-level and underground systems. The project is designed to demonstrate an availability factor of 95 percent, for approximately 50 years.

The Supplemental Application for Certification (SAFC) describes the project's facility reliability, and the Applicant provided written and oral testimony. The Final Staff Assessment (FSA) prepared by the CEC Staff includes a substantive analysis of the reliability of the Willow Rock project relying on expert testimony. The Committee received oral testimony on the facility reliability at the Evidentiary Hearing. Evidence on the topic of **Power Plant Reliability** is contained in Exhibits 1005, 1025, 1032-1033, 1040-1041, 1053, 1119, 1127, 1128, 1135, 1155, 1233, 2000 and 2001, and the Reporter's Transcript of the Evidentiary Hearing².

¹ Cal. Code Regs., tit. 14, § 1742(b).

² 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20, 130:16 – 130:20, 211:17 – 211:23, and 226:15 – 268:1.

ii. Assessment of Power Plant Reliability

a. Thresholds of Significance

The CEC must determine whether the Willow Rock project will be designed, sited, and operated to ensure safe and reliable operation.³ There are no specific laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation.

Delivering acceptable reliability includes a consideration of adequate levels of facility availability including equipment reliability and redundancy, plant maintainability with scheduled maintenance outages, fuel and water availability, resistance to natural hazards. This consideration includes a review of the project's quality control measures.⁴ In reviewing a new power plant's potential effect on system reliability, the CEC examines whether the power plant will be built and operated at the typical level of reliability reflected in the power generation industry because, if it compares favorably to typical industry norms, it is not likely to degrade the overall reliability of the electricity system it serves.⁵

b. A-CAES Technology

Though this will be the first A-CAES facility built to this scale in the United States, a smaller, utility-scale commercial application at Hydrostor's Goderich A-CAES facility in Ontario, Canada demonstrates the operational performance of the adiabatic process and ability of A-CAES technology to deliver energy storage and grid services. In building the Willow Rock Energy Storage Center, the Applicant will be relying on the use of standard industrial equipment and construction approaches.⁶

Lastly, the construction and reliability of the air compression cavern will follow the design, construction, and operational parameters consistent with below-ground hydrocarbon storage caverns in use today. At the Evidentiary Hearing, Applicant's experts testified credibly to their knowledge, skill, and experience with other significant cavern construction projects. The record contains evidence of other subsurface storage caverns in use today in the United States and around the world, many of which have been operating in a safe and reliable manner for up to 50 years.⁷ Based on this expertise and the evidence in the record, the Willow Rock project will be built to operate in a manner consistent with industry norms for reliable and safe operation of each of the surface-level and underground systems.

³ Public Resources Code, § 25523(a); Cal. Code Regs., tit. 20, § 1741(a).

⁴ Ex. 2000, FSA, Section 3.7.2; Ex. 1233, Supplemental Application for Certification, Section 2.2.2.

⁵ Ex. 2000, FSA, p. 4.2-1.

⁶ 8/21/2025 Evidentiary Hearing RT pp. 236:22 – 238:14.

⁷ Ex. 1005.

c. Facility Availability

Equipment availability at the Willow Rock project will be ensured by adoption of appropriate quality assurance and quality control (QA/QC) programs during the design, procurement, construction, and operation of the energy storage center and by providing for adequate maintenance and repair of project equipment and systems. An operation and maintenance protocol will be implemented in accordance with the maintenance requirements prescribed by the project's equipment manufacturers.⁸

Equipment redundancy is provided in certain project systems, balancing the need to control capital expenditures while meeting the targeted overall system availability of 95 percent. All types of pumps are considered susceptible to mechanical breakdown, and the Willow Rock will install spares for critical services. The decision not to install a spare will depend on the criticality of the service. Where no equipment redundancy is provided, such as for turbomachinery, storage tanks, and heat exchangers, appropriate filtration and routine major and minor inspections are anticipated to ensure facility reliability. A Reliability, Availability, and Maintainability (RAM) study will be performed during final engineering design to further refine this preliminary redundancy information.⁹

The facility will be capable of generating ancillary power during electrical outages. The project will include four diesel-fired backup gensets to support the operation and maintenance buildings and critical auxiliary loads when power from the electrical grid is unavailable. These gensets include three 2.5-MW Kohler KD2500-4 gensets and a 345-kW Cummins CFP15EVS-F10 genset.¹⁰

d. Facility Maintainability and Maintenance Program

The project owner will implement all maintenance recommendations from the equipment manufacturers for all components and products used in the Willow Rock project. Pursuant to Conditions of Certification **MECH-1** and **COM-8**, the Willow Rock Maintenance Program will be based on those recommendations and QA/QC procedures, encompassing both preventive and predictive maintenance techniques. Additionally, the Willow Rock project will implement a Process Control System (PCS) to monitor and control the facility to ensure the project's operational performance, efficiency and reliability.¹¹

e. Fuel and Water Availability

The energy needed to operate the facility will primarily consist of electricity from Southern California Edison, procured during off-peak periods from the abundant renewable resources in

⁸ Ex. 2000, FSA, pp. 4.2-1 – 4.2-2.

⁹ Ex. 2000, FSA, pp. 3-38 – 3-39 and 8-33.

¹⁰ Ex. 2000, FSA, p. 4.2-2.

¹¹ Ex. 2000, FSA, pp. 4.2-1 – 4.2-2.

the region that are likely to be lost or curtailed, and the potential and kinetic energy from the unlimited air compressed and released during the charging and discharging cycles. California ultra-low sulfur diesel (15 ppm sulfur by weight) will be used for the emergency backup generators and fire pump and is readily available in the marketplace.¹²

Potable and process water will be provided by interconnection with the Antelope Valley East Kern Water Agency (AVEK) water distribution system. The availability of water to meet the facility needs is discussed in more detail in Section 7(B) (**Soil and Water Resources**).¹³

f. Facility Reliability in Relation to Natural Hazards

Potential hazards that could affect the facility's reliability include earthquake, flood, subsidence, and fire. The project will be designed to maximize safe operation during these anticipated events. Facility operators will be trained in safe operation, maintenance, and emergency response procedures to minimize the risk of personal injury and damage to the facility.¹⁴

The American Society of Civil Engineers' (ASCE) Hazard Tool identifies Kern County as being in seismic design category D. Under this category, buildings and structures would experience severe and destructive ground shaking. However, the possibility of surface rupture at the project site is considered less-than-significant because no known active or potentially active faults intersect the project site. Additionally, the Applicant's geotechnical evaluation of the cavern found that the bedrock is expected to be seismically stable. The project will be designed and constructed to meet the latest applicable engineering codes and seismic design requirements. **Facility Design** Conditions of Certification (Section 5(A)) will adequately mitigate potentially significant impacts to the facility's reliability due to seismic shaking.¹⁵

The nearest floodplain east of the Willow Rock Energy Storage Center site and Sierra Highway is designated as Zone A as defined by the Federal Emergency Management Agency (FEMA) and indicates a 1 percent chance of flooding in any given year, also known as the 100-year floodplain. Currently, no other development is expected within the floodplain area. Should the final Willow Rock project design contain elements that encroach on the floodplain, a floodplain permit will be obtained from Kern County to mitigate potential impacts. The project features will be designed and built to provide adequate levels of flood resistance by complying with the **Facility Design** Conditions of Certification **GEN-1, CIVIL-1, CIVIL 2, CIVIL-3, and CIVIL-4**. The record indicates that there are no concerns with the project's functional reliability due to flooding with the implementation of these conditions.¹⁶

¹² Ex. 2000, FSA, p. 3-38.

¹³ Ex. 2000, FSA, p. 3-38.

¹⁴ Ex. 2000, FSA, pp. 4.2-2 – 4.2-4.

¹⁵ Ex. 2000, FSA, p. 4.2-2.

¹⁶ Ex. 2000, FSA, p. 4.2-3.

The project is located in an area that has experienced land subsidence, primarily, from over-pumping ground water. Subsidence monitoring in the area will be managed by the Department of Water Resource approved Groundwater Sustainability Agencies (GSA), and conducted continuously, bi-annually, and annually.¹⁷

The Decision contains **Facility Design** (Section 5(A)), **Geological and Paleontological Resources** (Section 7(D)), and **Soil and Water Resources** (Section 7(B)) Conditions of Certification **GEO-1, GEO-2, GEO-3, CIVIL-1, STRUC-1 and WATER-1** to ensure that the Project will comply with the Safety Element in Kern County's General Plan and Kern County's Multi-Jurisdictional Hazard Mitigation Plan for earthquake and subsidence.¹⁸

The Willow Rock Energy Storage Center site is not in any areas mapped for significant fire hazards by either the California Department of Forestry and Fire Protection (CAL FIRE) in its Fire Hazard Severity Zones (FHSZ) or by the California Public Utilities Commission (CPUC) in its High Fire-Threat District (HFTD) Map. The Willow Rock project will fall within CAL FIRE's Kern County Management Unit and is covered by the Kern County Unit Fire Management Plan, but the project site is not within a focus area with historical fire risk within the plan area. The Conditions of Certification in **Hazards, Hazardous Materials Management, Hazardous Waste and Wildfire**, and **Worker Safety and Fire Protection** including **WORKER SAFETY-1, WORKER SAFETY-2, HAZ-1, HAZ-2 AND HAZ-3** will ensure that the project is in compliance with all state and local requirements to avoid or mitigate the impacts from wildfire. The record does not contain evidence that significant wildfire risk will impact the safe and reliable operation of the facility.

g. Comparison with Existing Facilities

The availability factor of Willow Rock Energy Storage Center is considered the amount of time the facility is able to store and produce electricity annually, minus the time period for which planned and unplanned outages would occur. The project's expected availability factor will be 95 percent, which is higher than most other existing power plant facilities. According to the North American Electric Reliability Corporation (NERC), the average availability factor for all fossil-fueled, hydroelectric, pump storage, geothermal, and nuclear-fueled power plants in North America in 2022 was approximately 80 percent (NERC 2022).¹⁹

iii. Compliance with Laws, Ordinances, Regulations and Standards

No federal, state, or local regulations related to facility reliability apply to the project.

¹⁷ Ex. 2000, FSA, pp. 4.2-3 – 4.2-4.

¹⁸ Ex. 2000, FSA, p. 4.2-4.

¹⁹ Ex. 2000, FSA, p. 4.2-4.

iv. Agency and Public Comment

There was no agency or public comment on facility reliability.

v. Findings of Fact

Based on the uncontroverted evidence, we make the following findings:

1. There are no specific federal or state laws, ordinances, regulations, or standards that establish either power plant reliability criteria or procedures for attaining reliable operation.
2. The Willow Rock Energy Storage Center will be built to operate in a manner consistent with industry norms and equipment manufacturer recommendations for reliable and safe operation of each of the surface-level and underground systems.
3. The North American Electric Reliability Corporation reports that the average availability factor for all fossil-fueled, hydroelectric, pump storage, geothermal, and nuclear-fueled power plants in North America in 2022 was approximately 80 percent (NERC 2022).
4. The record supports the Willow Rock project's expected availability factor of 95 percent.
5. The Willow Rock A-CAES system will provide adequate operational reliability.
6. Implementation of Quality Assurance/Quality Control programs during design, procurement, construction, and operation of the Willow Rock Energy Storage Center, as well as adequate maintenance and repair of the equipment and systems under the project owner's Maintenance Program, will ensure the Willow Rock Energy Storage Center is sufficiently reliable.
7. The **Facility Design** Conditions of Certification in this Decision ensure implementation of the Quality Assurance/Quality Control programs and conformance with seismic design criteria.
8. Southern California Edison will supply electricity to the Willow Rock Energy Storage Center.
9. The air resources needed for the project are unlimited.
10. The Antelope Valley East Kern water agency will provide adequate process and potable water for the safe and reliable operation of the Willow Rock Energy Storage Center.

11. With the Conditions of Certification included in **Appendix A** discussed elsewhere in this Decision, the Willow Rock Energy Storage Center will be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards to withstand seismic events and to prevent incidents of flooding or subsidence.
12. The Willow Rock Energy Storage Center is expected to meet or exceed industry norms for power generation reliability, and no evidence suggests that the facility will degrade the overall electrical system.
13. The redundancy of pumps and other critical components will be ensured by the Applicant's performance of a Reliability, Availability, and Maintainability (RAM) study during final engineering design.
14. No Conditions of Certification beyond those identified elsewhere in this Decision are required for **Facility Reliability**.

vi. Conclusions of Law

1. Implementation of the **Facility Design, Worker Safety and Fire Protection, Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire, Soil and Water Resources, and Geological and Paleontological Resources** Conditions of Certification **GEN-1, CIVIL-1, CIVIL 2, CIVIL-3, CIVIL-4, STRUC-1, MECH-1, WORKER SAFETY-1, WORKER SAFETY-2, HAZ-1, HAZ-2, HAZ-3, WATER-1, GEO-1, GEO-2 and GEO-3** required elsewhere in this Decision will ensure that the Willow Rock Energy Storage Center will be designed to operate safely and reliably.
2. No additional conditions of certification are required for **Facility Reliability**.
3. The Conditions of Certification set forth in **Appendix A** of this Decision will ensure that the Willow Rock Energy Storage Center will be designed to meet industry norms for storing and generating electricity safely and reliably.
4. The Willow Rock Energy Storage Center will not degrade the overall reliability of the electrical system.

5 Engineering Assessment

D. Transmission System Engineering

This **Transmission System Engineering** section analyzes the engineering, compliance with laws, ordinances, regulations, and standards, and any impacts of the proposed new transmission facilities associated with the Willow Rock Energy Storage Center.¹ This analysis evaluates whether the proposed project's interconnection conforms to all LORS required for safe and reliable electric power transmission.

i. Introduction

The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology. The major components consist of 1) the Willow Rock site where all of the generating, storage, and ancillary systems will be located, and 2) a proposed 19-mile long 230-kilovolt (kV) generation tie (gen-tie) route to deliver the facility's electricity to the Southern California Edison (SCE) Whirlwind Substation.

The Supplemental AFC describes in detail a preferred 19-mile gen-tie route, plus 8 optional routes, to connect the storage facility to the SCE Whirlwind Substation located southwest of the Willow Rock site at the intersection of 170th Street W and Rosamond Boulevard. (See **Project Description** Figure 2.) The proposed options for the gen-tie lines pass through a variety of base zoning designations and their zoning overlays, including the general base zoning designations of: Estate, Exclusive Agriculture, Limited Agriculture, General Commercial, Neighborhood Commercial, Light Industrial, Open Space, Low Density Residential, Platted Lands, and Recreation Forestry. The final alignment will depend on feasibility, site access, and potential interactions with existing and planned uses adjacent to the route.

The Supplemental Application for Certification (SAFC) describes the project's transmission system engineering. The Final Staff Assessment prepared by the CEC Staff includes a substantive analysis of the transmission system engineering. Evidence on the topic of Transmission System Engineering is contained in Exhibits 1001, 1008—1025, 1032-1033, 1040-1041, 1053, 1070—1073, 1119, 1127, 1130, 1132, 1135, 1155, 1233, 1323m and 2000, and the Reporter's Transcript of the Evidentiary Hearing.²

¹ Cal. Code Regs., tit. 20, § 1742(b).

² 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20.

ii. Assessment of Transmission System Engineering

a. Thresholds of Significance

The Willow Rock Energy Storage Center will connect to the SCE transmission network. As the interconnecting utility or participating transmission owner, SCE is responsible for ensuring grid reliability. The California Independent System Operator (California ISO) is the control area operator and is responsible for ensuring electric system reliability for participating entities and determining both the standards necessary to achieve system reliability and whether a proposed project will conform to those standards. The California ISO also provides an operational review of all facilities that are to be connected to the California ISO grid, as well as determines the cost responsibility of the proposed project.³

SCE and California ISO performed Phase I and Phase II interconnection cluster studies to determine the impact of the Willow Rock Energy Storage Center on the transmission system. The studies identified mitigation measures needed to ensure system conformance with performance levels required by utility reliability criteria, North American Electric Reliability Corporation (NERC) reliability standards, Western Electric Coordinating Council (WECC) system performance criteria, and California ISO planning standards. The CEC relies on these studies and reviews to determine Willow Rock project's effect on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards.⁴

b. Switchyards and Interconnection Facilities

The project will include a 230 kV substation, a power distribution center, and an approximately 19-mile-long, 230 kV single-circuit double-bundle conductor overhead generator tie-line (gen-tie) and underground line segments.

The Willow Rock Energy Storage Center electrical power will be generated using four triple pressure condensing turbine/generator trains with four air-powered turbine generators. In each train, power will be stepped up to 230 kV by generator step-up (13.8/230 kV) transformers rated at 96/128/160 megavolt amperes (MVA). The low sides of each of the three winding 13.8/230 kV transformers will tie into the 13.8 kV buses via a dedicated 4000 Ampere (A) breaker. The high side of each train transformer will connect with the high side of the generator 13.8/230 kV step-up transformer via a common bus. The 13.8 kV generator rated at 152.9 MVA with power factor of 0.85 will be connected to the generator step-up transformer via a disconnect switch and a breaker through a 7000 A, 13.8 kV isolated phase bus duct. The same common bus will tie into the substation via each train's motor-operated 230 kV disconnect switch and a breaker rated at 2000 A.

³ Ex. 2000, FSA, p. 4.3-3.

⁴ Ex. 2000, FSA, pp. 4.3-1 – 4.3-19.

A 230 kV generator tie-line will connect to the project's common tubular bus bar where the project's four trains connect to the SCE Whirlwind Substation via the approximately 19-mile-long gen-tie line. The gen-tie line will be supported by 60- to 140-foot high steel poles with a span of approximately 200 to 800 feet. The underground segment will cross the Los Angeles Department of Water and Power (LADWP) high voltage transmission corridor and in other locations where the transmission corridor is congested with existing facilities. The underground line segment will be constructed with an underground cable which runs through a continuous underground duct bank.

The SCE Whirlwind Substation will need to install a new 230 kV switch rack position to terminate the new gen-tie line. Power will be delivered to the SCE transmission system from the Whirlwind Substation.⁵

c. Interconnection Studies

The November 2021 Phase II Study Report and July 2022 Reassessment Report identified the transmission system impacts from the proposed Willow Rock Energy Storage Center project in SCE's Queue Cluster 13 along with 8 other generation projects seeking interconnection totaling over 2215 MW. The reports provide mitigation measures needed to ensure system conformance with utility reliability criteria, NERC planning standards, WECC reliability criteria, and the California ISO reliability criteria for potential impacts to the system. These California ISO reports concluded that the generator might impact the utility system and result in noncompliance with regulatory reliability requirements, but that the mitigation measures – ranging from adjusting the operation of the generator to new transmission lines – will ensure compliance.

The Phase II Interconnection Study Report included a Power Flow Reliability Assessment, including a Power Factor evaluation, a Transient Stability and Post-Transient Voltages Stability study, and a Short Circuit study, all to determine the project's impact on thermal loading, stress on existing substation facilities, and any instability in the system related to selected outages. The Power Flow Reliability Assessment included both discharging and charging analyses, and the report identified certain conditions and contingencies under which the queue cluster including the Willow Rock project would overload specific transmission facilities. The report assumes that the project will operate between a power factor of 0.9 lagging and 0.95 leading at generator terminals in accordance with the California ISO power factor requirements.

To ensure that the SCE system is brought into compliance with reliability standards after interconnection of the Willow Rock project, specific transmission upgrades are required including participation in the proposed Tehachapi Centralized Remedial Action Schemes (CRAS), the proposed Whirlwind CRAS, and the proposed New South of Vincent CRAS.

⁵ Ex. 2000, FSA, p. 4.3-4.

The Phase II Interconnection Study also included the Deliverability Assessment, concluding that no delivery network upgrades will be required for the Willow Rock Energy Storage Center.⁶

d. Cumulative Impacts

The Phase II Study Report and the Reassessment Report modeled nine generation projects, including the Willow Rock Energy Storage Center, totaling over 2215 MW. Both Reports identified the transmission cumulative impacts to the SCE transmission system, and recommended mitigation to reduce the cumulative impacts from the cluster below significant.⁷

e. Assessment

In evaluating the proposed transmission system engineering plans, we have considered whether the Willow Rock Energy Storage Center is described with sufficient detail to ensure that the transmission system can be designed and constructed safely and reliably, and consistent with LORS. We have also identified any design requirements that are necessary to address unique project features and site condition.

The record describes all major structures, systems, equipment, and associated components necessary for the transmission system. The Conditions of Certification for **Transmission System Engineering** are detailed in **Appendix A** and are summarized here:

- **TSE-1** describes the schedule, drawings, specifications, and equipment lists required to be submitted to the DCBO prior to the start of construction.
- **TSE-2** requires the names, qualifications, and registration numbers for the civil, geotechnical, design, and mechanical engineers responsible for the design and construction of the transmission system.
- **TSE-3** addresses potential discrepancies in design or construction.
- **TSE-4** describes the approval process by the DCBO for each increment of transmission system construction.
- **TSE-5** describes specific deliverables to ensure compliance with LORS, including updates to the Large Generator Interconnection Agreement (LGIA) with SCE which shall contain mitigation measures identified in the Power Flow Reliability Assessment to address direct and cumulative impacts to the system.
- **TSE-6** describes the project owner's responsibility for inspection of the transmission lines, gen-tie lines, and related structures and facilities during and after project construction.

The evidence establishes that Willow Rock project will utilize accepted industry standards, design practices, and construction methods in designing and constructing the transmission

⁶ Ex. 2000, FSA, pp. 4.3-5 – 4.3-9.

⁷ Ex. 2000, FSA, p. 4.3-9.

system. The project owner must implement the provisions of Conditions of Certification **TSE-1 through TSE-6** to ensure that design and construction activities comply with applicable LORS, and to address the direct and cumulative impacts to SCE's system reliability identified in the Phase II Study Report and the Reassessment Report.

iii. Compliance with Laws, Ordinances, Regulations and Standards

The Conditions of Certification enable both the CEC compliance project manager (CPM) and the Applicant to ensure compliance with all laws, ordinances, regulations, and standards (LORS) applicable to the engineering of the Willow Rock Energy Storage Center transmission system. The LORS below in **Table 5.D-1** are applicable to the transmission system engineering for the Willow Rock Energy Storage Center.⁸ The **Transmission System Engineering** Conditions of Certification are contained in **Appendix A** at the end of this Decision.

TABLE 5.D-1 Transmission System Engineering Conformance With Applicable LORS	
Applicable LORS	Conformance and Basis For Determination
Federal/Regional	
Federal Energy Regulatory Commission (FERC) /North American Electric Reliability Council (NERC)	Compliant. The proposed interconnection facilities will comply with Federal/Regional regulations. Conditions of Certification TSE-1 through TSE-6 ensure that construction and operation of the transmission facilities for the project will comply with applicable LORS. Condition of Certification TSE-5 will require the submittal of any updates to the LGIA at least 30 days prior to the start of construction of transmission facilities.
NERC/Western Electricity Coordinating Council (WECC) Planning Standards	Compliant. The proposed interconnection facilities will comply with Federal/Regional regulations. Conditions of Certification TSE-1 through TSE-6 ensure that construction and operation of the transmission system for the project will comply with applicable LORS. Condition of Certification TSE-5 will require the submittal of any updates to the LGIA at least 30 days prior to the start of construction of transmission facilities.
State	
California Public Utilities Commission (CPUC) General Order 95 (GO-95)	Compliant. The proposed overhead collector lines and gen-tie line will comply with CPUC GO-95. Compliance with Condition of Certification TSE-4 requires power plant switchyard, outlet line, and termination compliance with GO-95.

⁸ Ex. 2000, FSA, Table 4.3-1.

CPUC General Order 128 (GO-128)	Compliant. The proposed underground collector lines will comply with CPUC GO-128. Compliance with Condition of Certification TSE-4 requires power plant switchyard, outlet line, and termination compliance with GO-128.
California ISO Planning	Compliant. The proposed interconnection of the project will comply with California ISO planning standards. Condition of Certification TSE-5 will require the submittal of any updates to the LGIA at least 30 days prior to the start of construction of transmission facilities.
General	
National Electric Safety Code 2023 (NESC)	Compliant. The proposed overhead collector lines, underground collector lines, and gen-tie line will comply with NESC. Compliance with Condition of Certification TSE-4 requires power plant switchyard, outlet line, and termination compliance with NESC.

The evidence establishes that the transmission system engineering for the Willow Rock Energy Storage Center from the Willow Rock site to the SCE Whirlwind Substation is acceptable and in accordance with good utility practices. With implementation of the Conditions of Certification, the project will comply with all applicable LORS.

iv. Agency and Public Comment

Public comments on **Transmission System Engineering** in the Preliminary Staff Assessment (PSA) were provided by the Applicant⁹, and the suggestions were considered by CEC Staff and incorporated into the Final Staff Assessment (FSA). There was no further agency or public comment on transmission system engineering in the evidentiary record.

v. Findings of Fact

Based on the uncontroverted evidence, we make the following findings:

1. The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology.
2. The transmission system for the project includes a 230 kV substation, a power distribution center, and an approximately 19-mile-long, 230 kV single-circuit double-bundle conductor overhead generator tie line (gen-tie) with underground line segments, to connect the generator to the SCE Whirlwind Substation.

⁹ TN 264316.

3. In each of the four generating trains, power will be stepped up to 230 kV by a generator step-up (13.8/230 kV) transformer rated at 96/128/160 MVA via a dedicated 4000 Ampere (A) breaker on the low side.
4. The high side of each generator will connect via a 230 kV generator tie-line to the SCE Whirlwind Substation.
5. The above ground segments of the gen-tie line will be supported by 60- to 140-feet high steel poles with a span of approximately 200 to 800 feet.
6. The underground segments will cross the LADWP high voltage transmission corridor and other locations where the transmission corridor is congested with existing facilities. The underground line segment will be constructed with an underground cable which runs through a continuous underground duct bank.
7. The Phase II Study Report and the Reassessment Report from the California ISO modeled a queue cluster of 9 generation projects, including the Willow Rock Energy Storage Center, totaling over 2215 MW.
8. The Phase II Interconnection Study Report included a Power Flow Reliability Assessment, including a Power Factor evaluation, a Transient Stability and Post-Transient Voltages Stability study, and a Short Circuit study, and identified certain conditions and contingencies under which the queue cluster including the Willow Rock project would overload specific transmission facilities.
9. The California ISO assumes that the Willow Rock Energy Storage Center will operate between a power factor of 0.9 lagging and 0.95 leading at generator terminals in accordance with the California ISO power factor requirements.
10. The SCE system will be brought into compliance with reliability standards after interconnection of the Willow Rock project subject to the project owner's participation in required transmission upgrades, including the proposed Tehachapi Centralized Remedial Action Schemes (CRAS), the proposed Whirlwind CRAS, and the proposed New South of Vincent CRAS.
11. The Phase II Interconnection Study included a Deliverability Assessment and concluded that no delivery network upgrades will be required for the Willow Rock Energy Storage Center.
12. The California ISO identified the transmission cumulative impacts to the SCE transmission system and identified mitigation to reduce the cumulative impacts from the queue cluster below significant.

13. The Applicant will be responsible for implementing all mitigation identified by California ISO to reduce the direct and cumulative impacts identified in the Phase II Interconnection Study Report as required in its Large Generator Interconnection Agreement.
14. With implementation of Conditions of Certification **TSE-1 through TSE-6**, the Willow Rock Energy Storage Center will have no significant impacts on the existing transmission system.
15. The Willow Rock Energy Storage Center interconnection facilities are acceptable in accordance with good utility practices and will comply with applicable LORS with implementation of Conditions of Certification **TSE-1 through TSE-6**.
16. Implementation of the Conditions of Certification **TSE-1 through TSE-6** will ensure that the Willow Rock Energy Storage Center will not adversely impact the transmission grid.

vi. Conclusions of Law

1. Implementation of the Conditions of Certification **TSE-1 through TSE-6** specified in **Appendix A** of this Decision ensure that the Willow Rock Energy Storage Center's transmission interconnections will not contribute to significant adverse direct, indirect, or cumulative impacts.
2. The Conditions of Certification **TSE-1 through TSE-6** specified in **Appendix A** of this Decision ensure that the Willow Rock Energy Storage Center's electricity transmission system will be designed, constructed, and operated in conformance with applicable laws, ordinances, regulations, and standards.

5 Engineering Assessment

E. Transmission Line Safety and Nuisance

This **Transmission Line Safety and Nuisance** section analyzes the potential impacts of the Willow Rock project transmission line on radio frequency interference, audible noise, fire hazards, and the creation of hazardous and/or nuisance electrical shocks. This section also evaluates any potential risks resulting from electric and magnetic field (EMF) exposure and identifies mitigation measures that will reduce any potential impacts to insignificant levels.

i. Introduction

The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology. The project includes a proposed 19-mile long 230-kilovolt (kV) generation tie (gen-tie) route – mostly above-ground – to deliver the facility's electricity from the Willow Rock Energy Storage Center site on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southern Kern County to the Southern California Edison (SCE) Whirlwind Substation. **Figure 2-2** in Section 2 (**Project Description**) shows the Applicant's preferred route for the gen-tie line, plus options for certain segments to address feasibility and land use access issues still under consideration.

The Supplemental Application for Certification (SAFC) describes the project's transmission line including safety and nuisance issues. The Final Staff Assessment (FSA) prepared by Staff includes a substantive analysis of the transmission line safety and nuisance. Evidence on the topic of **Transmission Line Safety and Nuisance** is contained in Exhibits 1025, 1032-1033, 1040-1041, 1053, 1115, 1119, 1127, 1132, 1155, 1070, 1171, 1181, 1182, 1233, 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.¹

ii. Assessment of Transmission Line Safety and Nuisance

a. Thresholds of Significance

The laws, ordinances, regulations, and standards (LORS) listed below in **Table 5.E-1** (Transmission Line Safety and Nuisance Conformance with Applicable LORS) have been established to keep impacts below levels of potential environmental significance.²

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20.

² Ex. 2000, FSA, Table 5.13-1.

b. Gen-Tie Line

The 230 kilovolt (kV) 19-mile long transmission interconnection for the Willow Rock Energy Storage Center will consist of a single-circuit, double-bundle gen-tie line connection, with both overhead and underground line segments. Specific gen-tie right-of-way (ROW) requirements will depend on the project-selected structure type, height, span, and conductor configuration.

The overhead line segments will be constructed with 60- to 140-foot steel transmission poles, spaced approximately 200 to 800 feet apart. Phase conductors will be arranged vertically on three side arms for each circuit. The overhead line segments will be built with aluminum conductor steel reinforced (ACSR) double bundle "Falcon" conductors with a carrying capacity of approximately 1,359 amperes per conductor.

The underground line segments will be constructed with an underground cable running through a continuous underground duct bank. The underground line segment of the gen-tie will be built with parallel single conductor copper shielded cables with a carrying capacity of approximately 885 amperes per cable.

Several alternative routes are mapped including two that could potentially interconnect to the future LADWP Rosamond substation (Routes 2A and 2B). Two additional alternatives would require approximately 2.5 to 3.5 miles of additional gen-tie line length. The gen-tie line will be owned, operated, and maintained by the Applicant for the life of the project.³

Staff has concluded that the first point of grid interconnection, and extent of the CEC's certification jurisdiction, will be the dead-end structure adjacent to the SCE Whirlwind Substation.⁴

c. Compressor unit electrical configuration

The project gross output will be 520 megawatts (MW) with an auxiliary load of 20 MW. The project will generate power by utilizing four air compressor units. Each compressor unit will consist of two synchronous motors, soft started and accelerated to synchronous speed using a load commutated inverter and 1200 ampere (A) breakers. The motors are transferred to a synchronous bus and 4000A breakers once they reach synchronous speed.⁵

d. Project substation electrical configuration

For each compressor unit, the low sides of the three winding 13.8/230 kV, 105/140/175 megavolt-ampere (MVA) transformers will tie into 13.8 kV buses via a dedicated 4000A breaker. The high side of each unit transformer will connect with a 230 kV bus bar via a

³ Ex. 2000, FSA, p. 5.13-3.

⁴ Ex. 2000, FSA, p. 5.13-5.

⁵ Ex. 2000, FSA, p. 5.13-4.

motor-operated disconnect switch. The same common bus bar will link with a 152.9 MVA, .85 power factor (PF), 13.8 kV, 60 hertz (HZ) project generator via a 230/13.8 kV, 105/140/175 MVA transformer, disconnect switch, and a breaker through a 7000 A, 13.8 kV isolated phase busduct.

The outgoing SCE grid-connected 230 kV gen-tie line will connect to the project's common tubular bus bar where the project's four generating units are connected. The project substation includes capacitor banks to provide reactive power support, surge arrestors to mitigate voltage spikes, lightning arrestors to mitigate lightning strike, and grounding components to dissipate fault current and provide electrical connection for plant auxiliary loads.

The project's onsite substation electrical components, underground duct banks, and each pole of the gen-tie line will be grounded according to the National Electrical Safety Code (NESC), California Public Utilities Commission (CPUC) GO-95, and GO-128 standards and guidelines.⁶

e. Aviation Safety

CEC staff evaluated the potential for a civil aviation hazard regarding the height of the proposed project transmission lines. The public use airport nearest to the project is Rosamond Skypark. Because the project is approximately 18,400 feet northeast of the closest edge of Rosamond Skypark's nearest runway, any project structures exceeding 184 feet in height, relative to the airport's elevation, will require FAA notification pursuant to Code of Federal Regulations (CFR), Title 14, Part 77.9(b). Based on the higher elevation of the Willow Rock site relative to the airport, the planned structures of the facility and transmission poles that will measure approximately 100 feet in height will require notification to the FAA. The FAA has determined that none of the project's transmission poles will result in airspace obstruction hazards and requires the project owner notify the FAA within five days after each pole reaches its greatest height. **LAND-4** will require the project owner to submit notifications to the FAA for the structures and transmission poles, in compliance with Title 14, Part 77.9(b). Therefore, evidence establishes that the transmission lines will not pose a significant collision hazard to civil aviation or aircraft.⁷

f. Interference with Radio-Frequency Communication

Radio-frequency interference can be produced by radio noise from the electric fields on the surface of the energized conductors in a transmission system, known as corona discharge. The Willow Rock Energy Storage Center transmission lines will be built and maintained according to standard practices that minimize surface irregularities and discontinuities that contribute to corona discharge. Since the potential for such corona-related interference is usually of concern for lines of 345 kV and above, and not for 230 kV lines proposed for the Willow Rock Energy

⁶ Ex. 2000, FSA, pp. 5.13-3 – 5.13-5.

⁷ Ex. 2000, FSA, pp. 5.8-12—5.8-13.

Storage Center, the evidence does not show that corona-related radio-frequency interference or complaints are likely.⁸

g. Audible Noise

Audible noise from the surface of overhead line conductors, such as crackling, frying, hums, or hissing sounds or hum is typically generated during rainfall, and mainly from overhead lines of 345 kV or higher. Such noise is generally indistinguishable from background noise beyond 100 feet or more. Noise-reducing designs related to electric field intensity are not specifically mandated by federal or state regulations in terms of specific noise limits. However, audible noise can be limited through design, construction, or maintenance practices based on industry research and experience as effective without significant impacts on line safety, efficiency, maintainability, and reliability. A more detailed assessment of noise impacts on potentially sensitive receptors is found in Section 8(D) (**Noise and Vibration**). Altogether, the record does not have substantial evidence of significant impact from transmission noise, and no specific Conditions of Certification are necessary.⁹

h. Hazardous Shocks

Hazardous shocks could result from direct or indirect contact with an energized transmission line. Compliance with the Title 8 of California Code of Regulations, section 2700, and California Public Utilities Commission's (CPUC) GO-95 and GO-128 guidelines, as required by Conditions of Certification **TLSN-1** and **TLSN-3**, will be adequate to ensure implementation of the necessary mitigation measures and reduce hazardous shock impacts below significance.¹⁰

i. Nuisance Shocks

Nuisance shocks are caused by energy current flow at levels generally incapable of causing significant physiological harm. There are no design-specific federal or state regulations to limit nuisance shocks in the transmission line environment. Nuisance shocks are effectively minimized through grounding procedures for all metallic objects within the transmission line's rights-of-way, as specified in Condition of Certification **TLSN-3**.¹¹

j. Fire Hazards

Fire hazards from the transmission system could be caused by sparks from overhead lines, or direct contact between a line and a tree or combustible object. The project owner will be required to comply with the requirements of the existing SCE fire prevention and suppression programs for the gen-tie line. Additionally, the Willow Rock Energy Storage Center will comply

⁸ Ex. 2000, FSA, p. 5.13-6.

⁹ Ex. 2000, FSA, pp. 5.13-6 – 5.13-7.

¹⁰ Ex. 2000, FSA, pp. 5.13-7 – 5.13-8.

¹¹ Ex. 2000, FSA, p. 5.13-8.

with: Title 14, California Code of Regulations, Section 1250, Article 4, establishing fire prevention standards for electric power generation facilities; and rules and guidelines established in CPUC GO-95 for transmission line construction including clearances from other manmade and natural structures, and tree-trimming requirements to mitigate fire hazards. **TLSN-1** and **TLSN-2** will ensure compliance with these program requirements.¹²

k. Public Health and Exposure to Electric and Magnetic Fields

An electromagnetic field (EMF) is created whenever electricity flows, and exposure to them typically occurs at ground level where people may encounter such fields. Because there are no receptors adjacent to the project outside of Willow Rock Energy Storage Center workers, maintenance personnel, regulatory inspectors, and guests, public exposure to EMF is not expected to occur at the project. Specific EMF strength-reducing measures will be incorporated into the line design to meet the field strength minimization currently required by the CPUC to protect public health and exposure to EMF. The requirements in Condition of Certification **TLSN-4** for field strength measurements are intended to assess the Applicant's assumed field reduction efficiency and document the actual contribution to the project area's field exposure levels.¹³

l. Cumulative Impacts

There are no additional generating facilities identified adjacent to Willow Rock Energy Storage Center, nor are there any other generating facilities that will share a common gen-tie line with the Willow Rock Energy Storage Center to transmit power from the plant to the SCE Whirlwind Substation. Thus, there is no evidence of cumulative adverse impacts from potential transmission line safety and nuisance anticipated due to Willow Rock Energy Storage Center combined with other projects.

The evidence indicates that the Willow Rock Energy Storage Center's transmission line will be designed, built, and operated according to applicable field-reducing SCE guidelines, as currently required by the CPUC for effective field management. Any contribution to cumulative area exposures will be at levels expected for SCE lines of similar voltage and current-carrying capacity and not considered cumulatively considerable in the present health risk-based regulatory scheme.¹⁴

m. Assessment

In assessing potential transmission line safety and nuisance issues, we have considered whether the Willow Rock Energy Storage Center is described with sufficient detail to ensure that the transmission lines and related facilities can be designed, constructed, and operated

¹² Ex. 2000, FSA, p. 5.13-7.

¹³ Ex. 2000, FSA, pp. 5.13-9 – 5.13-10.

¹⁴ Ex. 2000, FSA, p. 5.13-10.

with no unmitigated impacts and consistent with LORS. We have also identified any design requirements that are necessary to address unique project features and site conditions.

The record describes all major structures, systems, equipment, and associated components necessary for the transmission lines. The Conditions of Certification for **Transmission Line Safety and Nuisance** are detailed in **Appendix A**, and are summarized here:

- **TLSN-1** requires construction of the transmission line consistent with all applicable LORS.
- **TLSN-2** requires compliance with GO-95 to ensure that the transmission line route is kept free of combustible material.
- **TLSN-3** requires grounding of all metallic objects within the transmission line route per industry standards.
- **TLSN-4** requires the Applicant to estimate and validate the line EMF at the edge of rights-of-way according to American National Standards Institute (ANSI)/ Institute of Electrical and Electronics Engineers (IEEE) standards.

The evidence establishes that Willow Rock project will utilize accepted industry standards, design practices, and construction methods in designing, constructing, and operating the transmission line and related facilities. The project owner must implement the provisions of Conditions of Certification **TLSN-1 through TLSN-4** to ensure that design, construction and operation activities comply with applicable LORS.

iii. Compliance with Laws, Ordinances, Regulations and Standards

The Conditions of Certification enable both the CEC compliance project manager (CPM) and the Applicant to ensure compliance with all laws, ordinances, regulations, and standards (LORS) applicable to the engineering of the Willow Rock Energy Storage Center transmission system. The LORS below in **Table 5.E-1** are applicable to the transmission line safety and nuisance considerations for the Willow Rock Energy Storage Center.¹⁵ The **Transmission Line Safety and Nuisance** Conditions of Certification are contained in **Appendix A** at the end of this Decision.

TABLE 5.E-1 Conformance With Applicable LORS For Transmission Line Safety And Nuisance	
Applicable LORS	Conformance and Basis for Determination
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR), Safe, Efficient Use, and Preservation of the Navigable Airspace. Describes the criteria for determining the need for a Federal Aviation Administration (FAA) "Notice of Proposed	Compliant. The applicant notified the FAA of the transmission poles by submitting Form FAA 7460-1, "Notice of Proposed Construction or Alteration", for each structure. The FAA issued Determinations of No Hazard for each pole, with a requirement that the project owner notify the FAA within 5 days after

¹⁵ Ex. 2000, FSA, Table 5.13-1.

TABLE 5.E-1 Conformance With Applicable LORS For Transmission Line Safety And Nuisance

Applicable LORS	Conformance and Basis for Determination
Construction or Alteration” in cases of potential obstruction hazards.	each pole reaches its greatest height. Condition of Certification LAND-4 will ensure the project owner complies with this requirement and submits FAA notifications for any new or relocated transmission poles. LAND-4 will also ensure the project owner submits FAA notification for the approximately 100-foot-tall structures on the main project site.
Title 47, Part 15 of the CFR, Section 205, Federal Communications Commission (FCC). Prohibits the operation of devices that can interfere with radio-frequency communication.	Compliant. The applicant will not use any equipment that emits restricted frequency bands given under Section 15.205.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52). Governs the construction and operation of power and communications lines to prevent or mitigate interference.	Compliant. The applicant will not construct or operate transmission or communication lines for the prevention or mitigation of inductive interference.
California Public Utilities Commission (CPUC) General Order 95 (GO-95) and GO-128, Rules for Overhead and Underground Electric Line Construction. Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.	Compliant. The applicant will construct gen-tie line structures with a height of less than 90 feet to satisfy the GO-95 requirement. All gen-tie structures, components of the substation, and switchyard will be constructed according to the GO-95 and GO-128 electrical grounding standards. Underground circuits of the project will utilize the duct banks to minimize the EMF effects and satisfy the GO-128 standards. The applicant will utilize the lighting and surge arresters in the substations and switchyard as necessary, to dissipate the fault currents and voltages due to lighting and voltage surges.
Title 8, California Code of Regulations (CCR), sections 2700 <i>et seq.</i> High Voltage Safety Orders. Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.	Compliant. All gen-tie structures, overhead and underground circuits, substations, and switchyard components will be constructed according to Title 8 High Voltage Safety Orders.
National Electrical Safety Code (NESC). Specifies grounding procedures to limit nuisance shocks. It also specifies minimum conductor ground clearances.	Compliant. All gen-tie structures, components of the substation, and switchyard will be constructed according to the NESC standards and GO-95 and GO-128 grounding standards.

TABLE 5.E-1 Conformance With Applicable LORS For Transmission Line Safety And Nuisance

Applicable LORS	Conformance and Basis for Determination
	Overhead and underground grounding circuits will be designed with proper conductor sizes to dissipate the fault current. The Applicant will select proper conductor sizes to satisfy the NESC standards. All the components of the substation or switchyard will be grounded by utilizing the underground grounding grid. The Applicant will assess the soil resistivity test for the project's substation, switchyard sites, and transmission line path.
CPUC GO-131-E (effective January 30, 2025). Rules for Planning and Construction of Electric Generation, Line, and Substation Facilities in California specify application and noticing requirements for new line construction including EMF reduction.	Compliant. The project will be built with proper transmission line clearance with the ground and satisfy GO-131-E transmission paths right-of-way requirements. Underground circuits will utilize duct banks to minimize the EMF and de-rated ampacity of conductors.
CPUC Decision D.93-11-013. Specifies CPUC requirements for reducing electric and magnetic fields.	Compliant. The CPUC requires the utilities to undertake no-cost EMF mitigation measures and implement low-cost mitigation measures to the extent approved as part of a project's certification process. "Low-cost" was defined to be within the range of 4% of the total project cost but the Commission specified that this 4% benchmark is not an absolute cap.
CPUC Decision D.06-01-042. Re-affirms CPUC EMF Policy in D.93-11-013.	Compliant. Re-affirms stated above requirement.
Title 14, Cal. Code Regs., sections 1250-1258, Fire Prevention Standards for Electric Utilities. Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.	Compliant. The applicant will follow the Fire Prevention Standards under sections 1250-1258 in the design, construction, and operation of the transmission system for the Willow Rock Energy Storage Center.
Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations". Specifies the guidelines for grounding-related practices within the ROW and substations.	Compliant. Erecting a fence around the substation and switchyard and establishing proper transmission line clearance will facilitate a safety clearance zone. All the components of the substation or switchyard and fence will be grounded by utilizing the underground grounding grid.

TABLE 5.E-1 Conformance With Applicable LORS For Transmission Line Safety And Nuisance

Applicable LORS	Conformance and Basis for Determination
	Maintain the proper rights-of-way of the transmission paths, and substations to minimize the flashover and EMF effects.
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines. Specifies standard procedures for measuring electric power frequency electric and magnetic fields from an operating electric line.	Compliant. Erecting a fence around the substation or switchyard and proper transmission line clearance will facilitate a safety clearance zone. All the components of the substation or switchyard and fence would be grounded by utilizing the underground grounding grid. Maintain the proper rights-of-way of the transmission paths, and substations to minimize the flashover and EMF effects.

Therefore, we find that the transmission line design, construction, and operation for the Willow Rock Energy Storage Center from the generator to the SCE Whirlwind Substation are acceptable and in accordance with good utility practices. With implementation of the Conditions of Certification, the project will comply with all applicable LORS.

iv. Agency and Public Comment

Public comments on the **Transmission Line Safety and Nuisance** in the Preliminary Staff Assessment (PSA) were provided by the Applicant¹⁶, and the suggestions were considered by CEC Staff and incorporated into the Final Staff Assessment (FSA). There was no further agency or public comment on transmission line safety and nuisance in the record.

v. Findings of Fact

Based on the uncontroverted evidence, we make the following findings:

1. The transmission system for the Willow Rock Energy Storage Center includes a 230 kV substation, a power distribution center, and an approximately 19-mile-long, 230 kV single-circuit double-bundle conductor overhead generator tie-line (gen-tie) with underground line segments, to connect the generator to the SCE Whirlwind Substation.
2. The Willow Rock Energy Storage Center transmission line will not cause significant audible noise or radio-frequency interference.

¹⁶ TN 264316.

3. Compliance with CPUC and SCE fire prevention and hazardous/nuisance shock prevention requirements will ensure that the Willow Rock Energy Storage Center transmission line will not result in significant public health and safety impacts.
4. Specific EMF strength-reducing measures will be incorporated into the line design to meet the field strength minimization currently required by the CPUC and SCE to protect public health and exposure to EMF.
5. The Willow Rock Energy Storage Center's transmission line will not result in significant impacts to public health and safety or cause significant direct, indirect, or cumulative impacts in the areas of radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

vi. Conclusions of Law

We conclude that with implementation of Conditions of Certification **TLSN-1 through TLSN-4** specified in **Appendix A** of this Decision, the transmission lines and related facilities for the Willow Rock Energy Storage Center will comply with all applicable laws, ordinances, regulations, and standards relating to **Transmission Line Safety and Nuisance**.

6 Public Health and Safety

Site preparation, construction, and operation of the Willow Rock Energy Storage Center will create combustion products and utilize certain hazardous materials that pose health risks to the general public and to the workers at the facility. The following sections discuss the regulatory programs, standards, protocols, and analyses pertaining to these issues, as they relate to **Climate Change and Greenhouse Gas Emissions, Air Quality, Public Health, Worker Safety and Fire Protection, Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire** and **Solid Waste Management**.

A. Climate Change and Greenhouse Gas Emissions

The California Environmental Quality Act (CEQA) Guidelines indicate that the impact analysis for greenhouse gas (GHG) emissions is global in nature, and the focus of the lead agency's analysis should be on the project's effect on climate change, rather than simply focusing on the quantity of emissions and how that quantity of emissions compares to statewide or global emissions. CEQA Guidelines address GHG emissions or their effects through feasible mitigation measures.¹

i. Introduction

Willow Rock would not routinely operate combustion units or emit greenhouse gas (GHG) into the atmosphere. The project would be an advanced compressed air energy storage (A-CAES) facility. However, activities during construction will cause GHG emissions due to fuels used by the construction vehicles and equipment. After construction, substantial quantities of GHG emissions would only occur from the stationary internal combustion engines for maintenance and readiness testing or in the emergency event of a fire or power outage. Other than the operation of the generators for testing and maintenance, there will be no additional substantial sources of GHG emissions from the maintenance or operation of Willow Rock.²

Evidence on the topic of **Climate Change and Greenhouse Gas Emissions** is contained in Exhibits 1025, 1032-1033, 1039-1041, 1052-1055, 1057, 1070, 1111-1112, 1119, 1132, 1135, 1153, 1155, 1233, 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.³

¹ Ex. 2000, pp. 5.3-6 – 5.3-8; see Cal. Code Reg., tit. 14, §§ 15064, 15130, 15183, and 15183.5.

² Ex. 2000, pp. 5.3-9, 5.3-10, and 5.3-12.

³ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

ii. Environmental Analysis of Climate Change and Greenhouse Gas Emissions

a. Thresholds of Significance

The issue presented is whether GHG emissions from Willow Rock would result in a significant environmental impact. The rules governing our analysis are found in the CEQA Guidelines.⁴ Under CEQA, lead agencies may rely on an adopted statewide, regional, or local plan in evaluating a project's GHG emissions.⁵ California's regulatory setting for GHG emissions ensures that most of the existing and foreseeable GHG sources in the electric power sector are subject to one or more programs aimed at reducing GHG emissions.⁶

The Eastern Kern Air Pollution Control District (EKAPCD) has adopted a GHG guideline including a GHG emissions significance threshold of 25,000 tons per year. Operational GHG emissions less than this threshold would be considered insignificant.⁷ EKAPCD has not adopted construction-related thresholds for GHG. Therefore, only operational-related significance thresholds are presented in this section.⁸

b. Regulatory Setting

Achieving the renewable energy targets mandated by the Renewables Portfolio Standard (RPS) is critical to California achieving its GHG targets and statewide carbon neutrality as established by Assembly Bill (AB) 1279. The California Air Resources Board (CARB) 2022 Climate Change Scoping Plan identifies decarbonizing the electricity sector as a crucial pillar of achieving carbon neutrality set forth by AB 1279 and Executive Order B-55-18. The California Global Warming Solutions Act of 2006 (AB 32) and Senate Bill (SB) 32 of 2016 codified the GHG emissions target to 40 percent below the 1990 level by 2030. Subsequently, California's Clean Energy and Pollution Reduction Act of 2015 (SB 350) set ambitious 2030 targets for energy efficiency and renewable electricity to reduce GHG emissions across the energy and transportation sectors. Senate Bill 350 also connects long-term planning for electricity needs with the state's climate targets with CARB establishing 2030 GHG emissions targets for the electricity sector in general. The current RPS was signed into law in September 2018 with SB 100 establishing the goals of 50 percent renewable energy resources by 2026 and 60 percent

⁴ Cal. Code Reg., tit. 14, §§ 15064, 15130, 15183, and 15183.5.

⁵ Ex. 2000, FSA, pp. 5.3-6 (citing CEQA Guidelines, Cal. Code Reg., tit. 14, § 15064.4, subd. (b)(3)).

⁶ Ex. 2000, FSA, pp. 5.3-6 – 5.3-8; see Cal. Code Reg., tit. 14, §§ 15064, 15130, 15183, and 15183.5.

⁷ Ex. 2000, FSA, p. 5.3-9.

⁸ Ex. 2000, FSA, p. 5.3-10.

renewable energy resources by 2030. Senate Bill 100 also sets a target for California to achieve a GHG-free energy supply by December 31, 2045.⁹

The Short-Lived Climate Pollutant Strategy (SLCP) was integrated into CARB's 2017 Scoping Plan Update leading to the adoption of Prohibitions on Use of Certain Hydrofluorocarbons in Stationary Refrigeration, Stationary Air-Conditioning and Other End-Uses.¹⁰ Senate Bill 1206 prohibits a person from offering for sale or distribution bulk hydrofluorocarbons (HFCs) or bulk blends containing HFCs that exceed specified Global Warming Potential (GWP) limits. The Applicant will comply with the HFC prohibition regulation by using non-prohibited refrigerants.¹¹

Pursuant to AB 32, CARB adopted a regulation¹² to reduce sulfur hexafluoride (SF6) emissions in gas insulated equipment (GIE), including switchgear used in the electricity sector's transmission and distribution system. The regulation includes a phase-out schedule in stages between 2025 and 2033 for new SF6 GIE. To comply with the SF6 Regulation, the Applicant will endeavor to incorporate non-SF6 insulated circuit breakers in the final design consistent with the phase-out requirements.¹³ Alternative circuit breakers are currently being evaluated. If a non-SF6 alternative is only available from a single supplier then the regulation provides for an exemption from this requirement. Either conforming to non-SF6 insulated circuit breaker specifications or a statement that the project will qualify for an exemption will be provided prior to commencement of construction.¹⁴

Kern County has not yet prepared and adopted a GHG reduction plan for the unincorporated areas of the county. However, the project is not anticipated to emit a significant amount of GHG emissions, as described above, and will be well below the project-level threshold of significance of 25,000 short tons of carbon dioxide equivalent (CO2e) per year.¹⁵

c. Construction

The proposed construction activities will include mobilizing construction equipment, crews, and materials, excavating, and installing concrete foundations and equipment. These activities during construction will cause GHG emissions due to fuels used by the construction vehicles

⁹ Ex. 2000, FSA, pp. 5.3-12 – 5.3-13.

¹⁰ Cal. Code Regs., tit. 17, Div. 3, Ch. 1, Subch. 10 Climate Change, Art. 4, Subart. 5, § 95371, *et seq.*

¹¹ Ex. 2000, FSA, p. 5.3-13.

¹² Cal. Code Regs., tit. 17, §§ 95350 to 95359.

¹³ Cal. Code Regs., tit. 17, § 95352.

¹⁴ Ex. 2000, FSA, p. 5.3-13.

¹⁵ Ex. 2000, FSA, p. 5.3-13.

and equipment. Equipment and motor vehicles will directly emit carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O) due to fuel use and combustion.¹⁶

Approximately 1.3 million cubic yards of crushed rock will be extracted during construction of the cavern. The extracted rock may be stored onsite in the form of an architectural berm around portions of the Willow Rock site or transported offsite for commercial use or permanent offsite storage. There will be a rock crushing facility and concrete batch plant to support cavern construction and excavated rock management. The rock crushing facility will operate for 22 months while the concrete batch plant will operate for 12 to 15 months. Both will be powered either by locally provided power or United States Environmental Protection Agency (USEPA) Tier 4 diesel generators. The overall percentage of rock crushed will depend on whether the excavated rock will be built into an architectural berm onsite or hauled offsite. If hauled offsite, additional rock crushing and transport of the rock will result in significantly more GHG emissions for the project option without the berm.¹⁷

The resulting GHG emissions generated onsite and offsite during the peak 12-month period over the entire 60-month construction period will be approximately 11,463.5 metric tons of CO₂ equivalent (MTCO₂e) with the architectural berm and 30,002.6 MTCO₂e without, based on use of the California Emissions Estimator Model® (CalEEMod). To capture the long-term effects of the one-time, short-term construction GHG emissions, this worst-case analysis averages the construction effects over a 50-year life of the project. On this basis, the overall construction GHG emissions amortized over 50 years will be equivalent to an annualized rate of 229.3 MTCO₂e per year with the berm and 600.1 MTCO₂e per year without the berm. These project-level emissions will cease at the conclusion of construction.¹⁸

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

d. Operation

Willow Rock will be an A-CAES energy storage facility that will not routinely operate combustion units or emit GHG to the atmosphere. After construction, the only substantial direct GHG emissions would occur from the stationary internal combustion engines for maintenance and readiness testing or in the emergency event of a fire or power outage.¹⁹ The quantity of GHG emitted directly by the emergency engines supporting the A-CAES system under a worst-case scenario would be 1,225 tons per year.²⁰

¹⁶ Ex. 2000, FSA, p. 5.3-9.

¹⁷ Ex. 2000, FSA, p. 5.3-9.

¹⁸ Ex. 2000, FSA, pp. 5.3-9 – 5.3-10.

¹⁹ Ex. 2000, FSA, pp. 5.3-9, 5.3-10, and 5.3-12.

²⁰ Ex. 2000, FSA, p. 5.3-11.

Willow Rock could use electricity from GHG emitting sources to charge its A-CAES energy storage system, but its net effect on GHG emissions in the context of the whole electricity sector will depend on the GHG emissions intensity of the sources used to charge it and the sources the project displaces.²¹ Willow Rock will have two modes of operation. The first will be Charge Mode (compression/energy storage) using electricity from the electrical grid to power its four compression trains to store energy in the form of compressed air. The second mode will be Discharge Mode (decompression/power production) using the compressed air to power its turbine generators to provide electricity to the grid when the grid requires additional load demand support.²²

The facility will typically cycle between Charge Mode lasting approximately 14 hours and Discharge Mode lasting 8 hours up to nameplate capacity. The energy that the A-CAES system will be storing will be drawn from non-peak power primarily generated by nearby solar facilities. It is likely that the A-CAES system will be charged midday, during excess solar renewable energy generation, when energy is the cheapest, and will be discharged during periods when energy is scarcer, more expensive, and when there will be little to no renewable energy generation. By storing energy at times of excess renewable generation and discharging when conventional natural gas-fired power plants would otherwise be dispatched, the energy storage system will provide a combustion-free source of stored energy during times when natural gas-fired power plants would cause higher GHG emissions. The A-CAES system has a round-trip efficiency of 55 to 60 percent; this means that 0.55 to 0.60 megawatt hours (MWh) will be discharged for every 1 MWh delivered by SCE to Willow Rock during charging.²³

The emissions from energy delivered from the grid to fully charge the A-CAES system (1,187 MTCO₂e), including round-trip losses, will be less than the typical emissions that would otherwise be emitted by a natural gas-fired power plant producing the equivalent 4,000 MWh of supply (1,540 to 2,096 MTCO₂e). This calculation is based on the GHG emissions intensities of the electric utility supply SCE that will be stored during charging against typical estimated emission factors for natural gas-fired power plants likely to be dispatched when energy is scarce. Thus, the Willow Rock A-CAES system will have the overall beneficial effect of displacing GHG emissions from energy generation. It is estimated that the displaced GHG emissions may range from 136,881 to 352,470 MTCO₂e annually. The displaced GHG emissions will be higher if the project uses non-peak power produced from solar facilities for charging.²⁴

²¹ Ex. 2000, FSA, pp. 5.3-10 – 5.3-11.

²² Ex. 2000, FSA, pp. 5.3-10, 5.5-4.

²³ Ex. 2000, FSA, p. 5.3-10.

²⁴ Ex. 2000, FSA, pp. 5.3-10 – 5.3-11.

e. Impact Assessment and Mitigation

We evaluate the potential impacts of GHG emissions associated with construction and operation of Willow Rock in the context of the whole electricity sector considering the two significance criteria from CEQA Guidelines Appendix G. The conclusions are summarized in **Table 6.A-1** (Climate Change and Greenhouse Gas Emissions) and discussed below.

TABLE 6.A-1 Climate Change And Greenhouse Gas Emissions²⁵				
CEQA Air Quality Checklist Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b. Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

1. Willow Rock Will Not Cause GHG Emissions, Either Directly or Indirectly, That May Have a Significant Impact on the Environment.

A. Construction

The Eastern Kern Air Pollution Control District (EKAPCD) has not adopted construction-related thresholds for GHG. But the annualized construction emissions of Willow Rock amortized over the 50-year project life would be at most 600.1 MTCO₂e per year without the berm,²⁶ which is less than three percent of the EKAPCD threshold of 25,000 tons per year.²⁷

Moreover, as discussed as to operational emissions below, the amount of GHG emissions Willow Rock is estimated to displace from dirtier sources in a year — at least 136,881 MTCO₂e — will avoid far more GHG emissions per year than a year of construction, even the 30,002.6 MTCO₂e emitted during its peak 12-month construction period without a berm. And construction emissions will cease at the conclusion of construction.²⁸ Thus, Willow Rock

²⁵ Environmental checklist established by CEQA Guidelines, Appendix G, greenhouse gas emissions.

²⁶ Ex. 2000, FSA, p. 5.3-10.

²⁷ Ex. 2000, FSA, p. 5.3-9.

²⁸ Ex. 2000, FSA, pp. 5.3-9 – 5.3-11.

construction will not cause GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

B. Operation

After construction, the only substantial direct GHG emissions from Willow Rock will occur from its stationary internal combustion engines for maintenance and readiness testing or in the emergency event of a fire or power outage.²⁹ The quantity of GHG emitted directly by the emergency engines supporting the A-CAES system under a worst-case scenario would be 1,225 tons per year.³⁰ Other than the operation of the generators for testing and maintenance, there are no additional substantial direct sources of GHG emissions from the maintenance or operation of Willow Rock.³¹ The applicant estimated the GHG emissions from refrigerant leakage to be 8.07 MTCO₂e per year. In addition, staff estimated that the GHG emissions from operation and maintenance vehicles would be 187.8 MTCO₂e per year. These operational emissions will comply with and be less than EKAPCD's adopted project-specific threshold of significance, which is annual emissions of less than 25,000 tons per year.³²

Moreover, the A-CAES system will have a net beneficial effect on GHG emissions from the whole electricity sector by displacing GHG emissions from higher emitting energy generation. Displaced, and thus avoided, GHG emissions is estimated to be 136,881 to 352,470 MTCO₂e annually. The displaced GHG emissions will be higher if the project uses non-peak power produced from solar facilities for charging.³³

Thus, because Willow Rock will cause direct emissions at levels less than the applicable threshold and will provide overall beneficial effects by displacing GHG emissions from gas-fired power plants used for energy generation, this impact will be less than significant.³⁴

2. Willow Rock Will Not Conflict With Any Applicable Plan, Policy, or Regulation Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases.

A. Construction

The project's short-term construction GHG emissions will not interfere with the state's ability to achieve long-term GHG emissions reduction goals. Construction vehicles and the supplies of transportation fuels used during construction of the project are required to comply with the applicable GHG reduction programs for mobile sources and suppliers of transportation fuels.

²⁹ Ex. 2000, FSA, pp. 5.3-9 – 5.3-12.

³⁰ Ex. 2000, FSA, p. 5.3-11.

³¹ Ex. 2000, FSA, pp. 5.3-9 – 5.3-12.

³² Ex. 2000, FSA, p. 5.3-11.

³³ Ex. 2000, FSA, p. 5.3-11.

³⁴ Ex. 2000, FSA, p. 5.3-11.

Construction activities of the project will conform to relevant programs and recommended actions detailed in CARB's Scoping Plan.³⁵

The EKAPCD has not adopted construction-related thresholds for GHG. But the annualized construction emissions of Willow Rock amortized over the 50-year project life will be at most 600.1 MTCO₂e per year without the berm,³⁶ which is less than three percent of the EKAPCD threshold of 25,000 tons per year.³⁷ Moreover, as discussed above, Willow Rock operation will displace more GHG emissions than all direct emissions plus all emissions that will be produced during construction amortized over a 50-year life of the project.³⁸

To comply with the SF₆ Regulation, the Applicant will endeavor to incorporate non-SF₆ insulated circuit breakers in the final design consistent with the phase-out requirements.³⁹ Alternative circuit breakers are currently being evaluated. If a non-SF₆ alternative is only available from a single supplier, then the regulation provides for an exemption from this requirement. Either conforming to non-SF₆ insulated circuit breaker specifications or a statement that the project will qualify for an exemption will be provided prior to commencement of construction.⁴⁰

Thus, Willow Rock construction will not conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing GHG emissions.

B. Operation

Kern County has not yet prepared and adopted a GHG reduction plan for the unincorporated areas of the county. However, the project is not anticipated to emit a significant amount of direct GHG emissions, as described above, which would be well below the project-level threshold of significance of 25,000 short tons of CO₂e per year.⁴¹

The mix of power serving the end-use customers will not change because of the proposed project. The proposed project will improve the infrastructure used in delivery of SCE's energy supply and will not affect SCE's ability to supply renewable energy. By installing long-duration A-CAES, the project will improve SCE's reliability and flexibility in delivery of electricity in compliance with California's RPS requirements. As described above, the advanced compressed air energy storage system will likely be charged mid-day, when there will be excess solar energy generation, and will be discharged to the grid at night, when the energy supply is reliant on fossil fuel generation, thereby displacing the need for GHG-emitting energy

³⁵ Ex. 2000, FSA, p. 5.3-12.

³⁶ Ex. 2000, FSA, p. 5.3-10.

³⁷ Ex. 2000, FSA, p. 5.3-9.

³⁸ Ex. 2000, FSA, pp. 5.3-9 – 5.3-11.

³⁹ Cal. Code Regs., tit. 17, § 95352.

⁴⁰ Ex. 2000, FSA, p. 5.3-13.

⁴¹ Ex. 2000, FSA, p. 5.3-13.

sources.⁴² Displaced, and thus avoided, GHG emissions is estimated to be 136,881 to 352,470 MTCO₂e annually.⁴³ Increasing the use of renewable generation in conjunction with energy storage is important to the overall objective of decarbonizing the electricity sector. Moreover, the proposed project will not conflict with local, EKAPCD, State, or federal regulations pertaining to GHG emissions. Therefore, this impact will be less than significant.⁴⁴

3. Cumulative Impacts

The impact analysis for GHG emissions is global in nature, and the project's GHG emissions are considered in the broad context of global climate change. The focus of this analysis is to disclose the project's effect on climate change, while presenting the quantity of GHG emissions. A project's incremental contribution to a cumulative GHG emissions effect may be determined not to be significant if the effects of the project are not cumulatively considerable and the project complies with the requirements of the state's long-term climate goals or strategies.⁴⁵

Willow Rock will lead to a net reduction in GHG emissions across California's electricity system, and the GHG emissions related to the project will not conflict with any plans, policies, or regulations adopted for the purpose of reducing the emissions of GHGs. Therefore, the project's GHG emissions will not be cumulatively considerable.⁴⁶

iii. Compliance with Laws, Ordinances, Regulations and Standards

The Conditions of Certification enable both the CEC compliance project manager (CPM) and the Applicant to ensure compliance with all laws, ordinances, regulations, and standards (LORS) applicable to the GHG emissions from the construction and operation of the Willow Rock Energy Storage Center. The LORS below in **Table 6.A-2** are applicable to the Willow Rock Energy Storage Center.⁴⁷

TABLE 6.A-2 Climate Change And Greenhouse Gas Emissions Conformance With Applicable LORS		
Applicable LORS	Description of LORS	Conformance and Basis for Determination
Federal		
40 Code of Federal Regulations (CFR) Part 98	Requires mandatory reporting of GHG emissions for facilities that emit more than 25,000	Not applicable. Project will not emit more than 25,000 MTCO ₂ e per year.

⁴² Ex. 2000, FSA, p. 5.3-13.

⁴³ Ex. 2000, FSA, p. 5.3-11.

⁴⁴ Ex. 2000, FSA, pp. 5.3-13 – 5.3-14.

⁴⁵ Ex. 2000, FSA, p. 5.3-14 (citing Cal. Code Regs., tit. 14, § 15064.4.)

⁴⁶ Ex. 2000, FSA, p. 5.3-14.

⁴⁷ Ex. 2000, FSA, pp. 5.3-14 – 5.3-15.

TABLE 6.A-2 Climate Change And Greenhouse Gas Emissions Conformance With Applicable LORS

Applicable LORS	Description of LORS	Conformance and Basis for Determination
	metric tons of CO2 equivalent emissions per year. This requirement is not triggered by this facility.	
State		
Scoping Plan (2014, 2017, and 2022)	Part of the Legislature's direction to CARB under AB 32 is to develop a scoping plan that serves as a statewide planning document to coordinate the main strategies California will use to reduce GHG emissions that cause climate change. CARB approved the AB 32 Climate Change Scoping Plan (Scoping Plan) in 2008 and released updates in 2014, 2017, and 2022.	Compliant. The proposed compressed air energy storage facility will store electricity and displace fossil-fueled generation as resulting in a net beneficial effect on GHG emissions from the whole electricity sector.
CARB SF6 Reduction Requirements (Cal. Code Regs., tit. 17, §§ 95350 to 95359.)	Reduce SF6 emissions in gas insulated switchgear used in the electricity sector's transmission and distribution system as an early action measure pursuant to AB 32 and includes a phase-out schedule in stages between 2025 and 2033 for new SF6 gas-insulated equipment.	Compliant. The project will comply with GHG emissions reduction requirements through conformance with reporting and phase-out requirements of this regulation.
CARB Cap-and-Trade Program	The CARB's Scoping Plan pursuant to AB 32 includes a range of GHG emissions reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based compliance mechanisms, such as the cap-and-trade program.	Not applicable. Project will not emit GHG in quantities that could trigger cap-and-trade program applicability.
CARB Mandatory Reporting. California Code of Regulations, Title 17, Subchapter 10, Article 2, sections 95100 <i>et. seq.</i>	These CARB regulations implement mandatory GHG emissions reporting as part of AB 32.	Not applicable. Project will not generate electricity using fossil fuels.

TABLE 6.A-2 Climate Change And Greenhouse Gas Emissions Conformance With Applicable LORS

Applicable LORS	Description of LORS	Conformance and Basis for Determination
Local		
Climate Action Plan	The Eastern Kern APCD uses the Climate Change Action Plan from the San Joaquin Valley APCD. In 2009, the SJVAPCD adopted the Guidance for 2020 GHG reduction targets. Compliance with these Best Performance Standards (BPS) or demonstration of 29 percent below business-as-usual (BAU) conditions would show compliance. However, these are no longer applicable to determining the significance of GHG impacts for projects developed after 2020. The guidance does not limit a lead agency's authority in establishing its own thresholds for determining the significance of project-related GHG impacts.	Compliant. The compressed air energy storage facility will store electricity and displace fossil-fueled generation as resulting in a net beneficial effect on GHG emissions from the whole electricity sector.
Kern Council of Governments, Regional Transportation Plan/Sustainable Community Strategy (RTP/SCS)	The 2022 RTP includes GHG emissions quantification for vehicle-miles traveled in the region to achieve GHG reduction targets for 2035. The RTP/SCS lays out how the region will meet certain transportation-related GHG reduction targets while considering all economic segments of the population, net migration into the region, population growth, household formation, and employment growth.	Compliant. The 2022 RTP/SCS forecasts growth in population and employment in the region estimates that employment while achieving GHG reductions per capita. Construction workers and operation and maintenance full-time employees will represent additional temporary and up to 40 full-time equivalent permanent jobs within the RTP/SCS growth projections.

Willow Rock will be an A-CAES energy storage facility that will not routinely operate combustion units or emit GHGs to the atmosphere and will displace fossil-fueled generation as resulting in a net beneficial effect on GHG emissions from the whole electricity sector.⁴⁸ The

⁴⁸ Ex. 2000, FSA, pp. 5.3-9 – 5.3-12.

evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of Willow Rock will comply with all applicable LORS regarding GHGs.⁴⁹

iv. Agency and Public Comment

No comments have been received regarding the topic of Climate Change and Greenhouse Gas Emissions.⁵⁰

v. Findings of Fact

Based on the uncontroverted evidence, the CEC makes the following findings:

1. The GHG emissions from constructing Willow Rock, including onsite and offsite emissions during the peak 12-month period over the entire 60-month construction period, will be approximately 11,463.5 MTCO₂e with the architectural berm and 30,002.6 MTCO₂e without. These GHG emissions amortized over the 50-year life of the project will be equivalent to an annualized rate of 229.3 MTCO₂e per year with the berm and 600.1 MTCO₂e per year without the berm.
2. After construction, the only substantial direct GHG emissions from Willow Rock will be the stationary internal combustion engines for maintenance and readiness testing or in the emergency event of a fire or power outage, which will produce 1,225 tons per year under a worst-case scenario. Additionally, direct GHG emissions will include refrigerant leakage of 8.07 MTCO₂e per year and from operation and maintenance vehicles of 187.8 MTCO₂e per year.
3. The significance threshold of 25,000 tons per year, from the EKAPCD guideline, is an appropriate threshold for Willow Rock.
4. GHG emissions from Willow Rock operation should be assessed in the context of the operation of the entire electricity system of which the plant is an integrated part.
5. Construction-related GHG emissions will not cause a significant environmental impact because they are limited in duration, because construction emissions amortized over a 50-year life of the project and combined with direct GHG emissions from operation will together be below the significance threshold of 25,000 tons per year, and because construction emissions amortized over the 50-year life of the project will be less than the GHG emissions displaced per year by the project's operations in the context of the whole electricity sector.

⁴⁹ Ex. 2000, FSA, pp. 5.3-14 – 5.3-15.

⁵⁰ Ex. 2000, FSA, p. 5.3-15.

6. When it operates, the Willow Rock A-CAES will displace generation from higher GHG emitting power plants. The GHG emitted to fully charge the Willow Rock A-CAES system from the grid will be 1,187 MTCO₂e, including round-trip losses. This is less than the typical emissions that would otherwise be emitted by a natural gas-fired power plant producing the equivalent 4,000 MWh of supply (1,540 to 2,096 MTCO₂e). Emissions will be less if the project uses non-peak power produced from solar facilities for charging.
7. Operation of Willow Rock will reduce GHG emissions from the electricity system overall, likely ranging from 136,881 to 352,470 MTCO₂e annually. The displaced GHG emissions will be higher if the project uses non-peak power produced from solar facilities for charging.
8. Willow Rock will result in a cumulative reduction in GHG emissions from the state's power plants overall and will not worsen current conditions.
9. Willow Rock operation will displace more GHG emissions than all direct emissions plus all emissions that will be produced during construction amortized over the 50-year life of the project.
10. When considered on a system-wide basis, GHG emissions related to the Willow Rock project overall will reduce GHG emissions and will therefore not cause a significant environmental impact.
11. GHG emissions related to Willow Rock will not result in impacts that are cumulatively considerable.
12. Willow Rock will improve the infrastructure used in delivery of SCE's energy supply and will not affect SCE's ability to supply renewable energy.
13. Willow Rock, as a long-duration A-CAES, will improve SCE's reliability and flexibility in delivery of electricity in compliance with California's RPS requirements.
14. Increasing the use of energy storage in conjunction with renewable generation is important to the overall objective of decarbonizing the electricity sector.
15. Willow Rock employment will be within the 2022 RTP/SCS growth projections.
16. Construction or operation of Willow Rock will not conflict with local, EKAPCD, State, or federal regulations pertaining to GHG emissions.

vi. Conclusions of Law

1. Construction-related GHG emissions of Willow Rock will not cause a significant environmental impact.
2. Operation-related GHG emissions of Willow Rock will not cause a significant environmental impact. The operational effect of Willow Rock will be to reduce GHG emissions from the electricity sector overall.
3. Operation of Willow Rock will help California utilities meet their RPS.
4. Construction and operation of Willow Rock will comply with all applicable laws, ordinances, regulations, and standards regarding GHG emissions.

6 Public Health and Safety

B. Air Quality

i. Introduction

The construction and operation of the Willow Rock Energy Storage Center would emit combustion products and use certain hazardous materials that could expose the general public and on-site workers to potential health effects. This section on **Air Quality** examines whether Willow Rock would comply with applicable state and federal air quality laws, ordinances, regulations, and standards (LORS), whether it would result in significant air quality impacts, and whether the proposed mitigation measures would reduce potential impacts to insignificant levels.

Evidence on the topic of **Air Quality** is contained in Exhibits 1025, 1032-1033, 1039-1041, 1052-1055, 1057, 1070, 1111-1112, 1119, 1132, 1135, 1153, 1155, 1233, 1323, and 2000, and the Reporter's Transcript of the Evidentiary Hearing.¹

a. Relevant Project Description

The Willow Rock site lies approximately four miles north of Rosamond, California, approximately 0.22 miles east of the center of the interchange at Highway 14 and Dawn Road. Willow Rock would be in Kern County and under the jurisdiction of Eastern Kern Air Pollution Control District (EKAPCD).²

The Willow Rock project would be a nominal 520-MW gross (500-MW net) and 4,160 MWh gross (4,000 MWh net) A-CAES facility. Willow Rock would be capable of operating on a 24-hour basis, 365 days a year with an approximately 50-year lifespan.³

The project area includes the Willow Rock site, the parcels that would be used for temporary staging and laydown or construction of a permanent architectural berm, and the right-of-way associated with the gen-tie line.⁴

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

¹ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20; 68:12 – 72:21

² Ex. 2000, FSA, p. 5.3-13.

³ Ex. 2000, FSA, p. 5.1-1.

⁴ Ex. 2000, FSA, p. 5.1-1.

b. Regulatory Setting: Ambient Air Quality Standards for Criteria Pollutants

The United States Environmental Protection Agency (USEPA) and the California Air Resources Board (CARB) have established ambient air quality standards (AAQS) for several pollutants based on their adverse health effects. The USEPA has set National Ambient Air Quality Standards (NAAQS) for ozone (O₃), carbon monoxide (CO), nitrogen dioxide (NO₂), particulate matter of 10 micrometers or less in diameter (PM₁₀) and particulate matter of 2.5 micrometers and smaller in diameter (PM_{2.5}), sulfur dioxide (SO₂), and lead (Pb). Primary standards were set to protect public health; secondary standards were set to protect public welfare against visibility impairment, damage to animals, crops, vegetation, and buildings. In addition, CARB has established California Ambient Air Quality Standards (CAAQS) for these pollutants, as well as for sulfate (SO₄), visibility reducing particles, hydrogen sulfide (H₂S), and vinyl chloride. CAAQS are generally stricter than NAAQS. The standards currently in effect in California and relevant to the project are shown in **Table 6.B-1**.⁵

TABLE 6.B-1 Federal and State Ambient Air Quality Standards⁶				
Pollutant	Averaging Time	California Standards	Primary National Standards	Secondary National Standards
O₃	1-hour	0.09 ppm (180 µg/m ³)	0.070 ppm (137 µg/m ³)	
	8-hour	0.070 ppm (137 µg/m ³)	150 µg/m ³	
PM₁₀	24-hour	50 µg/m ³	—	
	Annual Mean	20 µg/m ³	35 µg/m ³	
PM_{2.5}	24-hour	—	9.0 µg/m ³	
	Annual Mean	12 µg/m ³	35 ppm (40 mg/m ³)	15.0 µg/m ³
CO	1-hour	20 ppm (23 mg/m ³)	9 ppm (10 mg/m ³)	—
	8-hour	9.0 ppm (10 mg/m ³)	100 ppb (188 µg/m ³)	—
NO₂	1-hour	0.18 ppm (339 µg/m ³)	53 ppb (100 µg/m ³)	—
	Annual Mean	0.030 ppm (57 µg/m ³)	75 ppb (196 µg/m ³)	Same as Primary Standard
SO₂	1-hour	0.25 ppm (655 µg/m ³)	—	—
	3-hour	—	0.14 ppm (for certain areas)	0.5 ppm (1,300 µg/m ³)
	24-hour	0.04 ppm (105 µg/m ³)	0.030 ppm (for certain areas)	—
	Annual Mean	—	—	—
H₂S	1-hour	0.03 ppm (42 µg/m ³)		

⁵ Ex. 2000, FSA, pp. 5.1-1 – 5.1-2.

⁶ Source, Ex. 2000, FSA, Table 5.1-1. Consult the FSA at pp. 5.1-2 – 5.1-3 for additional Notes applicable to these values.

c. Regulatory Setting: Attainment Status.

Areas that meet the AAQS, based upon air monitoring measurements made by either the local air district or CARB, are classified as “attainment areas,” and areas that have monitoring data that exceed AAQS are classified as “nonattainment areas.” If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as “unclassified.”⁷

The project site would be in Kern County within the jurisdiction of EKAPCD, which is classified as a nonattainment area for the state 1-hour and 8-hour ozone standards, as well as state 24-hour and annual PM10 standards. The criteria air pollutants of greatest concern are ozone and PM10. **Table 6.B-2** summarizes the attainment status for the relevant criteria pollutants for the project area in the EKAPCD with both NAAQS and CAAQS.⁸

TABLE 6.B-2 Attainment Status For Project Area In EKAPCD ⁹		
Pollutant	State Designation	Federal Designation
Ozone 1-hour	Nonattainment	Attainment ^{a, b}
Ozone 8-hour ^c	Nonattainment	Severe Nonattainment
PM10	Nonattainment	Unclassifiable/Attainment
PM2.5	Unclassified	Unclassifiable/Attainment
CO	Unclassified	Unclassifiable/Attainment
NO2	Attainment	Unclassified
SO2	Attainment	Unclassified
Lead	Attainment	Unclassifiable/Attainment

d. Summary of Background Ambient Air Quality

Table 6.B-3 shows the air quality monitoring data near the project from 2019 to 2023, the most recent years for which data are available. Data in this table that are marked in bold indicate that the most-stringent current standard was exceeded during that period. The data are from the closest and most representative ambient air monitoring stations:

- O3, PM10, and PM2.5 from the Kern Route 58 Business station.
- CO and NO2 from the Lancaster Division Street station.
- SO2 from the Victorville Park Avenue station.¹⁰

⁷ Ex. 2000, FSA, p. 5.1-3 (citing Health and Saf. Code, § 39608).

⁸ Ex. 2000, FSA, pp. 5.1-3, 5.1-12.

⁹ Source: Ex. 2000, FSA, Table 5.1-2. Consult the FSA at p. 5.1-4 for additional Notes applicable to these values.

¹⁰ Ex. 2000, FSA, p. 5.1-4.

TABLE 6.B-3 Ambient Air Quality Monitoring Data ¹¹						
Pollutant	Averaging Time	2019	2020	2021	2022	2023
O3 (ppm)	1-hour	-	0.079	0.094	0.091	0.05
	8-hour	-	0.075	0.084	0.075	0.046
PM10 (µg/m³)	24-hour	-	114.8	352.0	121.5	39.6
	Annual	-	32.7	29.9	25.2	9.2
PM2.5 (µg/m³)	24-hour (98th percentile)	-	51.7	27.1	10.2	12.0
	Annual	-	10.1	7.5	5.2	5.5
NO2 (ppb)	1-hour (maximum)	49.8	51.5	46.1	43.6	-
	1-hour (98th percentile)	39.8	40	42.1	38.7	-
	Annual	8.17	8.35	8.26	8.1	-
CO (ppm)	1-hour	1.4	1.6	1.4	-	-
	8-hour	0.9	1.1	1.1	-	-
SO2 (ppb)	1-hour (maximum)	4.3	3.6	3.4	-	-
	1-hour (99th percentile)	4	3	3	-	-
	24-hour	3.4	2.2	1.8	-	-
	Annual	1.74	1.01	0.90	-	-

The maximum concentration values listed in **Air Quality Table 6.B-3** have not been screened to remove values that are designated as exceptional events, such as wildfires, dust storms, or high winds. Violations that are the result of exceptional events are normally excluded from consideration as AAQS violations. For a conservative analysis, Staff used the background ambient air quality concentrations from the most recent 3-year period available to represent the baseline condition at the project site.¹²

ii. Environmental Analysis of Air Quality

This **Air Quality** evaluation assesses the degree to which the project would potentially cause a significant impact according to the CEQA Guidelines and federal, state, and local air district rules and regulations. The potential impacts to air quality associated with construction and operation of Willow Rock is evaluated using the significance criteria from the CEQA Guidelines Appendix G listed in **Table 6.B-4**.¹³ The analysis is based upon the methodologies and related thresholds of significances in the EKAPCD's Guidelines for Implementation of CEQA to determine the significance of the potential air quality emissions and impacts.¹⁴

¹¹ Source: Ex. 2000, FSA, Table 5.1-3. Note: Concentrations in bold type are those that exceed the limiting ambient air quality standard.

¹² Ex. 2000, FSA, p. 5.1-5.

¹³ Ex. 2000, FSA, p. 5.1-13 (citing the CEQA checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, air quality).

¹⁴ Ex. 2000, p. 5.1-13.

TABLE 6.B-4 CEQA Air Quality Checklist¹⁵				
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with or obstruct implementation of the applicable air quality plan?	☐	☒	☐	☐
b. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☒	☐	☐
c. Expose sensitive receptors to substantial pollutant concentrations?	☐	☒	☐	☐
d. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

a. Thresholds of Significance

For CEQA checklist criterion “a,” the threshold is a qualitative determination of whether Willow Rock would conflict with, or obstruct implementation of, any applicable air quality plan.¹⁶

For CEQA checklist criterion “b,” **Table 6.B-5** presents the EKAPCD’s regional air quality significance thresholds currently being implemented, as derived from the EKAPCD’s Guidelines for Implementation of CEQA and Subsection III.B.3 of EKAPCD Rule 210.1. If a project exceeds the identified significance thresholds, its emissions may be cumulatively considerable, resulting in significant adverse air quality impacts to the district’s existing air quality conditions.¹⁷

TABLE 6.B-5 EKAPCD Thresholds Of Significance¹⁸	
	Annual Emissions (tons/year)
NOx (as NO2)	25
CO	—
VOC	25
SOx (as SO2)	27

¹⁵ Source: Ex. 2000, FSA, Table on p. 5.1-13.

¹⁶ See Ex. 2000, FSA, pp. 5.1-15 – 5.1-16.

¹⁷ Ex. 2000, p. 5.1-13.

¹⁸ Source: Ex. 2000, FSA, Table 5.1-4 (citing EKAPCD 1999).

PM10	15
PM2.5	—

CEQA checklist criterion “c” concerns whether the project’s ground-level impacts would be likely to exceed any AAQS.¹⁹ Staff considers any new AAQS exceedance and substantial contribution to any existing AAQS exceedance caused by the project’s emissions to be substantial evidence of potentially significant impacts that would require the evaluation of potential mitigation measures. In this case, the project area in EKAPCD is classified as nonattainment for ozone (CAAQS and NAAQS) and PM10 (CAAQS).²⁰

CEQA checklist criterion “d” concerns whether the project would result in odors or other emissions that could adversely affect a substantial number of people.²¹

Determining the significance of air quality emissions also includes consideration of USEPA Significant Impact Levels (SILs), as shown in **Table 6.B-6**. Regulatory agencies have traditionally applied SILs as a threshold value. Levels of off-site concentration predicted to result from a source’s emissions below the SIL are not significant and do not warrant additional analysis or mitigation. Specifically, USEPA has stated in its guidance, when a Prevention of Significant Deterioration (PSD) permit applicant has shown through air quality modeling that the projected air quality impact from a proposed source for a particular pollutant is not significant or meaningful, there is a valid basis in most cases for the permitting authority to conclude that the proposed source will not cause or contribute to a violation of a NAAQS or PSD increment for that pollutant. To show that the proposed source will not have a significant or meaningful impact on air quality, permit applicants and permitting authorities may elect to use these SIL values.²²

TABLE 6.B-6 Significant Impact Levels ($\mu\text{g}/\text{m}^3$)²³		
Pollutant	Averaging Time	Class II Significant Impact Levels
Ozone	8-hour	1.96 (1.0 ppb) ^a
PM10	24-hour	5.0 ^b
	Annual	1.0 ^b
PM2.5	24-hour	1.2 ^b
	Annual	0.13 ^c
CO	1-hour	2,000 ^b

¹⁹ See Ex. 2000, FSA, p. 5.1-20.

²⁰ See Ex. 2000, FSA, p. 5.1-14.

²¹ See Ex. 2000, FSA, p. 5.1-25.

²² Ex. 2000, p. 5.1-14.

²³ Source: Ex. 2000, FSA, Table 5.1-5. Consult the FSA at p. 5.1-15 for additional Notes applicable to these values.

TABLE 6.B-6 Significant Impact Levels ($\mu\text{g}/\text{m}^3$)²³		
Pollutant	Averaging Time	Class II Significant Impact Levels
	8-hour	500 ^b
NO2	1-hour	7.5 (4 ppb) ^d
	Annual	1.0 ^b
SO2	1-hour	7.86 (3 ppb) ^e
	24-hour	5 ^b
	Annual	1.0 ^b

If the ambient concentration estimates from the refined modeling analysis indicate that the source's emissions have the potential to cause or contribute to a violation, then a cumulative impact analysis should be undertaken.²⁴

b. Impact Assessment and Mitigation

Staff based its analysis on the methodologies and related thresholds of significance in the EKAPCD's Guidelines for Implementation of CEQA to determine the significance of the potential air quality emissions and impacts.²⁵

The emissions estimation methodology for the project was developed in coordination with the latest available data and engineering design. Construction emissions were estimated based on emission factors from California Emissions Estimator Model® (CalEEMod) and the California Emission FACTor model for motor vehicle emissions (EMFAC2021). The operational emissions of the three emergency diesel generators were estimated based on USEPA Tier 4 emissions standards. The fire pump was based on Tier 3 emission standards.²⁶

Staff's analysis determined whether the project's ground-level impacts would be likely to exceed any AAQS or contribute substantially to an existing or projected air quality violation, and, if necessary, proposes mitigation to reduce or eliminate these pollutant exceedances or substantial contributions. The American Meteorological Society/ Environmental Protection Agency Regulatory Model (AERMOD [Version 23132]) was used for this ambient air quality impact analysis, as recommended in the USEPA's Guideline on Air Quality Models.²⁷

²⁴ Ex. 2000, p. 5.1-15.

²⁵ Ex. 2000, p. 5.1-13.

²⁶ Ex. 2000, FSA, pp. 5.1-13 – 5.1-14.

²⁷ Ex. 2000, FSA, p. 5.1-14.

1. Willow Rock Will Not Conflict with or Obstruct Implementation of Any Applicable Air Quality Plan.

This section considers the consistency of the proposed Willow Rock project with applicable air quality management plans. This is a qualitative determination that considers the impacts from project construction and operation.²⁸

Construction and operation of the project will result in emissions of criteria pollutants including ozone precursors (such as reactive organic gases (ROG) and NOx) and PM. The EKAPCD has prepared several air quality attainment plans to achieve ozone and particulate matter standards. Recent and historical EKAPCD State Implementation Plans (SIP) include:

- 1) 2023 Reasonable Available Control Technology SIP for the 2008 and 2015 8-Hour Ozone National Ambient Air Quality Standards (NAAQS).
- 2) 2023 8-Hour Ozone Plan for the 70-ppb and 75-ppb 8-Hour Ozone Standards for the Eastern Kern Nonattainment Area.
- 3) 2020 Indian Wells Second 10-Year PM10 Maintenance Plan.
- 4) 2017 Ozone Attainment Plan for 2008 Federal 75 ppb 8-Hour Ozone Standard as a revision to the California SIP.
- 5) February 2008 Ozone Early Progress Plans toward attaining the 8-hour NAAQS for Ozone and Setting Transportation Conformity Budgets for Ventura County, Antelope Valley-Western Mojave Desert, Coachella Valley, Eastern Kern County, and Imperial County, as a revision to the California SIP.
- 6) 2003 Ozone Attainment Demonstration, Maintenance Plan, and Redesignation Request for the East Kern County Nonattainment area.
- 7) 2002 Indian Wells PM10 Attainment Demonstration, Maintenance Plan, and Redesignation Request.²⁹

A. Construction

Less Than Significant with Mitigation Incorporated. All construction activities will occur in compliance with applicable federal, state, and local requirements, including those that are relied upon for attainment planning. The employment associated with the project will be consistent with the planning forecasts. Compliance with air permitting requirements, and other applicable requirements, ensures that proposed project emissions are included within the emission inventory forecasts that are relied upon for attainment planning. With incorporation of Conditions of Certification **AQ-SC1 through AQ-SC6**, construction of the project will not

²⁸ Ex. 2000, FSA, p. 5.1-15.

²⁹ Ex. 2000, FSA, pp. 5.1-15 – 5.1-16.

conflict with or obstruct implementation of the applicable air quality plans for minimizing ozone precursors and particulate matter emissions.³⁰

B. Operation

Less Than Significant Impact with Mitigation Incorporated. As discussed in more detail below, the operation and maintenance activities will result in limited emissions of ozone precursors and particulate matter. The emissions from worker automobile trips, water trucks, and emergency generator and fire pump testing will occur at levels that will not obstruct implementation of the air quality management plans. New sources of emissions will be conditioned to comply with EKAPCD air permitting requirements, including operating limitations and applicable emission standards that form the basis of attainment planning.³¹

Operational activities will not exceed the EKAPCD annual thresholds of significance. Operation of this project will not conflict with implementation of existing air quality plans. For these reasons, the project will be consistent with the applicable air quality plans. With the implementation of Conditions of Certification, the project will have a less than significant impact related to implementation of the applicable air quality management plans.³²

2. Willow Rock Will Not Result in a Cumulatively Considerable Net Increase of Any Criteria Pollutant for Which the Project Region Is Non-Attainment Under an Applicable Federal or State Ambient Air Quality Standard.

A. Construction

Construction of Willow Rock will be expected to last approximately 60 months. Project construction emissions will result from 1) onsite earth and rock movement activities, land preparation, shaft and cavern drilling, blasting, excavation, equipment exhaust, vehicle travel (truck hauling, deliveries and take-aways), construction of the power blocks and associated tanks and buildings, rock crushing plant operation, concrete batch plant operation, and 2) offsite vehicle travel (worker travel), truck hauling travel (deliveries and take-aways), paved roadway fugitives, T-line equipment exhaust, and pole site fugitives.³³

The project emissions from construction activities were evaluated under two scenarios: (1) with the construction of an architectural berm (With Berm), and (2) without the architectural berm (Without Berm). The With Berm scenario assumes that the cavern rock will be used to build an architectural berm. Under this scenario, approximately 25 percent of the cavern rock will be processed through the temporary portable onsite crushing/screening plant before being delivered to the architectural berm construction area along with the remaining 75 percent of

³⁰ Ex. 2000, FSA, p. 5.1-16.

³¹ Ex. 2000, FSA, pp. 5.1-16 – 5.1-17.

³² Ex. 2000, FSA, p. 5.1-17.

³³ Ex. 2000, FSA, p. 5.1-17.

the cavern rock. The Without Berm scenario conservatively assumes that virtually all the cavern rock will be processed through the crushing/screening plant and subsequently hauled offsite to an existing materials site for future use.³⁴

Annual emissions are based on the estimated highest consecutive 12-month period, which would be months 25 through 36 for the With Berm option, and months 30 through 41 for the Without Berm option. These 12-month periods considered workforce values, equipment numbers, and use rates, as well as construction activities (both aboveground and belowground). The estimated highest monthly emissions are based on the annual emissions divided by 12, while the highest daily emissions are based on the highest monthly emissions divided by 30 days per month. Emissions from the construction period were estimated using the CalEEMod program. The estimated criteria pollutant construction phase emissions are summarized in **Table 6.B-7**.³⁵

TABLE 6.B-7 Criteria Pollutant Emissions from Project Construction³⁶								
			NOx	CO	VOC	PM10	PM2.5	SO2
With Berm Option	Onsite	Tons/year	27.13	32.88	3.37	15.54	3.90	0.08
		lbs/day	150.7	182.7	18.7	86.3	21.7	0.4
	Offsite	Tons/year	1.4	7.4	0.6	2.9	0.5	0.04
		lbs/day	7.6	40.9	3.3	15.9	2.5	0.2
Without Berm Option	Onsite	Tons/year	42.70	60.03	6.47	14.60	3.86	0.17
		lbs/day	237.2	333.5	36.0	81.1	21.4	1.0
	Offsite	Tons/year	9.5	7.7	1.6	7.8	0.9	0.11
		lbs/day	52.9	42.7	8.7	43.4	4.7	0.6

Because the onsite emissions from NOx (in both scenarios) and PM10 (in the With Berm scenario) exceed the EKAPCD criterion thresholds in **Table 6.B-5**, Staff's impact analysis considers whether these emissions may be cumulatively considerable and thus result in a significant impact. As discussed below, the analysis for project construction conducted under CEQA environmental checklist criterion "c" concluded that project construction will not expose sensitive receptors to substantial criteria pollutant concentrations and thus have a less than significant impact. **Table 6.B-9** and **Table 6.B-10** show that the impacts from project construction will be below the limiting standards for PM2.5, CO, NO2, and SO2.

The analysis also shows that the project will contribute to existing exceedances of the 24-hour and annual PM10 CAAQS. However, the results provided in **Table 6.B-9** and **Table 6.B-10** are maximum impacts predicted to occur primarily due to fugitive dust. Additionally, the maximum PM10 impacts at the nearest sensitive receptors would be lower than PM10 SILs levels provided in **Table 6.B-6**. The Conditions of Certification required to reduce the

³⁴ Ex. 2000, FSA, p. 5.1-17.

³⁵ Ex. 2000, FSA, pp. 5.1-17 – 5.1-18.

³⁶ Source: Ex. 2000, FSA, Table 5.1-6.

generation of dust during construction will reduce the levels of PM10 throughout the project site, and the impacts will decrease rapidly with distance from the fence line.³⁷

Furthermore, construction emissions will be temporary. Staff generally concurs with the Applicant's proposed measures and recommends Conditions of Certification **AQ-SC1 through AQ-SC5**. In addition, Staff also concurred with the conditions suggested by Kern County Planning and Natural Resources Department and incorporated them into the Conditions of Certification. Conditions of Certification **AQ-SC1 through AQ-SC5** will ensure that PM10 and PM2.5 emissions are maintained to a level that is not a considerable increase of these pollutants. The project's construction impacts will thus be less than significant with mitigation incorporated.³⁸

B. Operation

Less Than Significant with Mitigation Incorporated. Operation emissions of Willow Rock will include the emissions of the three emergency generators and one fire pump engine. Operation of these diesel engines will result in emissions to the atmosphere of both criteria and toxic air pollutants. Criteria pollutant emissions will consist primarily of NOx, CO, VOCs, SOx, PM10, and PM2.5. Air toxic pollutants will consist of a combination of hazardous air pollutants and other compounds which are commonly generated from the combustion of fuel. Other than the operation of the diesel engines for testing and maintenance, there are no additional significant sources of air emissions from the maintenance. Commissioning of the diesel engines is not anticipated to take a significant amount of time and will result in emissions that are characteristically like normal operation; no emission testing is anticipated for commissioning.³⁹

Table 6.B-8 presents the maximum hourly and annual operation emissions based on a maximum annual runtime of 200 hours per engine. As permitted by the EKAPCD and specified in Condition of Certification **AQ-4**, this 200-hour limit excludes maintenance and readiness testing. However, the applicant has included the 50 hours of maintenance and readiness testing within the 200-hour annual limit. The 50-hour maintenance and readiness testing limit is required by the California Air Toxics Control Measure and specified in Condition of Certification **AQ-11**. The applicant assumed only one engine will be tested during any single hour. The annual emissions are based on all three emergency generators and the single fire pump.⁴⁰

³⁷ Ex. 2000, pp. 5.1-18, 5.1-23.

³⁸ Ex. 2000, p. 5.1-18.

³⁹ Ex. 2000, FSA, pp. 5.1-18 – 5.1-19.

⁴⁰ Ex. 2000, FSA, p. 5.1-19.

TABLE 6.B-8 Maximum Hourly And Annual Operation Emissions (lbs/hr)⁴¹					
Pollutant	Maximum Emission, Single Emergency Generator (lb/hr)	Maximum Emission, Fire Pump Engine (lb/hr)	Potential to Emit All Engines (tpy)	EKAPCD CEQA Thresholds (tpy)	Exceeds EKAPCD CEQA Thresholds?
NOx	3.991	2.890	1.49	25	No
CO	20.756	2.637	6.50	—	No
VOC	1.118	0.152	0.35	25	No
SO2	0.037	0.005	0.013	27	No
PM10	0.16	0.152	0.063	15	No
PM2.5	0.16	0.152	0.063	—	No

The annual operational emissions of the project shown in **Table 6.B-8** are well below the EKAPCD offset thresholds in Rules 201 and 210.1, thus the operation of the project will not result in significant impacts as defined by the EKAPCD CEQA Guidelines.⁴²

As noted above, the Applicant calculated the annual potential to emit (PTE) based on the assumption of total annual operation of 200 hours for each engine, which includes 50 hours of maintenance and readiness testing and 150 hours of emergency operation. However, Condition of Certification **AQ-4** will allow operation (excluding maintenance and testing) up to 200 hours per year and Condition of Certification **AQ-11** limits maintenance and testing to 50 hours per year. Increasing the total operation hours from 200 to 250 (=200+50) would increase annual PTE by 1.25 times. However, since the annual PTE based on 200 hours of total operation would be well below the EKAPCD offset thresholds, increasing the PTE by 1.25 times would not change the conclusion of the project impact. In addition, the assumption of 150 hours of emergency operation per year per engine is already very conservative.⁴³

The applicant estimated that the number of workers during normal facility operations at 40 full time equivalents. It is expected that all 40 employees will live within Kern County for the assumption of 50 miles per round trip, which corresponds to 2,000 vehicle miles traveled per day. Using the 2029 standard vehicle mix, the indirect project emissions will be well below the 137 pounds per day CEQA threshold for motor vehicle trips: 0.283 lbs/day of NOx and 0.0445 lbs/day of volatile organic compounds (VOCs), which are equivalent to 0.05 tons trips per year (tpy) of NOx and 0.008 tpy of VOCs. As a result, emissions from the worker trips will be less than significant.⁴⁴

⁴¹ Source: Ex. 2000, FSA, Table 5.1-7. Consult the FSA at p. 5.1-19 for additional Notes applicable to these values.

⁴² Ex. 2000, FSA, p. 5.1-19.

⁴³ Ex. 2000, FSA, p. 5.1-19.

⁴⁴ Ex. 2000, FSA, p. 5.1-19.

The applicant has removed the evaporation pond and reverse osmosis system from the proposed project design. Instead, most of the water generated during operations will be immediately reused within the system, with the remaining volume transported offsite. In the most conservative scenario, up to 250,000 gallons of water will be hauled to a facility 27 miles away in Palmdale 13 times per year using heavy duty diesel water trucks. These trips would produce 2.4 lbs/year of NO_x and less than 1 lbs/year of other criteria pollutants. As a result, emissions would be *de minimis*, and the air quality impacts due to water truck deliveries would be negligible.⁴⁵ Therefore, for these reasons the project's operational potential impact regarding CEQA Checklist Criterion "b" will be less than significant with mitigation incorporated.⁴⁶

3. Willow Rock Will Not Expose Sensitive Receptors to Substantial Pollutant Concentrations.

This section discusses the potential ambient air quality impacts of criteria pollutant emissions of the Willow Rock project to evaluate whether substantial pollutant concentrations could occur. The Public Health section of this decision discusses the potential impacts of toxic air contaminants.⁴⁷

A. Construction

Table 6.B-9 and Table 6.B-10 show the impacts of the project during the construction period. The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest concentrations, or the three-year averages of the highest concentrations for 24-hour PM_{2.5} and annual PM_{2.5} following the forms of the standards, from the most recent 3 year period available during the 5-year period (2019-2023). The background data are from the closest and most representative ambient air monitoring stations.⁴⁸

The background PM₁₀ concentrations are shown in bold because they already exceeded the CAAQS. The total impact column shows the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for construction. The limiting standard column combines CAAQS and NAAQS, whichever is more stringent.⁴⁹

⁴⁵ Ex. 2000, FSA, p. 5.1-19.

⁴⁶ Ex. 2000, FSA, p. 5.1-18.

⁴⁷ Ex. 2000, FSA, p. 5.1-20.

⁴⁸ Ex. 2000, FSA, p. 5.1-21.

⁴⁹ Ex. 2000, FSA, p. 5.1-21.

TABLE 6.B-9 Maximum Ambient Air Quality Impacts During Construction – Architectural Berm Option ($\mu\text{g}/\text{m}^3$)⁵⁰						
Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24-hour	23.94	352.0	375.94	50	752%
	Annual	5.99	29.9	35.89	20	179%
PM2.5	24-hour	6.18	27.1	33.28	35	95%
	Annual	2.52	6.1	8.62	9	96%
CO	1-hour	511.04	1,832	2,343.04	23,000	10%
	8-hour	120.22	1,260	1,380.22	10,000	14%
NO2	State 1-hour	-	-	297.4	339	88%
	Federal 1-hour	-	-	157.41	188	84%
	Annual	13.77	15.7	29.47	57	52%
SO2	State 1-hour	0.94	11.2	12.14	655	2%
	Federal 1-hour	0.80	10.5	11.3	196	6%
	24-hour	0.13	8.9	9.03	105	9%
	Annual	0.036	4.6	4.64	80	6%

TABLE 6.B-10 Maximum Ambient Air Quality Impacts During Construction – No-Architectural Berm Option ($\mu\text{g}/\text{m}^3$)⁵¹						
Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24-hour	28.97	352.0	380.97	50	762%
	Annual	5.21	29.9	35.11	20	176%
PM2.5	24-hour	3.77	27.1	30.87	35	88%
	Annual	1.44	6.1	8.94	9	84%
CO	1-hour	1,285.86	1,832	3,117.86	23,000	14%
	8-hour	263.74	1,260	1,523.74	10,000	15%
NO2	State 1-hour	-	-	335.54	339	99%
	Federal 1-hour	-	-	174.59	188	93%
	Annual	7.54	15.7	23.24	57	41%
SO2	State 1-hour	4.32	11.2	15.52	655	2%
	Federal 1-hour	2.28	10.5	12.78	196	7%

⁵⁰ Source: Ex. 2000, FSA, Table 5.1-8. Consult the FSA at p. 5.1-22 for additional Notes applicable to these values.

⁵¹ Source: Ex. 2000, FSA, Table 5.1-9. Consult the FSA at p. 5.1-23 for additional Notes applicable to these values.

TABLE 6.B-10 Maximum Ambient Air Quality Impacts During Construction – No-Architectural Berm Option ($\mu\text{g}/\text{m}^3$) ⁵¹						
Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
	24-hour	0.43	8.9	9.33	105	9%
	Annual	0.038	4.6	4.64	80	6%

Tables 6.B-9 and **6.B-10** show that the impacts from project construction will be below the limiting standards for PM_{2.5}, CO, NO₂, and SO₂. These tables also show that the existing 24-hour and annual PM₁₀ background concentrations are already above the CAAQS. The project will, therefore, contribute to existing exceedances of the 24-hour and annual PM₁₀ CAAQS. The maximum modeled 24-hour PM₁₀ impacts from project construction in both options would exceed the U.S. EPA PM₁₀ SILs of 5 $\mu\text{g}/\text{m}^3$ for 24-hour impacts. The maximum modeled annual PM₁₀ concentrations in both options would exceed the PM₁₀ SILs of 1 $\mu\text{g}/\text{m}^3$ for annual impacts. However, the results provided in **Table 6.B-9** and **Table 6.B-10** are maximum impacts predicted to occur primarily due to fugitive dust. Thus, practices that reduce the generation of dust during construction will reduce the levels of PM₁₀ throughout the project site. The impacts would decrease rapidly with distance from the fence line. The maximum PM₁₀ impacts at the nearest sensitive receptors would be lower than PM₁₀ SILs levels. In addition, the impacts to the general population and sensitive populations during construction would be reduced with the implementation of Conditions of Certification **AQ-SC1 through AQ-SC5**. With mitigation, the PM₁₀ impacts of the project during construction will be less than significant.⁵²

With the implementation of **AQ-SC1** through **AQ-SC5**, project construction will not expose any sensitive receptors to substantial criteria pollutant concentrations, and this impact will be less than significant.⁵³

B. Operation

Less Than Significant with Mitigation Incorporated. The analysis for project operation includes emissions from the emergency generators and diesel fire water pump. The applicant modeled the operation impacts for both the architectural berm and no-architectural berm options. Because the only difference between the two operational scenarios is the location of the western and northern fence lines, with the no-architectural berm option having the shorter distance to the receptors along the western and northern fence, the no-architectural berm option produced the higher modeled concentrations.⁵⁴

For annual averaging periods, each engine was assumed to be capable of operating up to its assumed 200-hour-per-year limit. For shorter averaging periods, i.e., maintenance and

⁵² Ex. 2000, FSA, p. 5.1-22.

⁵³ Ex. 2000, FSA, p. 5.1-22.

⁵⁴ Ex. 2000, FSA, p. 5.1-23.

readiness testing, only one engine is assumed to be operating in any 1 hour, while up to four engines may be tested in any one day. The use of 200 hours of operation per year results in very conservative criteria pollutant impact assessments since it assumes that up to 150 hours per year will be emergency operation.⁵⁵

The applicant's analysis compares worst-case ground-level impacts resulting from the project operation with established state and federal AAQS. Staff reviewed the applicant's dispersion modeling files, and Staff agrees with the inputs used by the applicant and the outputs from the model for the air quality analysis.⁵⁶

Table 6.B-11 shows the maximum impacts from project operation. The project impact column shows the worst-case impacts of the project from modeling. The background column shows the highest concentrations, or the three-year averages of the highest concentrations for 24-hour PM_{2.5} and annual PM_{2.5} following the forms of the standards, from the most recent 3 years available during the 5-year period (2019-2023). The background PM₁₀ concentrations are shown in bold because they already exceeded the CAAQS. The total impact column shows the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for operation. The limiting standard column combines CAAQS and NAAQS, whichever is more stringent.⁵⁷

TABLE 6.B-11 Maximum Ambient Air Quality Impacts During Operation – No-Architectural Berm Option (µg/m³)⁵⁸						
Pollutant	Averaging Time	Project Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM₁₀	24-hour	0.1	352.0	352.1	50	704%
	Annual	0.02	29.9	29.92	20	150%
PM_{2.5}	24-hour	0.08	27.1	27.18	35	78%
	Annual	0.01	6.1	6.1	9	68%
CO	1-hour	503.2	1,832	2,335.2	23,000	10%
	8-hour	51.5	1,260	1,311.5	10,000	13%
NO₂	State 1-hour	120.3	96.9	217.2	339	64%
	Federal 1-hour	2.9	79.2	82.1	188	44%
	Annual	0.3	15.7	16.0	57	28%
SO₂	State 1-hour	1.0	11.2	12.2	655	2%
	Federal 1-hour	0.04	10.5	10.54	196	5%
	24-hour	0.03	8.9	8.93	105	9%

⁵⁵ Ex. 2000, FSA, p. 5.1-23.

⁵⁶ Ex. 2000, FSA, p. 5.1-23.

⁵⁷ Ex. 2000, FSA, pp. 5.1-23 – 5.1-24.

⁵⁸ Source: Ex. 2000, FSA, Table 5.1-10. Consult the FSA at pp. 5.1-24 – 5.1-25 for additional Notes applicable to these values.

	Annual	0.003	4.6	4.60	80	6%

Table 6.B-11 shows that the impacts from project operation will be below the limiting standards for PM_{2.5}, CO, NO₂, and SO₂. This table also shows that the existing 24-hour and annual PM₁₀ background concentrations are already above the CAAQS. The project will, therefore, contribute to existing exceedances of the 24-hour and annual PM₁₀ CAAQS. However, the maximum modeled 24-hour PM₁₀ impact of 0.1 µg/m³ and annual PM₁₀ concentration of 0.02 µg/m³ from project operation will not exceed the USEPA 24-hour PM₁₀ SILs of 5 µg/m³ or annual PM₁₀ SILs of 1 µg/m³. Therefore, the PM₁₀ impacts of the project during operation will be less than significant.⁵⁹

Fumigation Impacts from inversion break-up were not assessed. The USEPA Model AERSCREEN, based upon guidance given in "Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised" (USEPA- 454/R-92-019) requires that the point source stack heights would need to exceed 10 meters (33 feet) in order for fumigation impacts to occur (U.S. EPA 2021b). As all the point source emission release heights for Willow Rock are less than 10 meters above ground level, fumigation was not assessed.⁶⁰

Therefore, project operation will not expose sensitive receptors to substantial criteria pollutant concentrations, and therefore this impact will be less than significant.⁶¹

4. Willow Rock Will Not Result in Other Emissions (Such as Those Leading to Odors) Adversely Affecting a Substantial Number of People.

This section considers impacts that may arise from emissions other than criteria air pollutants and TACs, such as emissions that may lead to odors.⁶²

EKAPCD Rule 419 states that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.⁶³

A. Construction

Less Than Significant Impact. Minor odor sources during construction activities include diesel exhaust from heavy-duty equipment. Odors from construction activities near existing receptors

⁵⁹ Ex. 2000, FSA, p. 5.1-24.

⁶⁰ Ex. 2000, FSA, pp. 5.1-24 - 5.1-25.

⁶¹ Ex. 2000, FSA, p. 5.1-24.

⁶² Ex. 2000, FSA, p. 5.1-25.

⁶³ Ex. 2000, FSA, p. 5.1-25.

will be temporary in nature and dissipate as a function of distance. Accordingly, the construction of the project is not expected to result in substantial emissions that may lead to odor impacts or impacts of emissions other than those of criteria pollutants and toxic air contaminants identified elsewhere in this decision.⁶⁴

Fugitive dust emissions can also create a nuisance that can cause adverse effects. The project will comply with the construction fugitive dust control measures specified in **AQ-SC3** and so should not have substantial fugitive dust emissions during construction that could adversely affect a substantial number of people.⁶⁵

Therefore, the construction of the project will not result in other emissions, such as those leading to odors, that could adversely affect a substantial number of people and will have a less than significant impact.⁶⁶

B. Operation

Less Than Significant Impact. Potential odor sources from the project will include diesel exhaust from the emergency generators and fire pump engine. When compared to existing odor sources near the project site, which include emergency generators and agricultural equipment, odor impacts from the fire pump engine, emergency generators of the project will be similar.⁶⁷

The project operation will not result in odors or other emissions that could adversely affect a substantial number of people and will have a less than significant impact related to odors.⁶⁸

5. Cumulative Impacts

Less Than Significant with Mitigation Incorporated. "Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."⁶⁹ Such impacts can be relatively minor and incremental yet still be significant because of the existing environmental background, particularly when considering other closely related past, present, and reasonably foreseeable future projects.⁷⁰

The existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles include:

- Mojave Micro Mill (1.3 miles to the project)

⁶⁴ Ex. 2000, FSA, p. 5.1-25.

⁶⁵ Ex. 2000, FSA, p. 5.1-25.

⁶⁶ Ex. 2000, FSA, p. 5.1-25.

⁶⁷ Ex. 2000, FSA, p. 5.1-25.

⁶⁸ Ex. 2000, FSA, p. 5.1-25.

⁶⁹ Ex. 2000, FSA, p. 5.1-26 (citing Cal. Code Regs., tit. 14, § 15355).

⁷⁰ Ex. 2000, FSA, p. 5.1-26.

- Edwards Air Force Base Solar Project (2.5 miles to the project)
- True North Renewable Energy (5.4 miles to the project)
- Capella Solar (5.4 miles to the project)
- Organics Energy Solar (5.4 miles to the project)
- Golden Queen Mining Company, LLC (5.5 miles to the project)
- Sanborn Solar (5.9 miles to the project)⁷¹

As discussed above regarding CEQA checklist criterion “b”, the project’s criteria pollutant emissions will not occur at rates that could be cumulatively significant. With the implementation of Conditions of Certification **AQ-SC1 through AQ-SC5**, the project construction will not result in a cumulatively significant impact.⁷²

As discussed above regarding CEQA checklist criterion “c,” the total air quality impacts include background concentrations as a means of capturing the effects of existing sources in the cumulative conditions. The project will not cause or contribute to a violation of any PM2.5, NO2, CO, or SO2 AAQS and the cumulative impacts will be less than significant.⁷³

The local cumulative PM10 concentrations that occur above the most-stringent standards are dominated by the combined effects of existing, background stationary and mobile sources. Because the overall cumulative impacts to PM10 exceed the standards, the proposed project will contribute to a significant cumulative impact. However, based on the proposed project’s individual impact being below the thresholds of the PM10 SILs at all sensitive receptor locations, the project’s incremental contribution to the cumulative impact will not be cumulatively considerable. The project’s contribution to the cumulative PM10 impacts will be less than significant.⁷⁴

In addition, **Table 6.B-11** shows that the project’s worst-case operational impacts will be below all applicable SILs shown in **Table 6.B-6**. Therefore, the project’s incremental contribution to the cumulative impacts to AAQS will be less than significant, and a localized cumulative impacts modeling analysis is not required.⁷⁵

Thus, staff concludes that the project with implementation of Conditions of Certification **AQ-SC1 through AQ-SC5**, will not result in a cumulatively considerable net increase of any criteria air pollutant, and the project’s potential to contribute to the cumulative impact of criteria pollutant concentrations will be less than significant with mitigation incorporated.⁷⁶

⁷¹ Ex. 2000, FSA, p. 5.1-26.

⁷² Ex. 2000, FSA, p. 5.1-26.

⁷³ Ex. 2000, FSA, p. 5.1-26.

⁷⁴ Ex. 2000, FSA, p. 5.1-26.

⁷⁵ Ex. 2000, FSA, pp. 5.1-26 – 5.1-27.

⁷⁶ Ex. 2000, FSA, p. 5.1-27.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

TABLE 6.B-12 Air Quality Laws, Ordinances, Regulations, And Standards ⁷⁷		
APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
Federal		
Clean Air Act		
40 Code of Federal Regulations (CFR) Part 51, Nonattainment New Source Review (NSR) Program	The NSR program requires new and modified stationary sources to obtain air permits and requires Best Available Control Technology (BACT) and emissions offsets. Permitting and enforcement for NSR is delegated to EKAPCD.	Compliant. New source review requirements are implemented through EKAPCD rules and regulations. Conditions of Certification AQ-SC6 and AQ-1 through AQ-18 will ensure EKAPCD permit conditions are satisfied.
State		
California Health and Safety Code		
Section 41700, Nuisance Provisions	Prohibits emissions resulting from use of this equipment which cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public, which applies to all of the proposed project's emitting activities and sources.	Compliant. To avoid the potential for injury, detriment, nuisance, or annoyance this analysis includes Conditions of Certification AQ-SC1 to AQ-SC4 for minimizing visible dust during construction.
EKAPCD		
Rule 201 – Permits Required	This rule requires any person building, altering, or replacing any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate or reduce or control the issuance of air contaminants, shall first obtain authorization for such construction from the Air Pollution Control Officer (APCO). An Authority to Construct (ATC) shall remain in effect until the permit to operate the equipment for which the application was filed is granted, denied, or canceled.	Compliant. This analysis includes Conditions of Certification AQ-SC6 and AQ-1 through AQ-18 for stationary source permit conditions.
Rule 208.2	Criteria for finding of No Significant Environmental Impact (CEQA)	Compliant. This rule establishes criteria by which a project under review by EKAPCD can be found to

⁷⁷ See Ex. 2000, FSA, pp. 5.1-27 – 5.1-29.

TABLE 6.B-12 Air Quality Laws, Ordinances, Regulations, And Standards ⁷⁷		
APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
		have no potential for causing a significant environmental impact, and, thus, be granted a general rule exemption pursuant to Section 15061(b)(3) of the State CEQA Guidelines. The CEQA compliance of the project has been determined by this staff analysis and district permit.
Rule 210.1 – New and Modified Stationary Source Review	This rule requires: 1) Pre-construction review of new and modified stationary sources of affected pollutants to ensure emissions will not interfere with the attainment of ambient air quality standards. 2) Appropriate new and modified sources of affected pollutants are constructed with Best Available Control Technology. 3) No significant net increase in emissions from new and modified stationary sources for all non-attainment pollutants and their precursors.	Compliant. The project emission units will be subject to new source review for minor sources. The process will require application of BACT. Offsets will not be required because the emission units are for emergency use only and Condition of Certification AQ-4 will limit operation to no more than 200 hours per year (excluding maintenance and readiness testing).
Rule 401 – Visible Emissions	This rule prohibits the discharge into the atmosphere emissions as dark as or darker than Ringelmann 1 or 20% opacity for more than 3 minutes in any one hour. Engines are diesel fueled.	Compliant. In accordance with BACT requirements, visible emissions shall be limited to 5% opacity as required by AQ-5 . Visible emissions of 20% opacity are not expected.
Rule 402 – Fugitive Dust	The purpose of Rule 402 is to prevent, reduce, and mitigate ambient concentrations of anthropogenic fugitive dust emissions to an amount sufficient to attain and maintain the NAAQS and CAAQS.	Compliant. The applicant will submit a Fugitive Dust Emission Control Plan prior to the commencement of construction as required by the rule. In addition, Conditions of Certification AQ-SC1 through AQ-SC4 will minimize visible dust during construction.
Rule 404.1 – Particulate Matter Concentration	This rule prohibits the discharge of particulate matter in excess of 0.1 grains per standard cubic foot of	Compliant. The discharge of particulate matter is 0.02 gr/scf, which is less than 0.1 grains per standard cubic foot of gas at

TABLE 6.B-12 Air Quality Laws, Ordinances, Regulations, And Standards ⁷⁷		
APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
	gas (gr/scf) at standard condition from any single source operation.	standard conditions as required by AQ-7 .
Rule 407 – Sulfur Compounds	This rule prohibits the discharge into the atmosphere sulfur compounds, which will exist as a liquid or gas at standard conditions, exceeding in concentration at the point of discharge: 0.2 percent by volume calculated as sulfur dioxide (SO ₂).	Compliant. Sulfur content of diesel fuel shall not exceed 0.0015% (15 ppm) as required by AQ-6 . Given known combustion principles, SO ₂ emission rate shall be less than 0.2% by volume.
Rule 419 – Nuisance	This rule prohibits the discharge of air contaminants or other materials in quantities that may cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public or which endanger the comfort, repose, health or safety of any such persons or the public or which cause or have a natural tendency to cause injury or damage to business or property.	Compliant. See Condition of Certification AQ-14 .
Rule 423 – National Emissions Standards for Hazardous Air Pollutants	This Rule establishes national emission and operating limitations for hazardous air pollutants (HAP) emitted from stationary reciprocating internal combustion engines at major and area sources of HAP emissions. Requirements to demonstrate initial and continuous compliance with limitations are also established.	Compliant. The Authority to Construct and Permit to Operate provided under AQ-SC6 required compliance with Rule 423. By meeting airborne toxic control measures emission requirements, the engines in this project comply with the requirements of 40 CFR Part 60 Subpart IIII, which satisfies the requirements of 40 CFR 63 Subpart ZZZZ.
Rule 427 – Stationary Piston Engine.	This rule limit oxides of nitrogen from stationary piston engine to levels consistent with Reasonable Available Control Technology (RACT) to satisfy California Health & Safety Code (H&SC) Section 40918 (b).	Compliant. Emergency generators in this project driven by the 3,621-bhp and 460-bhp diesel engines will be permitted to operate 200 hours per year, as required by AQ-4 . Therefore, the owner/operator of the engines is not required to comply with Rule 427.

The evidence indicates, and we find, that with the imposition and implementation of the **Air Quality** Conditions of Certification specified in **Appendix A**, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding air quality.

iv. Agency and Public Comment

No comments have been received regarding the topic of air quality besides those already addressed in the FSA.⁷⁸

v. Findings of Fact

Based on the uncontroverted evidence, the CEC makes the following findings:

1. Willow Rock will be located under the jurisdiction of EKAPCD.
2. EKAPCD filed its Final Determination of Compliance in the CEC's online docket for this proceeding on May 14, 2024, stating that the project will comply with applicable rules, which incorporate state and federal requirements.
3. The Willow Rock project area is designated "nonattainment" for the state 1-hour and 8-hour ozone standards, as well as state PM10 standards, and it is in severe nonattainment for the federal 8-hour ozone standard.
4. With incorporation of Conditions of Certification **AQ-SC1 through AQ-SC6**, construction of the project will not conflict with or obstruct implementation of any applicable air quality plan.
5. With the implementation of Conditions of Certification **AQ-4** and **AQ-11**, project operation will not result in significant impacts as defined by the EKAPCD CEQA Guidelines.
6. With the implementation of Conditions of Certification **AQ-4** and **AQ-11**, project operation will not conflict with or obstruct implementation of any applicable air quality plan
7. Construction impacts will contribute to existing exceedances of the 24-hour and annual PM10 CAAQS standards if left unmitigated.
8. With the implementation of Conditions of Certification **AQ-SC1 through AQ-SC5**, project construction will not expose any sensitive receptors to substantial criteria pollutant concentrations.
9. With the implementation of Conditions of Certification **AQ-4** and **AQ-11**, project operation will not expose any sensitive receptors to substantial criteria pollutant concentrations.
10. With the implementation of Conditions of Certification **AQ-SC3**, project construction will not result in other emissions, such as those leading to odors that could adversely affect

⁷⁸ See Ex. 2000, p. 5.1-29 – 5.1-31; 8/21/2025 Evidentiary Hearing RT pp. 48:21 – 68:8.

a substantial number of people, and will have a less than significant impact from these emissions.

11. Project operation will not result in other emissions, such as those leading to odors that could adversely affect a substantial number of people, and will have a less than significant impact from these emissions.
12. The mitigation measures contained in Conditions of Certification **AQ-SC1 through AQ-SC5** will reduce construction-related air quality impacts to insignificant levels under CEQA.
13. The record contains an adequate analysis of the potential of Willow Rock to contribute to cumulative air quality impacts.
14. With implementation of Conditions of Certification **AQ-4, AQ-11, and AQ-SC1 through AQ-SC5**, Willow Rock will not result in a cumulatively considerable net increase of any criteria air pollutant, and the project's potential to contribute to the cumulative impact of criteria pollutant concentrations will be less than significant.
14. Willow Rock will not require offsets.

vi. Conclusions of Law

1. Implementation of the **Air Quality** mitigation measures described in the record and contained in the Conditions of Certification set forth in this Decision and specified in **Appendix A** ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to air quality.
2. Implementation of the **Air Quality** mitigation measures described in the record and contained in the Conditions of Certification set forth in this Decision and specified in **Appendix A** ensures that Willow Rock will not result in significant direct, indirect, or cumulative air quality impacts.

6 Public Health and Safety

C. Public Health

i. Introduction

This section supplements the previous discussion in the **Air Quality** section of this Decision and considers the potential public health effects from emissions of toxic air contaminants (TACs) from the proposed Willow Rock project. Health and Safety Code section 39655 defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health." In addition, substances that have been listed as hazardous air pollutants (HAPs)¹ are TACs under the state law.² The California Air Resources Board (CARB) formally identified HAPs³ for California.⁴ The following analysis reviews whether project TAC emissions would result in significant public health impacts or violate applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to public health protection.⁵

The **Air Quality** section of this Decision includes information about air quality other than the emissions of TACs. The health impacts on public and workers from accidental releases of hazardous materials are discussed in the **Hazardous Materials Management** section of this Decision. The health and nuisance effects from electric and magnetic fields are discussed in the **Transmission Line Safety and Nuisance** section of this Decision. Pollutants released from the project's wastewater streams are discussed in the **Soil and Water Resources** section of this Decision. Releases in the form of hazardous and nonhazardous wastes are described in the **Waste Management** section of this Decision.

Evidence on the topic of Public Health is contained in Exhibits 1025, 1032-1034, 1040-1041, 1053, 1070, 1111, 1155, 1233, 1323, 2000,⁶ and in the Reporter's Transcript of the Evidentiary Hearing.⁷

a. Project Description

Willow Rock will be a nominal 520-MW gross (500-MW net) and 4,160 MWh gross (4,000-MWh net) A-CAES facility. Willow Rock will be capable of operating on a 24-hour basis, 365 days a year with an approximately 50-year lifespan.⁸ Project construction air emissions from Willow

¹ Pursuant to 42 U.S.C., § 7412.

² Health & Saf. Code, § 39657 (b).

³ Cal. Code Regs., tit. 17, § 93001.

⁴ Ex. 2000, FSA, p. 5.10-1.

⁵ Ex. 2000, FSA, p. 5.10-1.

⁶ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

⁷ 8/21/25 Evidentiary Hearing RT pp. 252:17 – 256:12, 268 – 271:4.

⁸ Ex. 2000, FSA, p. 5.10-2.

Rock will result from vehicles and equipment exhaust and fugitive dust.⁹ After construction, air emissions will consist primarily of combustion by-products produced by four internal combustion engines driving emergency generators and a fire pump.¹⁰

The Willow Rock site lies approximately four miles north of Rosamond, California, approximately 0.22 miles east of the center of the interchange at SR-14 and Dawn Road. Willow Rock will be in Kern County and under the jurisdiction of Eastern Kern Air Pollution Control District (EKAPCD).¹¹

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

b. Setting

Prevailing winds that blow to the proposed Willow Rock site are mostly from the west and southwest with an average wind speed of 11.8 mph.¹²

The nearest residential receptor is approximately 0.4 miles from the Willow Rock project boundary, including the laydown areas.¹³ The nearest worker receptor is approximately 1.49 miles north-northeast from the property line. The nearest sensitive receptor, a residential daycare facility, is approximately 3.03 miles from Willow Rock.¹⁴

ii. Environmental Analysis of Public Health

This Public Health evaluation assesses the degree to which the project would potentially cause a significant impact according to the CEQA Guidelines and federal, state, and local air district rules and regulations. Willow Rock is evaluated using the CEQA Public Health checklist listed in **Table 6.C-1** and the thresholds of significance that follow.¹⁵ Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determination.

⁹ Ex. 2000, FSA, p. 5.10-16.

¹⁰ Ex. 2000, FSA, p. 5.10-1.

¹¹ Ex. 2000, FSA, p. 5.10-2.

¹² Ex. 2000, FSA, p. 5.10-3.

¹³ Ex. 2000, FSA, p. 5.10-17 (Table 5.10-2, footnote 2 identifying a Maximally Exposed Individual Resident 2,200 feet northwest of the project boundary).

¹⁴ Ex. 2000, FSA, p. 5.10-3.

¹⁵ Ex. 2000, FSA, pp. 5.10-7 – 5.10-8.

TABLE 6.C-1 CEQA Public Health Checklist ¹⁶				
PUBLIC HEALTH	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts?	☐	☒	☐	☐

a. Thresholds of Significance

TACs are categorized as noncriteria pollutants for which no ambient air quality standards have been established. In the absence of standards, state and federal regulatory agencies have developed health risk assessment procedures to evaluate potential health effects from exposure to these TACs.¹⁷

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the project could emit into the environment.
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling.
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal (skin) contact.
- Characterize potential health risks by comparing worst-case exposure to the project's emissions with the scientific safety standards based on known health effects.¹⁸

Typically, the initial health risk analysis is performed at a "screening level," which is designed to conservatively estimate potential health risks. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then modeling those conditions to analyze results. Such conditions include:

- Using the highest levels of pollutants that could be emitted from the plant.
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants.
- Using the type of air quality computer model which predicts the greatest plausible impacts.

¹⁶ Source: Ex. 2000, FSA, p. 5.10-8, citing Environmental checklist established by CEQA Guidelines, Appendix G, air quality and staff additions.

¹⁷ Ex. 2000, FSA, p. 5.10-8.

¹⁸ Ex. 2000, FSA, pp. 5.10-8 – 5.10-9.

- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest, even if it is unlikely anybody would be in that area.
- Assuming that an individual's exposure to carcinogenic (cancer-causing) agents would occur continuously for 30 or 70 years.
- Using health-based objectives aimed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses).¹⁹

The health risk assessment process addresses three categories of health impacts: (1) acute (short-term) health effects, (2) chronic (long-term) non-cancer effects, and (3) cancer risk (also long-term).²⁰

Acute health effects are those that result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Such effects are temporary. Chronic noncancer health effects are those that result from long-term exposure to lower concentrations of pollutants. Long-term exposure is defined as more than 12 percent of a lifetime, or about eight years. For carcinogenic substances, the health assessment considers the risk of developing cancer and assumes that continuous exposure to the carcinogen would occur over a 30 or 70-year lifetime.²¹

The analysis for both acute and chronic non-cancer health effects compares the maximum project contaminant levels to safe levels known as Reference Exposure Levels, or RELs. These are amounts of toxic substances to which even sensitive individuals could be exposed without suffering any adverse health effects. In other words, the REL is a concentration below which there is assumed to be no observable adverse health impact to a target organ system. These exposure levels are specifically designed to protect the most sensitive individuals in the population, such as infants, the aged, and people with specific illnesses or diseases which make them more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effect reported in the medical and toxicological literature and include specific margins of safety.²²

Staff assesses the non-cancer health effects by calculating a hazard index. A hazard index is a ratio obtained by comparing exposure from facility emissions to the safe exposure level (i.e., REL) for that pollutant. A non-cancer hazard quotient signals whether chronic health effects are likely from exposure to one chemical. If there are exposures to multiple chemicals, the hazard quotient for each chemical is added up to calculate a hazard index. When the hazard index or hazard quotient is less than 1, non-cancer health effects are not expected for people

¹⁹ Ex. 2000, FSA, pp. 5.10-9 – 5.10-10.

²⁰ Ex. 2000, FSA, p. 5.10-10.

²¹ Ex. 2000, FSA, pp. 5.10-10 – 5.10-12.

²² Ex. 2000, FSA, p. 5.10-11.

exposed to chemicals from the site. When the number is greater than 1, non-cancer health effects are possible, but not certain.²³

The assessment also considers risk from all cancer-causing chemicals from project emissions. The risk that is calculated is not meant to project the actual expected incidence of cancer, but rather a theoretical upper-bound estimate based on the worst-case assumptions. Cancer risk is the likelihood that a person would develop cancer. It is expressed in terms of chances per million of developing cancer over a lifetime from exposure to a chemical contaminant.²⁴ An incremental cancer risk greater than 10 in one million from a project should be regarded as suggesting a potentially significant carcinogenic impact on public health.²⁵ The conservative nature of the screening assumptions used means that the actual cancer risks from project emissions would be considerably lower than estimated.²⁶

If the screening analysis were to predict a risk below significance levels, no further analysis would be necessary, and the source would be considered acceptable with regard to carcinogenic effects. If, however, the risk were to be above the significance level, then further analysis using more realistic site-specific assumptions would be performed to obtain a more accurate estimate.²⁷ If, after refined assumptions, the project's risk is still found to exceed the significance level of 10 in one million, staff would recommend appropriate measures to reduce the risk to less than significant levels. If, after all feasible risk reduction measures have been considered and a refined analysis still identifies a cancer risk of greater than 10 in one million, the risk would be significant and unmitigable.²⁸

b. Impact Assessment and Mitigation

Willow Rock is evaluated using the CEQA Public Health checklist question, whether it would expose sensitive receptors to substantial pollutant concentrations or result in other public health impacts and the above-mentioned thresholds of significance.²⁹

1. Construction

The construction phase of the Willow Rock project is expected to take approximately 60 months, followed by several months of startup and commissioning. Construction-related emissions are temporary and localized, resulting in no long-term effects to the public. Project construction emissions will result from the combustion of fuel in vehicles and equipment, fugitive dust emissions from wind erosion, land clearing and materials movement, rock

²³ Ex. 2000, FSA, p. 5.10-11.

²⁴ Ex. 2000, FSA, p. 5.10-12.

²⁵ Ex. 2000, FSA, p. 5.10-14.

²⁶ Ex. 2000, FSA, p. 5.10-12.

²⁷ Ex. 2000, FSA, p. 5.10-12.

²⁸ Ex. 2000, FSA, p. 5.10-15.

²⁹ Ex. 2000, FSA, pp. 5.10-7 – 5.10-8.

screening and crushing, concrete batch plant operations, and travel on paved and unpaved roads.³⁰

A. Fugitive Dust

Fugitive dust is defined as dust particles that are introduced into the air from vehicle and construction equipment, including grading, truck loading/dumping, and travel on paved and unpaved roadways during project construction. Fugitive dust emissions can create a nuisance causing adverse effects.³¹

The effects of fugitive dust on public health are covered in the **Air Quality** section of this Decision which includes mitigation measures in Conditions of Certification **AQ-SC3** (Construction Fugitive Dust Control) and **AQ-SC4** (Dust Plume Response Requirement) to prevent fugitive dust plumes from leaving the project boundary. As long as the dust plumes are kept from leaving the project site, there will be no significant concern of fugitive dust adversely affecting public health.³²

B. Diesel Exhaust

The primary air toxic pollutant of concern from construction activities is diesel particulate matter generated during movement of diesel-fueled construction equipment and vehicles.³³

Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the United States Environmental Protection Agency (USEPA) as HAPs and by CARB as TACs. The solid material in diesel exhaust is known as diesel particulate matter. Diesel exhaust is also characterized by CARB as “particulate matter from diesel-fueled engines.”³⁴

Screening health risk assessments were conducted for the construction period due to emissions of diesel particulate matter. Health risks were calculated for an exposure period of 5 years. The construction health risk assessments were run for the architectural berm and no-architectural berm options with identical receptor grids but different fence lines. **Table 6.C-2** only reports the Without Berm option because its health risk assessment results are higher than for the With Berm option.³⁵

³⁰ Ex. 2000, FSA, p. 5.10-16.

³¹ Ex. 2000, FSA, p. 5.10-16.

³² Ex. 2000, FSA, p. 5.10-16.

³³ Ex. 2000, FSA, p. 5.10-16.

³⁴ Ex. 2000, FSA, p. 5.10-16.

³⁵ Ex. 2000, FSA, p. 5.10-17.

TABLE 6.C-2 Construction Hazard/Risk from Diesel Particulate Matter³⁶			
Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	Acute Non-Cancer Hazard Index (HI) (unitless)
PMI¹	273	0.1192	-
MEIR²	3.05	0.00133	-
MEIS³	0.711	0.00031	
MEIW⁴	0.36	0.00133	-
EKAPCD Significance Threshold	10	1	1 ⁵

The health risk assessment results for the construction activities show a maximum off-property residential cancer risk (maximally exposed individual resident or MEIR) of 3.05 in one million. This impact is below the significance threshold of 10 in one million. Even though the calculated point of maximum impact or PMI (i.e., 273 in one million) is higher than the threshold, it is on the immediate eastern fence line and does not represent either actual worker or actual residential receptor locations. All chronic risk exposures are less than the significance criteria of 1.0 at all receptors for both the architectural berm and no-architectural berm options and thus, the project will not contribute to any type of chronic impact on human health.³⁷

Per request by staff's Data Request 39, the Applicant provided a map of the 10-in-one-million risk with this response as Attachment DR39-1 for both the With Berm and Without Berm options. There are no structures or buildings within the extent of the 10-in-one-million risk (Without Berm option) isopleth. Therefore, it is not expected that any member of the public will be exposed to this level of risk since there would be no public member residing or present in this very limited area with continuous exposure over the five (5) year construction period. Also, the project will be required to comply with the Condition of Certification **AQ-SC5** to include maximum use of Tier 4 construction equipment, to the extent that Tier 4 construction equipment is available to reduce the construction diesel particulate matter emissions.³⁸

³⁶ Source: Ex. 2000, FSA, p. 5.10-17 (Table 5.10-2). Notes:

¹ Point of Maximum Impact (PMI). It is on the immediate eastern project fence line.

² Maximally Exposed Individual Resident (MEIR). It is approximately 2,200 feet northwest of the project boundary.

³ Maximally Exposed Individual Sensitive Receptor (MEIS). It is the Rosamond Elementary School and approximately 2.8 miles southeast of the project boundary.

⁴ Maximally exposed individual worker (MEIW). It is at the same location of MEIR.

⁵ The EKAPCD threshold value is for all the pollutants. However, due to insufficient information of a specific value for an acute REL, there is no acute REL for diesel particulate matter, and it was not possible to conduct an assessment for its acute health effects.

³⁷ Ex. 2000, FSA, p. 5.10-18.

³⁸ Ex. 2000, FSA, p. 5.10-18 (citing Ex. 1111).

Also, the risk numbers of MEIR, MEIS and MEIW are less than the threshold of 10 in one million. Therefore, there is no significant cancer health risk from the toxic air emissions from construction activities.³⁹

The predicted chronic health index at the PMI, MEIR, MEIS and MEIW are 0.1192, 0.00133, 0.00031 and 0.00133, respectively. The chronic hazard indices for diesel exhaust during construction activities are all lower than the significance level of 1.0. This means that there will be no chronic non-cancer impacts expected from construction activities.⁴⁰

Accordingly, public health risk from diesel exhaust associated with construction will be less than significant and no additional mitigation is necessary.⁴¹

C. Valley Fever

Construction could disturb a certain percentage of topsoil that could harbor the *Coccidioides* spores, which could expose humans to the risk of Valley Fever. On-site and off-site workers, visitors and nearby residents could be exposed from inhaling these fungal spores from wind-blown dust generated from soil excavation work. As mentioned above, Kern County has higher rates of reported cases of Valley Fever compared to other areas in California and is in a highly endemic area.⁴²

Based on recommendations from the Center for Disease Control and the California Department of Public Health and the conditions proposed by Kern County Planning and Natural Resources Department, Condition of Certification **PH-1** will ensure that exposure to Valley Fever will be reduced to the greatest extent feasible.⁴³

Mitigation measures used to control dust will be effective to control spore dispersal. Exposure to spores will be reduced through the Applicant's compliance with specific mitigation measures, including **AQ-SC3** (Construction Fugitive Dust Control) and **AQ-SC4** (Dust Plume Response Requirement) for the purposes of preventing all fugitive dust plumes, including spores, from leaving the project boundary. Keeping the dust plumes within the project boundary will limit potential for exposure to Valley Fever to adjacent residents, farm workers, and members of the public traveling or recreating in proximity to the proposed project.⁴⁴

³⁹ Ex. 2000, FSA, p. 5.10-18.

⁴⁰ Ex. 2000, FSA, p. 5.10-18.

⁴¹ Ex. 2000, FSA, p. 5.10-18.

⁴² Ex. 2000, FSA, p. 5.10-18.

⁴³ Ex. 2000, FSA, p. 5.10-20; see also 8/21/25 Evidentiary Hearing RT pp. 252:17 – 256:12, 268-271:4.

⁴⁴ Ex. 2000, FSA, p. 5.10-20.

With the implementation of Conditions of Certification **PH-1**, **AQ-SC3**, and **AQ-SC4**, Valley Fever will not be a major concern for the proposed project for either the workers or the public.⁴⁵

Therefore, with the implementation of Conditions of Certification **PH-1**, **AQ-SC3**, and **AQ-SC4**, public health risk from construction of Willow Rock will be less than significant.

2. Operation

During the operational phase, three diesel generators (no more than 2.5 MW per generator) will supply emergency power for critical loads. Additionally, a single diesel fire pump will be onsite to provide fire water pumping in critical situations. These engines are the only stationary sources that will combust fossil fuel and are anticipated to operate for up to 50 hours each per year for testing and maintenance.⁴⁶

The risk assessment was conducted in accordance with guidance established by the California Office of Environmental Health Hazard Assessment (OEHHA) and CARB. The operational health risk assessment assumed a conservative 30-year continuous exposure duration for residential and sensitive receptors and a 25-year exposure duration for workers.⁴⁷

The operation health risk assessments were run for the With Berm and Without Berm options with identical receptor grids but different fence lines. The health risk assessment results for both scenarios are the same. Staff reviewed the Applicant's modeling files and agreed with the inputs used by the Applicant and the outputs from the model for carcinogenic and chronic health risks.⁴⁸

The results of Applicant's HRA for project operation are presented in **Table 6.C-3**, which shows that the cancer risks and chronic hazard indexes at the PMI, MEIR, MEIS, and MEIW during operation will be less than the EKAPCD's significance thresholds of 10 in one million and 1, respectively. It should be noted that the risk values shown in **Table 6.C-3** are the highest of those modeled for each type of sensitive receptors. The risk values at other locations for each type of receptors will be lower than those shown in the table. Therefore, the health risks of the project's operation will be a less than significant impact.⁴⁹

⁴⁵ Ex. 2000, FSA, p. 5.10-20.

⁴⁶ Ex. 2000, FSA, p. 5.10-21.

⁴⁷ Ex. 2000, FSA, p. 5.10-23.

⁴⁸ Ex. 2000, FSA, p. 5.10-23.

⁴⁹ Ex. 2000, FSA, p. 5.10-23.

TABLE 6.C-3 Operation Hazard/Risk from Diesel Particulate Matter⁵⁰			
Receptor Type	Cancer Risk Impact (in one million)	Chronic Non-Cancer Hazard Index (HI) (unitless)	Acute Non-Cancer Hazard Index (HI) (unitless)
PMI¹	3.16	7.14E-04	-
MEIR²	0.0177	4.00E-06	-
MEIS³	0.00884	2.00E-06	-
MEIW⁴	0.0052	4.00E-06	-
EKAPCD Significance Threshold	10	1	1 ⁵

The cancer burden can be calculated by multiplying the cancer risk at a census block centroid by the number of people who live in the census block and adding up the estimated number of potential cancer cases across the zone of impact. The result of this calculation is a single number that is intended to estimate the number of potential cancer cases within the population that was exposed to the emissions for a lifetime (70 years). OEHHA requires a 70-year exposure duration to estimated cancer burden or provide an estimate of population-wide risk.⁵¹

The Applicant conducted a cancer burden analysis. It was based on a 70-year cancer risk analysis using an isopleth of 1×10^{-6} and the estimated population within this isopleth area (<50 individuals) showing a burden value of 0.00005. Even though a cancer burden threshold of significance value was not identified for the EKAPCD, 0.00005 is below the significance threshold value of 1 established by the State of California.⁵²

c. Cumulative Impacts

A project would result in a significant adverse cumulative impact if its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects

⁵⁰ Source: Ex. 2000, FSA, p. 5.10-23. Notes:

1 Point of maximum impact (PMI). The PMI in both scenarios is located on the eastern fence line and is not a residential receptor.

2 Maximally exposed individual residential (MEIR). It is approximately 2,023 feet northwest of the project boundary for Architectural berm Option, and approximately 2,229 feet northwest of the project boundary for No-Architectural berm Option.

3 Maximally Exposed Individual Sensitive (MEIS). The MEIS in both scenarios is the Rosamond Elementary School and approximately 2.8 miles southeast of the project boundary.

4 Maximally exposed individual worker (MEIW). It is approximately 2,200 feet northwest of the project boundary for Architectural berm Option, and approximately 2,211 feet northwest of the project boundary for No-Architectural berm Option.

5 The EKAPCD threshold value is for all the pollutants. However, due to insufficient information of a specific value for an acute REL, there is no acute REL for diesel particulate matter, and it was not possible to conduct an assessment for its acute health effects.

⁵¹ Ex. 2000, FSA, p. 5.10-24.

⁵² Ex. 2000, FSA. p. 5.10-24.

of other current projects, and the effects of probable future projects.⁵³ As for cumulative impacts for cumulative hazards and health risks, if the implementation of the proposed project, as well as the past, present, and probable future projects, would not cumulatively contribute to regional hazards, then it could be considered a less than cumulatively considerable impact.⁵⁴

The existing, approved, pending and proposed projects of potential sources of criteria air pollutants within six miles of Willow Rock include:

- Mojave Micro Mill (1.3 miles to the project)
- Edwards Air Force Base Solar Project (2.5 miles to the project)
- True North Renewable Energy (5.4 miles to the project)
- Capella Solar (5.4 miles to the project)
- Organics Energy Solar (5.4 miles to the project)
- Golden Queen Mining Company, LLC (5.5 miles to the project)
- Sanborn Solar (5.9 miles to the project)⁵⁵

As discussed above, the health impacts from project construction will be less than significant with mitigation incorporated on the issue of Valley Fever, and the health impacts from project operation will be less than significant. The maximum cancer risk and chronic non-cancer hazard index of operations emissions from the project for the PMI, MEIR, MEIS and MEIW are all below levels of corresponding significance. While air quality cumulative impacts could occur with sources within a six-mile radius, cumulative public health impacts from TACs are usually not significant unless the emitting sources are extremely close to each other, within a few blocks, not miles. The contribution of Willow Rock to both cancer risk and chronic non-cancer impacts will be very small even in a cumulative context including other regional sources; its contribution to area health impacts will thus be less than significant in a cumulative context. Therefore, the proposed project, even when combined with these other projects, will not contribute to cumulative impacts in the area of public health.⁵⁶

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 6.C-4 demonstrates that, with implementation of specific Conditions of Certification, the proposed project will comply with applicable LORS.

⁵³ Ex. 2000, FSA, p. 5.10-24, citing Cal. Code Regs., tit. 14, § 15130.

⁵⁴ Ex. 2000, FSA, p. 5.10-24.

⁵⁵ Ex. 2000, FSA, pp. 5.10-24 – 5.10-25.

⁵⁶ Ex. 2000, FSA, p. 5.10-25.

TABLE 6.C-4 Laws, Ordinances, Regulations, and Standards Applicable to Public Health		
Applicable LORS	Description Of LORS	Discussion/Conclusion
Federal		
Clean Air Act section 112 (Title 42, U.S. Code section 7412).	National Emission Standards for Hazardous Air Pollutants (NESHAP)	Compliant. Based on the results of the health risk assessment, the project's cancer and chronic health risks do not exceed acceptable levels. The facility will comply with applicable federal, state, and EKAPCD rules and regulations.
National Emission Standards for Hazardous Air Pollutants (NESHAP) Subpart ZZZZ	National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines. The only requirement under Subpart ZZZZ is that the units comply with the requirements of NSPS Subpart IIII.	Compliant. The gensets will comply with NESHAP Subpart ZZZZ by complying with the requirements of NSPS Subpart IIII. The project will include three diesel-fired emergency generators and one diesel fire pump. The proposed emergency engine emission units will likely use catalytic oxidation and/or selective catalytic reduction, as well as diesel particulate filters to meet Tier 4 standards, meaning their emissions will not exceed any of the emission limitations of this subpart. The proposed fire pump engine will comply with the Tier 3 standard that meets the requirements of both subparts.
State		
California Health and Safety Code section 41700	This section requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."	Compliant. The Conditions of Certification and the EKAPCD Authority to Construct processes are developed to ensure that no adverse public health effects or public nuisances result from operation of the project.
The Air Toxics "Hot Spots" Information and Assessment Act	The Act requires TAC emissions be quantified to determine whether a risk assessment must be	Compliant. The project will participate in the AB 2588 inventory and reporting program,

TABLE 6.C-4 Laws, Ordinances, Regulations, and Standards Applicable to Public Health		
Applicable LORS	Description Of LORS	Discussion/Conclusion
(Assembly Bill [AB] 2588, 1987, Connelly) or California Health and Safety Code sections 44330.	conducted, that the public be notified of significant risks posed by nearby facilities, and that emissions which result in a significant risk be reduced.	as required and implemented by EKAPCD. Based on the health risk assessment results, the project's cancer and chronic health risks do not exceed acceptable levels.
Local		
EKAPCD Regulation II, Rule 201.2 (synthetic minor sources)	A stationary source would be considered "synthetic minor" stationary sources of HAPs if it emits or has the potential to emit HAPs quantities equal to or exceeding the lesser of the following thresholds: 1. 10 tons per calendar year or more of a single HAP listed in Section 112(b) of the Federal Clean Air Act; 2. 25 tons per calendar year or more of any combination of HAPs; or 3. Any such lesser quantity as the EPA may establish by rule.	Compliant. Emissions of hazardous air pollutants (HAPs) from the operational Willow Rock project will be less than 10 tons per year of an individual HAP and 25 tons per year total HAP and will therefore be classified as a minor source of HAP.
EKAPCD Regulation II, Rule 208.2.II.F & G (finding of no significant impact)	Any increase in the quantity or type of toxic air contaminants emitted from the facility is shown by a risk assessment prepared in accordance with current Cal-EPA guidelines to have increased cancer risk at any receptor outside the facility perimeter less than one in one million (1×10^{-6}) and total hazard index at any receptor outside the facility perimeter less than 0.2. And the proposed project would not have a significant impact due to cumulative effects of successive projects of the same type at the same location.	Compliant. The health risk assessment shows that risks from Willow Rock operations will be less than these values.
EKAPCD Regulation II, Rule 210.9 (construction of major stationary source of HAP)	This rule is to require new and reconstructed major sources of HAPs to utilize Best Available Control Technology for air toxics (T-BACT).	Compliant. The Willow Rock will not be a major stationary source of HAPs; therefore, this rule will not apply.

TABLE 6.C-4 Laws, Ordinances, Regulations, and Standards Applicable to Public Health		
Applicable LORS	Description Of LORS	Discussion/Conclusion
EKAPCD Regulation IV, Rule 423 (National Emissions Standards for Hazardous Air Pollutants [NESHAP, 40 CFR 63 Subpart ZZZZ: National Emissions Standards for Reciprocating Internal Combustion Engines])	This rule incorporates by reference the federal NESHAP under 40 CFR Parts 61 and 63; applicability is discussed under federal LORS.	Compliant. This rule incorporates by reference the federal NESHAP under 40 CFR Parts 61 and 63; applicability is discussed under federal LORS.

The evidence indicates, and we find, that with the imposition and implementation of the conditions of certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding public health.

iv. Agency and Public Comment

No comments have been received regarding the topic of public health besides those already addressed in the FSA.⁵⁷

v. Findings of Fact

Based on the evidence, the CEC makes the following findings:

1. Construction and operation of Willow Rock will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.
2. Exposure to diesel particulate emissions from construction of Willow Rock will be temporary and localized and will not result in long-term carcinogenic or non-carcinogenic health effects. Public health risk associated with construction is expected to be less than significant and no additional mitigation is necessary.
3. The project will be required to comply with Condition of Certification **AQ-SC5** to include maximum use of Tier 4 construction equipment, to the extent that Tier 4 construction equipment is available to reduce the construction diesel particulate matter emissions. Exposure to Willow Rock construction-related diesel particulate emissions will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.

⁵⁷ See Ex. 2000, p. 5.10-25 – 5.10-27; 8/21/25 Evidentiary Hearing RT pp. 48:21 – 68:8, 277:3 – 278:6.

4. Exposure to fugitive dust due to excavation and construction activities at Willow Rock will be mitigated to insignificant levels by implementing Conditions of Certification **AQ-SC1** through **AQ-SC5** to reduce dust production and dispersal.
5. Emissions of criteria pollutants, as discussed in the **Air Quality** section of this Decision, will be mitigated to levels consistent with applicable state and federal standards.
6. A health risk assessment is used to determine if people might be exposed to noncriteria pollutants or toxic air contaminants at unhealthy levels.
7. The standard approach currently used for a health risk assessment involves four steps: 1) hazard identification; 2) exposure assessment; 3) dose-response assessment; and 4) risk characterization.
8. Screening level health risk assessments of Willow Rock's potential health effects due to emissions of toxic air contaminants were conducted.
9. The health risk assessments are usually based on worst-case assumptions using the highest levels of pollutants that could be emitted from the plant assuming the worst weather conditions and calculating effects at the point of maximum impact to the most sensitive receptors so that actual risks are expected to be much lower at any other location.
10. With the implementation of Condition of Certification **PH-1**, along with Conditions of Certification, **AQ-SC3** (Construction Fugitive Dust Control) and **AQ-SC4** (Dust Plume Response Requirement), Valley Fever will not be a major concern for the proposed project for either the workers or the public.
11. With the implementation of Condition of Certification **AQ-SC1** through **AQ-SC5**, and **PH-1**, the potential impacts related to public health from construction of Willow Rock will be less than significant.
13. Cumulative public health impacts from noncriteria pollutant emissions can be significant if other emission sources are close enough to the proposed Willow Rock site that the combined emissions will produce a significant cumulative risk where insignificant individual risks currently exist.
14. Cumulative impacts from non-criteria (i.e., toxic) pollutants were analyzed in accordance with the provisions of CEQA and are not found to be cumulatively considerable.
15. Construction and operation of Willow Rock will not cause a significant health effect or significant impact related to public health.
16. There is no evidence in the record that any relevant source of noncriteria pollutant emissions were omitted from the cumulative public health analysis.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to public health.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in significant direct, indirect, or cumulative public health impacts.

6 Public Health and Safety

D. Worker Safety and Fire Protection

i. Introduction

This section of the Decision focuses on whether proposed health and safety plans for Willow Rock Energy Storage Center will comply with all applicable LORS and, thus, are adequate to protect industrial workers. We also address the availability and adequacy of fire protection and emergency response services.

Evidence on the topic of Worker Safety and Fire Protection is contained in Exhibits 1025, 1032-1033, 1040-1041, 1053, 1119-1120, 1132, 1155, 1233, 1323, and 2000,¹ and in the Reporter's Transcript of the Evidentiary Hearing.²

a. Setting and Project Description

Willow Rock will be on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southeastern Kern County, California. Willow Rock will be served by the Kern County Fire Department.³

The California Department of Forestry and Fire Protection (CAL FIRE) has not assigned a Fire Hazard Severity Zone rating for the area encompassing Willow Rock and the gen-tie line. Willow Rock does not fall within a State Responsibility Area.⁴

For detailed information regarding the setting and project description, including location of the facility and the equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

ii. Environmental Analysis of Worker Safety and Fire Protection

Workers at the facility will operate equipment and handle hazardous materials and may face hazards that can result in accidents and serious injury.⁵ During construction and operation of the project, there is the potential for both small fires and major structural fires.⁶ This section

¹ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

² 8/21/25 Evidentiary Hearing RT pp. 226 - 268-271:4.

³ Ex. 2000, FSA, p. 4.4-1.

⁴ Ex. 2000, FSA, p. 4.4-1.

⁵ Ex. 2000, FSA, p. 4.4-5.

⁶ Ex. 2000, FSA, p. 4.4-19.

of the Decision assesses whether the worker safety and fire protection measures are adequate to:

- Comply with applicable safety LORS.
- Protect the workers during construction, commissioning, and operation of the facility.
- Protect against fire.
- Provide adequate emergency response procedures.⁷

a. Thresholds of Significance

Compliance with applicable LORS will help ensure workers are adequately protected from health and safety hazards. Various plans must be developed to ensure the protection of worker health and safety, as well as compliance with applicable worker safety and fire protection LORS, at the federal, state, and local levels.⁸

b. Impact Assessment and Mitigation

Worker safety and fire protection are regulated through LORS, at the federal, state, and local levels. Protective measures are employed to eliminate or reduce these hazards or to minimize the risk through engineering controls, special training, protective equipment, and procedural controls. The Compliance Project Manager (CPM) will ensure that the design, construction, operation, and closure of the project facilities comply with the terms and conditions of this Decision.⁹

The CPM is the central contact person for the CEC during project preconstruction, construction, operation, emergency response, and closure. The CPM will consult with the appropriate responsible parties when handling compliance issues, disputes, complaints, and amendments.¹⁰

When the CEC authorizes a project owner to proceed with detailed design and construction, the CEC selects a qualified third-party firm to act on its behalf as a Delegate Chief Building Official (DCBO). In this capacity, the selected DCBO performs its design review, plan check, and construction inspection duties in accordance with the California Building Standards Code and the CEC's Decision for the facility.¹¹

In addition to the measures discussed below, **WORKER SAFETY-11** requires the project owner to ensure a coordinated approach to worker safety and fire detection and suppression above and below ground, develop, implement, and train for a command and control system,

⁷ Ex. 2000, FSA, p. 4.4-5.

⁸ Ex. 2000, FSA, pp. 4.4-5 – 4.4-6.

⁹ Ex. 2000, FSA, pp. 4.4-5 – 4.4-6.

¹⁰ See Ex. 2000, FSA, pp. 9-3 – 9-4, and section 11.

¹¹ Ex. 2000, FSA, p. 4.1-3.

and hold a pre-construction and excavation conference with the Compliance Project Manager, Cal OSHA Mining and Tunneling Unit, the DCBO, and the DCBO Safety Monitor so that all safety professionals meet and confer in one room at the same time.

1. Worker Safety

Industrial environments are potentially dangerous during construction, commissioning, operation, and decommissioning of facilities. Workers at the project will be exposed to underground hazards such as silica dust, increased levels of radiation, loud noises, moving equipment, trenching/excavation accidents, electrical hazards, dust hazards, use of explosives, and confined space incidents when excavating 1.3 million cubic yards of crushed rock extracted during construction of the cavern. The workers could experience falls, trips, burns, lacerations, being struck by objects, and numerous other potential injuries.¹²

There are many inherent dangers of working underground that include (but not limited to) accidents, fires, toxic fumes, toxic substances, radiation, and cave-ins, and the dangers posed by the above-ground facilities that include high-pressure compressed air tanks, pipes, pressure vessels, electrical generators, and heat exchangers. For example, safety issues with industrial heat exchangers primarily involve the risk of leakage due to corrosion, erosion, or improper design, which can lead to the release of hazardous fluids, potential fires or explosions, and exposure to hot or toxic substances, especially during maintenance or when operating under extreme temperature and pressure conditions; other concerns include improper material selection, vibration, fouling, and inadequate monitoring systems. Safety concerns with compressed air electricity generation primarily revolve around the high pressure involved, which can lead to potential risks like explosions, projectile hazards from ruptured components, and the presence of contaminants like oil and water in the compressed air, which could cause fires if ignited in the system; proper maintenance and safety protocols are crucial to mitigate these risks. The presence of numerous high-pressure tanks, pipes, and valves pose the threat of worker injuries or deaths due to the sudden release of energy during maintenance if not properly locked-out and tagged-out, and the stored energy properly released from the system. Given this multi-faceted complex project, the engineering, administrative, and training programs proposed by the Applicant need to be augmented with additional worker safety requirements to decrease risks and increase safety at the surface facilities and provide a structure for underground fire control and rescue.¹³

Well-defined policies and procedures, training, and hazard recognition and control at the facility are important to minimize hazards and protect workers. Here, a Construction Safety and Health Program and an Operations Safety and Health Program will ensure compliance with the applicable LORS and minimize worker hazards during construction and operation.¹⁴

¹² Ex. 2000, FSA, pp. 4.4-5 – 4.4-6.

¹³ Ex. 2000, FSA, p. 4.4-23.

¹⁴ Ex. 2000, FSA, p. 4.4-6.

A. Construction Safety and Health Program

The greatest hazard to workers during construction will be the excavation of the underground cavern. The cavern will be constructed by conventional mining methods including drilling and controlled detonation.¹⁵ Condition of Certification **WORKER SAFETY-5** requires the preparation and implementation of a thorough and comprehensive Controlled Detonation Plan before any explosives are used onsite.¹⁶

Water from drilling will be used for reservoir fill or disposed offsite by a licensed hauler. Since the water will contain dissolved and suspended soils and rock dust that include toxic substances (e.g., hexavalent chromium), it could be determined to be a hazardous waste. The same holds true for all soils and rock removed by either method. Additionally, a temporary rock crushing facility will be onsite for up to two years. A rock crusher is a large, heavy, and complex machine that presents many safety hazards to workers where they could fall, or be crushed, or cut. It also has the potential to emit large amounts of dust, and therefore will use a combination of water sprays and a baghouse to control fugitive dust and fine particulate matter emissions.¹⁷

The same holds true for the temporary concrete batch plant which will operate onsite for up to 15 months. These batch plants present the worker safety and health hazards with the additional significant health risk of the generation of high amounts of dust during operations. This dust poses health risks to workers and nearby residents due to its composition which includes silica dust and hexavalent chromium. Control of exposure to wet concrete can result in skin irritation or even first-, second- or third-degree chemical burns. The concrete batch plant will require the implementation of dust control measures such as dust collectors, water sprays, and enclosing conveyor belts to minimize airborne particles.¹⁸

Construction Safety Orders applicable to project construction are promulgated by the California Occupational Safety and Health Administration (Cal OSHA) and are published at California Code of Regulations, Title 8, 1502, et seq. The Construction Safety and Health Program will include the following major programs:

- Construction Exposure Monitoring Program which shall include monitoring wastewater from the cavern initial access construction if Method 1 is chosen, and routine sampling of all excavated dust, soil, and rock removed from the cavern for the determination of hazardous wastes.
- Construction Injury and Illness Prevention Program (Cal. Code Regs., tit. 8, § 1509).
- Construction Fire Protection and Prevention Program (Cal. Code Regs., tit. 8, § 1920).

¹⁵ Ex. 2000, FSA, p. 4.4-6.

¹⁶ Ex. 2000, FSA, p. 4.4-8.

¹⁷ Ex. 2000, FSA, p. 4.4-9.

¹⁸ Ex. 2000, FSA, p. 4.4-9.

- Personal Protective Equipment Program (Cal. Code Regs., tit. 8, §§ 1514 to 1522).
- Construction Hazardous Materials Business Plan.
- Construction Spill Prevention, Control, and Countermeasure Plan (In accordance with section 311 of the Clean Water Act).
- Construction Soil Management Plan (Cal. Code Regs. tit. 8, § 5192).
- Construction Emergency Action Program/Plan (Cal. Code Regs., tit. 8, § 3220).
- Controlled Detonations Plan for any explosives used during construction.
- Cal. Code Regs. tit. 8, §§ 8403 to 8568 Tunnel Safety Orders (including § 7091 of the Mine Safety Orders addressing radioactive [in this case radon] protection by following the radiation standards of the Mine Safety and Health Administration for Metal and Non-Metallic Underground Mines, published July 31, 1969, February 25, 1970, and December 8, 1970).
- Heat Illness Prevention Program (Cal. Code Regs., tit. 8, §§ 3395 and 3396).
- Compressed Air Safety Orders (Cal. Code Regs., tit. 8, §§ 1200 to 1280).
- Silica Dust Safety Orders (Cal. Code Regs., tit. 8, § 5204).
- Protection from Wildfire Smoke (Cal. Code Regs., tit. 8, § 5144.1).
- Control of Hazardous Energy (Lock Out/Tag Out) (Cal. Code Regs., tit. 8 § 3314).
- The Department of Labor, Occupational Safety and Health Administration (OSHA) 26 CFR 1926.800 Underground Construction.¹⁹

Various additional safety and health programs are based on General Industry Safety Orders (Cal Code Regs., tit. 8, §§ 3200 to 6184) and Electrical Safety Orders (Cal Code Regs., tit. 8, §§ 2299 to 2974).²⁰

The Construction Safety and Health Program for the project includes safety protocols for a temporary portable rock crushing facility and a temporary concrete batch plant onsite during construction. Condition of Certification **WORKER SAFETY-1** requires the project owner to identify and provide the required elements and detailed plans of the Construction Safety and Health Program to the Compliance Project Manager for approval and to the Kern County Fire Department for review and comment prior to the start of construction of the project.²¹

B. Operations and Maintenance Safety and Health Program

An Operations and Maintenance Safety and Health Program will be prepared prior to the start of commissioning and operations at the project. The measures in these plans will be derived

¹⁹ Ex. 2000, FSA, p. 4.4-9.

²⁰ Ex. 2000, p. 4.4-10.

²¹ Ex. 2000, p. 4.4-10.

from applicable sections of state and federal law. Both safety and health programs will comprise numerous more specific programs including the following major programs and plans:

- Injury and Illness Prevention Program (Cal Code Regs., tit. 8, § 3203).
- Fire Protection and Prevention Program (Cal Code Regs., tit. 8, § 3221).
- Fire Protection System Impairment Program (2020 NFPA 850 Section 17.4.2 & Chapter 9 California Fire Code Sections 901.7, 901.7.1-901.7.6).
- Emergency Action Plan (Cal Code Regs., tit. 8, § 3220).
- Personal Protective Equipment Program (Cal Code Regs., tit. 8, §§ 3401 to 3411).
- Hazardous Materials Business Plan.
- Spill Prevention, Control, and Countermeasure Plan.²²

In addition, other requirements under General Industry Safety Orders (Cal Code Regs., tit. 8, §§ 3200 to 6184) and the Electrical Safety Orders (Cal Code Regs., tit. 8, §§ 2299 to 2974) are applicable to this project. The use of herbicides to control vegetation growth requires adherence to California Code of Regulations, title 8 section 5155 and other relevant sections regarding worker exposure to toxic substances.²³

There is a risk of cavern seal failure for this project, but it will be mitigated by the project's engineering design which allows the pressure to remain constant by the hydrostatic column of water and the compensation reservoir because cavern seal failure is most often caused by fatigue and repeated pressurization and de-pressurization.²⁴

Additional LORS called safe work practices apply to the project. The construction and operations safety programs will address safe work practices. The components of these programs include, but are not limited to, the programs found in the subsection "Construction Safety and Health Program."²⁵

Condition of Certification **WORKER SAFETY-2** requires identifying and providing elements and detailed plans of the Operation Health and Safety Program to the CEC's Compliance Project Manager for approval and to the Kern County Fire Department for review and comment prior to the start of construction of the project.²⁶

²² Ex. 2000, pp. 4.4-10 – 4.4-11.

²³ Ex. 2000, p. 4.4-11.

²⁴ Ex. 2000, FSA, p. 4.4-11.

²⁵ Ex. 2000, FSA, p. 4.4-15.

²⁶ Ex. 2000, FSA, p. 4.4-11.

C. Safety & Health Program Monitoring

Condition of Certification **WORKER SAFETY-3** requires the project owner to designate and provide a site Construction Safety Supervisor. OSHA standards require employers to provide a safe workplace during construction. Many OSHA and Cal OSHA standards, documents, and directives refer to a "Competent Person," which OSHA usually defines as an individual who, by way of training and/or experience, is knowledgeable of standards, can identify workplace hazards relating to the specific operations, is designated by the employer, and has authority to take appropriate action. Condition of Certification **WORKER SAFETY-3** meets the intent of OSHA to provide for a safe workplace during construction.²⁷

Accidents, fires, and worker deaths are known to have occurred in the past due to the failure to recognize and control safety hazards and the inability to adequately supervise compliance with occupational safety and health regulations. Safety problems have been documented by CEC compliance staff in safety audits conducted at several projects under construction.²⁸

To reduce and/or eliminate these hazards, it is necessary for the CEC to have a professional Safety Monitor available to do on-site verification checks of ongoing compliance with Cal OSHA regulations and periodically audit safety compliance during construction, commissioning, and the hand-over to operational status. These requirements are outlined in Condition of Certification **WORKER SAFETY-4**. A Safety Monitor, hired by the project owner, yet reporting to the DCBO and CPM, will ensure that safety procedures and practices are fully implemented at all projects certified by the CEC.²⁹

D. Hexavalent Chromium

A potential health hazard is exposure to hexavalent chromium due to water which will be obtained from the Antelope Valley East Kern (AVEK) Water Agency. The most recent water quality report shows that, for the most part, the water quality is excellent. However, it contains hexavalent chromium. It will be the source of on-site uses, including filling of the water tank used for fire control, and repeatedly for dust suppression.³⁰

Dust control is both necessary and required and will include the use of water to dampen the dry soil. When this water is used for dust control, a build-up of contaminants either dissolved or suspended in the groundwater could build-up to harmful amounts after being repeatedly applied several times a day for multiple years to the ground for dust control during hot weather. Evaporation of the water could leave a residue of hexavalent chromium and other contaminants on the dirt roads which could then be picked up by the wind or vehicles as dust. This contaminated dust could then be inhaled or ingested by workers over time and lead to

²⁷ Ex. 2000, FSA, pp. 4.4-15 – 4.4-16.

²⁸ Ex. 2000, FSA, p. 4.4-16.

²⁹ Ex. 2000, FSA, p. 4.4-16.

³⁰ Ex. 2000, FSA, p. 4.4-17.

worker injury or illness. Another route of worker exposure could be via repeated ingestion of significant amounts of the water from drinking fountains or dermal (skin) problems if used for showering.³¹

To ensure that the water used for dust control is not heavily contaminated with hexavalent chromium or other hazardous substances in the water supply, and that no buildup occurs in soils on dirt roads on the project site, Condition of Certification **WORKER SAFETY-6** requires the project owner to conduct laboratory analyses of the water proposed for use for dust control and drinking and analysis of surface soils on the dirt roads on the site.³²

In addition to water being a potential source of worker exposure to hexavalent chromium, the dust, soil, and rock generated by the construction of the cavern has the potential to generate hazardous waste containing hexavalent chromium and perhaps other metals naturally occurring below ground. Condition of Certification **WORKER SAFETY-1** requires routine sampling and analysis of excavation spoils removed from the cavern according to a sampling and analysis plan prepared by the project owner and approved by the CPM.³³

E. Valley Fever

Valley Fever is caused by inhaling *coccidioidomycosis* spores released from soil during soil disturbance, such as during construction, or wind erosion. Kern County is among the counties that recently have had a high rate of infection. The disease usually affects the lungs and can have potentially severe consequences, especially in at-risk individuals. Construction workers are often the most exposed population due to ground disturbing activities like trenching or excavating at construction sites. Treatment usually includes rest and antifungal medications. No effective vaccine currently exists. Worker exposures to Valley Fever are regulated by Cal OSHA.³⁴

To further minimize potential exposure of workers and the public to Valley Fever during soil excavation and grading, extensive wetting of the soil prior to and during construction activities should be employed and dust masks should be worn at certain times during these activities. Condition of Certification **WORKER SAFETY-7** will require the project owner to develop and implement a Valley Fever Prevention and Response Plan that includes, among other requirements, that the dust control measures found in Conditions of Certification **AQ-SC3** and **AQ-SC4** be supplemented with additional requirements, and that any worker who could be exposed to dust from soil disturbances is trained, before that work begins and annually thereafter.³⁵

³¹ Ex. 2000, FSA, pp. 4.4-17 – 4.4-18.

³² Ex. 2000, FSA, p. 4.4-18.

³³ Ex. 2000, FSA, p. 4.4-18.

³⁴ Ex. 2000, FSA, p. 4.4-18 (citing various sections in California Code of Regulations, Title 8).

³⁵ Ex. 2000, FSA, p. 4.4-18.

Worker safety and health and fire protection issues associated with the two different initial access methods will be addressed by the Conditions of Certification, and in particular, **WORKER SAFETY-1, 3, 4, and 7.**³⁶

2. Fire Hazards

During construction and operation of the project, there is the potential for both small fires and major structural fires. Electrical sparks and shorts, combustion of hydraulic fluid, mineral oil, insulating fluid, or flammable liquids and fuels, controlled detonations, and over-heated equipment, could cause fires at the Willow Rock site.³⁷

Condition of Certification **WORKER SAFETY-9** will require compliance of the project with NFPA 850 and NFPA 122. NFPA Standard 850 requires the development of a Fire Protection Design Basis Document that identifies relevant hazards such as the presence of fuels, lubricating oils, flammable liquids, and electrical equipment. NFPA 122 is the Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities. This standard presents minimum requirements for safeguarding life and property against fire and related hazards associated with diesel-powered equipment and the storage and handling of flammable and combustible liquids at metal and nonmetal underground and surface mining and metal mineral processing plants.³⁸

A. Surface Facilities

There will be numerous industrial facilities constructed and operated at the surface. Many could pose worker safety and health hazards along with fire hazards. Safety issues with compressed air-powered turbines include pressure issues, contamination, and high-pressure accidents. The first significant safety concern is a fire/chemical explosion within the equipment. This is because all the elements necessary for fire or explosion are contained simultaneously in the A-CAES system: oxygen from the air, fuel from the lubricating system or diathermic oil, and heat from the compression process. An additional risk is posed by the stored energy within the compressed air system of pipes, tubes, the cavern, compressors, pressure vessels, heat exchangers, and the turbines. Another is posed by high temperature compressed air.³⁹ Fires and explosions of flammable welding gases or liquids are rare.⁴⁰

Willow Rock will be equipped with fire detection and monitoring systems, fire suppression systems for equipment and buildings, one electric jockey fire pump with one back-up diesel-fired 460 horsepower emergency fire pump, various types of portable fire extinguishers.

³⁶ Ex. 2000, FSA, p. 4.4-19.

³⁷ Ex. 2000, FSA, p. 4.4-19.

³⁸ Ex. 2000, FSA, p. 4.4-23.

³⁹ Ex. 2000, FSA, p. 4.4-19.

⁴⁰ Ex. 2000, FSA, p. 4.4-20.

Additionally, there will be an onsite water tank of 330,000 gallons of which 300,000 gallons will be dedicated for firefighting.⁴¹

Fire detection and suppression elements for the Operation and Maintenance building, which will accommodate staff members and storage areas, will be consistent with the applicable provisions of the California Fire Code. Besides being equipped with portable fire extinguishers, the Operation and Maintenance building will be equipped with smoke detectors and sprinkler systems.⁴²

The 230 kV gen-tie interconnection will be designed, constructed, and maintained in accordance with applicable standards, including California Public Utilities Commission GO-95, which establishes clearances from other human-built and natural structures, as well as tree-trimming requirements to mitigate fire hazards. The gen-tie corridor and immediate area will be maintained in accordance with existing regulations and accepted industry practices that will include identification and abatement of fire hazards.⁴³

Fire detection and suppression systems are required by the California Fire Code for the entire surface facility and therefore will be required in the Fire Prevention Plans of **WORKER SAFETY-1** and **2**.⁴⁴

Compliance with applicable LORS will be adequate to ensure protection from fire hazards related to the individual structures. Access to the site for fire and other emergency vehicles shall be available at two separate locations via site personnel or locked gates. Emergency departments such as the Kern County Fire Department, the Kern County Sheriff's Office, and the California Highway Patrol shall be given access to the locked gates via keys or any other means as described in both the construction and operations fire prevention plans described in **WORKER SAFETY-1** and **2**.⁴⁵

B. Underground Cavern Construction

A fire prevention plan in mining should focus on identifying and mitigating potential ignition sources, controlling combustible materials, and implementing proper ventilation systems. Additionally, the plan should focus on utilizing fire detection and suppression equipment, and providing thorough employee training on fire safety procedures, particularly in areas with flammable gases like methane. The plan should also consider the unique hazards present in the mine environment. Key components of an underground fire prevention plan include:

- Pre-planning and hazard identification.

⁴¹ Ex. 2000, FSA, p. 4.4-19.

⁴² Ex. 2000, FSA, p. 4.4-20.

⁴³ Ex. 2000, FSA, p. 4.4-22.

⁴⁴ Ex. 2000, FSA, p. 4.4-20.

⁴⁵ Ex. 2000, FSA, p. 4.4-20.

- Ventilation control.
- Combustible material management.
- Fire Detection and alarm systems.
- Fire suppression systems.
- Compliance with regulations.
- Worker and management training.
- Regular inspections and maintenance.⁴⁶

Condition of Certification **WORKER SAFETY-8** provides for strict safety and health procedures to protect workers underground. Conditions of Certification **WORKER SAFETY-1, 3, 4, 5, and 8** address worker safety and health and fire protection issues associated with the two different initial access methods.⁴⁷

C. Fire, Rescue and Emergency Medical Services Response

The project will rely on both on-site fire protection systems and local fire protection services. The on-site fire protection systems will provide the first line of defense for small fires. The project will be served first by Station 15, staffed by permanently employed fire fighters, in the community of Rosamond (~4.4 miles South at 3219 35th St W) with a response time of 8 minutes. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, will be provided by the Kern County Fire Department under all conditions. Emergency medical services (EMS) response is likely to be infrequent and represent an insignificant impact on the local fire departments.⁴⁸

The entire east side of Kern County has the resources to respond to fire and EMS emergencies at the project. The Kern County Fire Department stated that the current firefighter staffing at the stations that will respond to a fire or an EMS need at Willow Rock are up to current standards and requests only that Kern County Fire Department staff participate in facility familiarization visits to site prior to event. However, hazardous materials spill response will be covered only at the first responder level by stations 15, 14, and 12, until the Hazmat Unit from Fire Station 65 responds from Bakersfield in 90 minutes.⁴⁹

The Kern County Fire Department lacks the resources to respond to rescue emergencies, lacking an east side area rescue station, crew, and engine. Thus, we adopt Condition of Certification **WORKER SAFETY-12**, which will provide funds to mitigate this deficiency.⁵⁰

⁴⁶ Ex. 2000, FSA, pp. 4.4-20 – 4.4-22.

⁴⁷ Ex. 2000, FSA, p. 4.4-22.

⁴⁸ Ex. 2000, FSA, pp. 4.4-1 – 4.4-24.

⁴⁹ Ex. 2000, FSA, pp. 4.4-1 – 4.4-24.

⁵⁰ Ex. 2000, FSA, p. 4.4-25.

The potential for both work-related and non-work-related heart attacks exists at CEC licensed projects. The frequency of EMS response to CEC projects shows that many of the responses for cardiac emergencies involved non-work-related incidents, including those involving visitors. The quickest medical intervention for cardiac emergencies can only be achieved with the use of an on-site automatic external defibrillator (AED). Therefore, it is appropriate for the project owner to maintain an AED on site to treat cardiac emergencies resulting from industrial accidents or other non-work-related causes. Condition of Certification **WORKER SAFETY-10** requires that the project owner maintain a portable AED on site, train all on site employees during operations in its use, and train supervisory workers on site during construction and commissioning in its use.⁵¹

c. Cumulative Impacts

There are 37 projects within 8.1 miles of Willow Rock that could result in impacts on the fire and emergency service capabilities of the Kern County Fire Department.⁵² Staff stated that the Kern County Planning and Natural Resources Department stated that Willow Rock will result in a potential cumulative impact on emergency response, and that the County requests certain financial compensation in mitigation. Moreover, there are several other challenges to emergency response capabilities including the following:

- The project will be the first compressed air power generating project in California that uses an excavated underground cavern for the holding of compressed air and water.
- Because workers will be entering the cavern during its excavation, prompt rescue of injured workers becomes an essential safety feature of this project.
- Kern County Fire Department station 47 on the western side of the County (west of Tehachapi Pass via State Route 58), although able to handle fire, rescue, or emergency medical response on the western side of the pass, is not able to provide such response in an appropriate time on the eastern side of the pass due to the extreme distance to the project site and the other mining activities. Response time for a rescue at the site is estimated at 1 hour. Additionally, occasional weather and accidents result in temporary closure of Route 58 thus adding more time for emergency response.
- The Kern County Fire Department stations on the east side of the pass are presently understaffed and under-equipped to handle emergency rescue to the industrial projects on the east side of the county. Kern County Fire Department has 14 Mutual Aid agreements which can provide fire response but not below surface rescue. A Los Angeles Urban Search and Rescue unit at 3650 Bolz Ranch Rd, Palmdale might or might not be able to respond under mutual aid. The response time from this station is estimated by staff to be approximately 30 minutes.⁵³

⁵¹ Ex. 2000, FSA, p. 4.4-25.

⁵² Ex. 2000, FSA, pp. 4.4-5 and 4.4-25.

⁵³ Ex. 2000, FSA, pp. 4.4-26 – 4.4-27.

We find that Willow Rock construction and operation will result in a potential cumulative impact to the Kern County Fire Department regarding its ability to properly respond to fire, rescue, and EMS emergencies. Condition of Certification **WORKER SAFETY-12** requires the project owner to enter into negotiations with Kern County Fire Department to provide mitigation for these potential impacts, or to pay a lump sum plus annual payments during construction to pay for emergency response personnel and equipment.⁵⁴ Condition of Certification **WORKER SAFETY-12** is consistent with the mitigation requested by the Kern County Planning and Natural Resources Department.⁵⁵ Thus, with implementation of Condition of Certification **WORKER SAFETY-12**, the project will not result in any cumulative impacts related to worker safety, fire protection, and emergency services.

⁵⁴ Ex. 2000, FSA, p. 4.4-26.

⁵⁵ Ex. 2000, FSA, p. 4.4-26.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 6.D-1 demonstrates that, with implementation of specific Conditions of Certification, the Willow Rock Energy Storage Center will comply with applicable LORS.

TABLE 6.D-1 Laws, Ordinances, Regulations, and Standards Applicable to Worker Safety and Fire Protection		
Applicable LORS	Description Of LORS	Discussion/Conclusion
Federal		
Title 29 U.S. Code (USC) section 651 et seq	Refers to the Occupational Safety and Health Act of 1970, which governs workplace health and safety in the United States.	Compliant. WORKER SAFETY-1 & 2 require that the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction, commissioning, and operations. WORKER SAFETY-3 & 4 require the project owner to implement an additional layer of worker safety during construction.
Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations) Title 29 1926 Subpart S - Underground Construction, Caissons, Cofferdams, and Compressed Air	The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings.	Compliant. WORKER SAFETY-1 & 2 require that the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction, commissioning, and operations. WORKER SAFETY-3 & 4 require the project owner to implement an additional layer of worker safety during construction. WORKER SAFETY-5 requires the project owner to implement an additional layer of worker safety during controlled detonations operations.
Mine Safety and Health Administration (MSHA) CFR-2024, title 30, vol 1, chap I and specifically part 57 - safety and health standards, underground metal and nonmetal mines.	MSHA carries out the provisions of the Federal Mine Safety and Health Act of 1977 (Mine Act) as amended by the Mine Improvement and New Emergency Response (MINER) Act of 2006. The agency develops and enforces safety and health rules for all U.S. mines.	Compliant. WORKER SAFETY-1 & 5 require compliance with all MSHA regulations and standards during excavation of the underground cavern.

TABLE 6.D-1 Laws, Ordinances, Regulations, and Standards Applicable to Worker Safety and Fire Protection

Applicable LORS	Description Of LORS	Discussion/Conclusion
State		
Title 8, California Code of Regulations (Cal Code Regs.) all applicable sections (Cal OSHA regulations) including Cal Code Regs: Subchapter 4: Construction Safety Orders, tit. 8, §§ 1920–1928, Fire Detection and Prevention; Title 8 California Code of Regulations section 8403–8568 Tunnel Safety Orders (including section 7091 of the Mine Safety Order addressing radioactive [in this case radon] protection by following the radiation standards of the Mine Safety and Health Administration for Metal and Non-Metallic Underground Mines, published July 31, 1969, February 25, 1970, and December 8, 1970.) Subchapter 5: Low and High Voltage Electrical Safety Orders; and specifically tit. 8, § Subchapter 7: General Industry Safety Orders; and specifically tit. 8, §: • 3203 – Injury and Illness Prevention Program; • 3314 Control of Hazardous Energy Lockout/Tagout;	Cal OSHA standards are generally more stringent than federal regulations. Employers are required to monitor worker exposure to listed hazardous substances and notify workers of exposure (Cal. Code Regs., tit. 8, §§ 337-340). The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. It also includes the Construction Safety Orders (CCR tit. 8, §§ 1500-1962) and the General Industry Safety Orders (Cal. Code Regs., tit. 8, §§ 3200-6184). California Code of Regulations, title 8, section 7083 requires that a mine rescue station is required if more than fifty employees work underground at any one time. Additionally, Cal. Code Regs., tit. 8, §§ 8403 – 8568 Tunnel Safety Orders including Cal Codes Regs., title 8, § 8495 addressing Hoisting Equipment and Systems and Cal. Code Regs., tit. 8, § 7091 of the Mine Safety Orders addressing radioactive [in this case radon] protection by following the radiation standards of the Mine Safety and Health Administration for Metal and Non-Metallic Underground Mines, published July 31, 1969, February 25, 1970, and December 8, 1970, will govern worker safety when excavating the underground cavern.	Compliant. WORKER SAFETY-1, 2, 3, 4, 5, 6, 7, 8, & 11 impose specific conditions to ensure compliance with Title 8, as well as Health & Safety Codes for Fire Protection as shown in WORKER SAFETY-1, 2, 8, 9, & 11

TABLE 6.D-1 Laws, Ordinances, Regulations, and Standards Applicable to Worker Safety and Fire Protection

Applicable LORS	Description Of LORS	Discussion/Conclusion
• 3395 & 3396, Heat Illness Prevention Programs; • 5141.1, Protection from Wildfire Smoke • 5185 6150-6154, Fire Protection List of LORS for fire hazard protection for gen-tie interconnection and overall project: • Cal Code Regs., tit. 14, §§ s 1250-1258, "Fire Prevention Standards for Electric Utilities" • GO-95, CPUC, "Rules for Overhead Electric Line Construction," Section 35		
California Labor Code section 6709.	Worker training on Valley Fever	Compliant. WORKER SAFETY-7 requires training on Valley Fever.
Local		
2022 California Fire Code adopted into Kern County Ordinance 17.32 including the July 2024 amendment.	The County Code adopts the California Fire Code with specific revisions.	Compliant. WORKER SAFETY-1, 2, 3, 4, 5, 6, 7, 8, & 11 impose specific conditions to ensure compliance with Title 8, as well as Health & Safety Codes for Fire Protection as shown in WORKER SAFETY-1, 2, 8, 9, & 11
General		
National Fire Protection Association (NFPA) 850 and 122	NFPA Standard 850 requires the development of a Fire Protection Design Basis Document that identifies relevant hazards such as the presence of fuels, lubricating oils, flammable liquids, and electrical equipment. NFPA 122 presents minimum requirements for safeguarding life and property against fire and related hazards associated with diesel-powered equipment and the storage and	Compliant. WORKER SAFETY-9 requires adherence to NFPA 850 and NFPA 122 industry standard.

TABLE 6.D-1 Laws, Ordinances, Regulations, and Standards Applicable to Worker Safety and Fire Protection

Applicable LORS	Description Of LORS	Discussion/Conclusion
	handling of flammable and combustible liquids at metal and nonmetal underground and surface mining and metal mineral processing plants.	

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding worker safety, fire protection, and emergency services.

iv. Agency and Public Comment

No comments have been received regarding the topic of worker safety besides those already addressed in the FSA.⁵⁶

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. Construction and industrial workers are exposed to potential health and safety hazards.
2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.
3. The project owner will employ a Construction Safety Supervisor who will, among other things, ensure that the safety program for the project complies with Cal OSHA and federal regulations and ensure that all construction and commissioning workers and supervisors receive adequate safety training.
4. The project owner will employ an independent Safety Monitor to conduct safety inspections to verify that the Construction Safety Supervisor implements all appropriate Cal OSHA and CEC safety requirements.

⁵⁶ See Ex. 2000, p. 4.4-29 – 4.4-34; 8/21/2025 Evidentiary Hearing RT pp. 48:21 – 68:8.

5. There is a risk of cavern seal failure for this project that is mitigated by its engineering design of including a hydrostatic column of water and compensation reservoir, which maintain a constant pressure in the cavern and avoid structural fatigue.
6. Willow Rock will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.
7. The Kern County Fire Department will serve Willow Rock and will be able to respond to the site within an acceptable time, except as to rescue emergencies, which will be mitigated by implementation of Condition of Certification **WORKER SAFETY-12**.
8. Willow Rock construction and operation will result in a potential cumulative impact to the Kern County Fire Department regarding its ability to properly respond to fire, rescue, and EMS emergencies. Condition of Certification **WORKER SAFETY-12** is consistent with the mitigation requested by the Kern County Planning and Natural Resources Department. With implementation of Condition of Certification **WORKER SAFETY-12**, the project will not result in any cumulative impacts related to worker safety, fire protection, and emergency services.
9. Willow Rock will not have a significant direct, indirect, or cumulative impact on worker safety, fire protection, and emergency services.
10. Willow Rock will meet the requirements of the most recently adopted edition of the California Fire Code, applicable National Fire Protection Association standards, and other LORS protecting worker safety, fire protection, and emergency services.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to worker safety, fire protection, and emergency services.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to worker safety, fire protection, and emergency services.

6 Public Health and Safety

E. Hazards, and Hazardous Materials Management, Hazardous Waste, and Wildfire

i. Introduction

This section considers whether the construction and operation of the Willow Rock Energy Storage Center will create significant impacts relating to hazards, hazardous materials management, hazardous waste, and wildfire. The **Worker Safety and Fire Protection** section of this Decision addresses the protection of workers from such risks. Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts. These include meteorological conditions, terrain characteristics, special site factors, and the proximity of population centers and sensitive receptors. This section also considers whether mitigation measures are necessary to ensure compliance with applicable LORS.

Evidence on the topic of Hazards, and Hazardous Materials Management, Hazardous Waste, and Wildfire is contained in Exhibits 1025, 1032-1033, 1040-1041, 1053, 1111-1112, 1119-1120, 1132, 1155, 1183-1184, 1233, 1323, and 2000, and in the Reporter's Transcript of the Evidentiary Hearing.¹

a. Setting and Project Description

Willow Rock will be on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southeastern Kern County, California. Willow Rock will be served by the Kern County Fire Department (KCFD).² The immediate vicinity is dominated by undeveloped or empty lots of land. The nearest residence is approximately two miles west of the site and no schools or medical facilities are present within a 3-mile radius of the Willow Rock Site.³

The closest identified cleanup site is approximately 2.6 miles southeast of the project boundary near the intersection of Lode Starr Road and Willow Springs Road, within Edwards Air Force Base.⁴ Remediation phases are essentially complete, and a monitoring/sampling program is occurring to confirm successful completion of cleanup at the site. An examination of the California Environmental Protection Agency Cortese List Data Resources (Cortese List) showed that no Cortese List sites are within a 2.5-mile radius of the site. Thus, it is highly unlikely that any impacts will result from Cortese-listed properties.⁵

¹ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48:20.

² Ex. 2000, FSA, p. 5.7-1.

³ Ex. 2000, FSA, p. 5.7-8.

⁴ Ex. 2000, FSA, p. 5.7-8.

⁵ Ex. 2000, FSA, p. 5.7-9.

A Phase I Environmental Site Assessment was conducted and revealed no evidence of recognized environmental conditions.⁶

The California Department of Forestry and Fire Protection (CAL FIRE) has not assigned a Fire Hazard Severity Zone rating for the area encompassing Willow Rock and the gen-tie line. Willow Rock does not fall within a State Responsibility Area.⁷

Willow Rock and its gen-tie line will be in the Kern County Fire Department (KCFD) Tehachapi Management Area. Historically, many larger fires have originated in this area; however, residential development has reduced the number of large fires in recent years. Most fires in the county have been relatively small (i.e., 300 acres or less), and just 10 percent have been greater than 300 acres in area. Willow Rock will fall within CAL FIRE's Kern County Management Unit and thus be covered by the Kern County Unit Fire Management Plan.⁸

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

ii. Environmental Analysis of Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire

a. Thresholds of Significance

This evaluation assesses the degree to which the project would potentially cause a significant impact to **Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire** according to the CEQA Guidelines Appendix G checklist, for hazards and hazardous materials and wildfire, listed in **Table 6.E-1**.

TABLE 6.E-1 Hazards and Hazardous Materials, Hazardous Waste, and Wildfire ⁹				
Checklist Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS				
i. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☒	☐	☐
ii. Would the project create a significant hazard to the public or the environment	☐	☒	☐	☐

⁶ Ex. 2000, p. 5.7-8.

⁷ Ex. 2000, p. 5.7-1.

⁸ Ex. 2000, p. 5.7-1.

⁹ Source: Ex. 2000, pp. 5.7-18 - 5.7-19, citing Environmental checklist established by CCR, tit. 14, Div. 6, Ch. 3, Appendix G, hazards and hazardous materials and wildfire.

TABLE 6.E-1 Hazards and Hazardous Materials, Hazardous Waste, and Wildfire⁹

Checklist Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?				
iii. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
iv. Would the project be on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code, section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☒	☐	☐
v. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
vi. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
vii. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒
WILDFIRE				
viii. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:	☐	☐	☐	☒
a. Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may	☐	☐	☒	☐

TABLE 6.E-1 Hazards and Hazardous Materials, Hazardous Waste, and Wildfire ⁹				
Checklist Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				
d. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

b. Impact Assessment and Mitigation

The Willow Rock Energy Storage Center project involves limited transport, storage, use, and disposal of hazardous materials during construction, operation and maintenance, and decommissioning activities. The amounts of hazardous materials used and hazardous waste produced during construction, operations, and decommissioning are far less than those found at other types of energy production projects, thus reducing the risks posed by hazardous materials and wastes on workers and the public. As an example, no chemicals that would require either adherence to the California Accidental Release Prevention Program or the Cal OSHA Process Safety Management Program will be used on this site.¹⁰

Examples of hazardous materials that may be used during construction, operation and maintenance, and decommissioning activities would include unleaded gasoline, diesel fuel, oil, lubricants (motor oil, transmission fluid, and hydraulic fluid), solvents, adhesives, paint materials, and explosives. Operation and maintenance of the project will not require as many hazardous materials as construction or decommissioning and will include mostly water treatment chemicals. All hazardous materials will be transported, stored, handled, and used in accordance with applicable laws, ordinances, regulations, and standards (LORS).¹¹ A summary of hazardous materials that could be used for the project during construction, operation, and maintenance, and storage locations, is presented in **Table 6.E-2**.

¹⁰ Ex. 2000, FSA, p. 5.7-2.

¹¹ Ex. 2000, FSA, p. 5.7-2.

TABLE 6.5-2 Use and Location of Hazardous Materials¹²						
Chemical Name	Use/Purpose	Quantity	Storage Location	State	Type of Storage Container	Project Phase
Diesel (dyed and clear)	Vehicle use and emergency generator	8,000 gallons (dyed), 2,000 gallons (clear)	Onsite	Liquid	Aboveground storage tanks (ASTs)	Construction and/or O&M
Diesel Exhaust Fluid (DEF)	Construction Vehicle Maintenance Fluids	250-gallon tote		Liquid		
ChemTreat BL 1280	Thermal Management System Water Treatment	70 gallons/ 180 gallons	Onsite	Liquid	Continuously onsite	Construction and/or O&M
ChemTreat BL 1559	Thermal Management System Water Treatment	30 gallons/ 180 gallons	Onsite, tight, closed container, cool, and locked	Liquid	Continuously Onsite	Construction and/or O&M
ChemTreat CL 2900	Cooling Water Treatment	8,400 gallons/ 660 gallons	Onsite	Liquid	Continuously Onsite	Construction and/or O&M
ChemTreat CL 2150	Slimeicide	5,200 gallons/ 660 gallons	Onsite, store locked	Liquid	Continuously Onsite	Construction and/or O&M
Sodium Hypochlorite	Oxidant Wash, Chlorination, Pre-chlorination	180 gallons/ 180 gallons	Onsite	Liquid	Continuously Onsite	Construction and/or O&M
Adhesives	Construction and O&M	NA	O&M Building	Liquid, Solid	Bottles	Construction and/or O&M
Sealants	Construction and O&M	NA	O&M Building	Liquid	Bottles	Construction and/or O&M
Hydraulic fluids	O&M		Transformers	Liquid	Cans, ASTs	O&M
Gasoline	Fueling Equipment	2000 gallons		Liquid	Cans	Construction
Lubricants	Construction and O&M	NA	NA	Liquid	Cans, ASTs	Construction and/or O&M
Explosives	Cavern construction	NA	Magazines on the surface	Solid	Metal, wood, or masonry as per 8 CCR § 5252	Cavern Construction
Caps and detonators	Cavern Construction	NA	Separate magazines on the surface	Solid	Metal, wood, or masonry as per 8 CCR § 5252	Cavern Construction

¹² Source: Ex. 2000, FSA, pp. 5.7-3 – 5.7-4.

The greatest amount of hazardous waste generated during both construction and operations will consist of used lubricating and insulating oil from machinery, transformers, small leaks and spills, oil-spill rags and sorbents, and filters. These hazardous wastes will not be stored onsite for more than 90 days and will be removed from the site by licensed and registered hazardous wastes haulers.¹³

The California Environmental Protection Agency (CalEPA) is required to certify a local government agency, known as Certified Unified Program Agency (CUPA), as able to implement all the required environmental programs and to consolidate, coordinate and make them consistent within their jurisdiction. California law¹⁴ requires businesses that store or use hazardous materials to prepare a Hazardous Materials Business Plan (HMBP) and submit it to the CUPA. A Hazardous Materials Business Plan includes details of a facility and business conducted at the site, an inventory of hazardous materials that are handled and stored on-site, an emergency response plan, and a safety and emergency response training program for new employees with an annual refresher course.¹⁵

1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or hazardous waste?

Construction and operation of Willow Rock Energy Storage Center will involve the use of hazardous materials, as identified in **Table 6.E-2**. Hazardous materials used and stored on-site will be securely stored in appropriate containers in compliance with applicable LORS.¹⁶

A. Construction

Engineered double-hull fuel tanks and temporary containment berms and spill kits will be used to help contain any spills during the construction of the project.¹⁷ Condition of Certification **HAZ-1** ensures that the project owner provides an accurate list of hazardous materials used and stored on the site during construction and a spill control and clean-up plan.¹⁸

Hazardous waste will be generated during construction of the project. Construction-related hazardous wastes may include waste paint, spent solvents, waste cleaners, waste oil, oily rags, spent batteries, excavation dewatering water, flushing and cleaning fluids, and welding

¹³ Ex. 2000, FSA, p. 5.7-20.

¹⁴ The California Hazardous Materials Release Response Plan and Inventory Law of 1985 (Business Plan Act, Health & Saf. Code, §§ 25500 *et seq.*)

¹⁵ Ex. 2000, FSA, p. 5.7-16.

¹⁶ Ex. 2000, FSA, pp. 5.7-20, 5.7-22, both citing 40 CFR Part 262, 40 CFR § 1910.12, and 8 CCR § 5192.

¹⁷ Ex. 2000, p. 5.7-22.

¹⁸ Ex. 2000, FSA, pp. 5.7-20 – 5.7-21.

materials. Hazardous wastes in the form of dusts and airborne particulates could also be generated during cavern construction depending upon the levels of metals and inorganic substances (e.g., hexavalent chromium or silica) that occurs naturally in the subsurface soils and rock. The spoils from the cavern construction will be routinely sampled and analyzed, as per proposed Condition of Certification **WORKER SAFETY-1**, to determine if these wastes meet the statutory definition of hazardous. Hazardous wastes will be accumulated according to Title 22, California Code of Regulations requirements for satellite waste accumulation. They will be stored in appropriately segregated storage areas surrounded by berms to contain leaks and spills. The bermed areas will be sized to hold the full contents of the largest single container and, if outdoors and not roofed, will be sized for an additional volume for the rainfall associated with a 25-year, 24-hour storm event. If indoors, the containment will be sized for an additional volume equivalent to 20 minutes of the design flow of any fire protection water. These areas will be inspected weekly.¹⁹

Hazardous wastes will be collected by a registered hazardous waste transporter using a hazardous waste manifest. Wastes will be transported to authorized hazardous waste management facilities. Copies of manifests, reports, waste analyses, and other documents will be kept on-site and will remain accessible for inspection for at least 3 years. Employees will be trained in hazardous waste procedures, spill contingencies, and waste minimization. Contractors and workers will be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste. Procedures will be developed to reduce the quantity of hazardous waste generated. Nonhazardous materials will be used instead of hazardous materials whenever practical, and wastes will be recycled whenever practical. Handling of hazardous wastes in this way will minimize the quantity of waste deposited into landfills: waste lubricating oil will be recovered and recycled by a waste oil recycling contractor and spent oil filters and oily rags will be recycled. Construction materials will be sorted on-site throughout construction and transported to appropriate waste management facilities. Recyclable materials will be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Recycling will be in accordance with applicable California state requirements. Wooden construction waste (such as wood from wood pallets) will be sold, recycled, or chipped and composted. Other compostable materials, such as vegetation, may also be composted off-site.²⁰

Hazardous waste will be stored on-site for less than 90 days and transported by a licensed and registered hazardous waste transporter to an authorized treatment, storage, and disposal facility. Hazardous wastes will likely be sent to the California Class I landfills Kettleman Hills Facility, Clean Harbors Buttonwillow Landfill, and/or an out-of-state landfill.²¹

The project owner will have to obtain a site-specific USEPA identification number and hazardous waste generator classification for the project. Hazardous waste generated at the

¹⁹ Ex. 2000, FSA, p. 5.7-21.

²⁰ Ex. 2000, p. 5.7-21.

²¹ Ex. 2000, FSA, pp. 5.7-21 – 5.7-22.

project site will be stored on-site in accordance with accumulation time limits detailed in California Code of Regulations, title 22, section 66262.34 before off-site disposal, treatment, or recycling. Condition of Certification **HAZ-3** ensures that the project owner has obtained the project's USEPA identification number before the start of construction, and that it reports the number to the Compliance Project Manager.²²

Security elements are needed to ensure the protection of California's electrical infrastructure from vandalism or domestic/foreign attacks, including active surveillance on-site or remote and security monitoring equipment including camera feeds housed in the O&M building. Condition of Certification **HAZ-4** requires the project owner to create and implement an approved construction security plan to ensure a minimum level of security for the site.²³

B. Operation

Condition of Certification **HAZ-1** requires the project owner to submit a Hazardous Materials Business Plan and spill control and clean-up plan for operations at the project site to the Kern County Public Health Services Department - Hazardous Materials Program, the CUPA for the project area, for review and comment and to the Compliance Project Manager for review and approval. It will list the hazardous materials and their location which ensures that first responders are prepared to respond to any incidents that could occur at the project site. The spill control and clean-up plan will lay out the proper procedures to help prevent a discharge of petroleum products, as well as control a discharge should one occur at the project site.²⁴

Hazardous materials will be transported to the site as needed for operations. Transportation of hazardous materials will occur with DOT-approved personnel and trucking/transport equipment. Due to the selected routes for hazardous material delivery and the distance from sensitive receptors during operation, effects on sensitive receptors will be less than significant.²⁵

There is the potential for the project to increase the quantities or change the types of hazardous materials that are used at the project site. New or increased amounts of hazardous materials could require new LORS requirements for the project site. Condition of Certification **HAZ-2** requires the project owner to notify and seek approval from the Compliance Project Manager before changing the quantity of or using a new hazardous material onsite. This ensures that any new or change in the amount of a hazardous material introduced to the project site will comply with applicable LORS.²⁶

Security elements are needed to ensure the protection of California's electrical infrastructure from vandalism or domestic/foreign attacks. Condition of Certification **HAZ-5** requires the

²² Ex. 2000, FSA, p. 5.7-22.

²³ Ex. 2000, FSA, p. 5.7-22.

²⁴ Ex. 2000, FSA, pp. 5.7-22 – 5.7-23.

²⁵ Ex. 2000, FSA, p. 5.7-22.

²⁶ Ex. 2000, FSA, p. 5.7-23.

project owner to create an operations security plan to ensure a minimum level of security for the project.²⁷

With the implementation of Conditions of Certification **HAZ-1**, **HAZ-2**, and **HAZ-5**, the impacts of operation of the Willow Rock facility will be reduced to less than significant.²⁸

2. Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

A. Construction

Several hazardous materials will be used in construction activities. Potentially, the improper use and storage of hazardous materials could lead to leaks and spills. However, most spills and leaks will be limited and easily cleaned up with spill kits due to the small quantities involved. In addition, hazardous materials will use temporary secondary containment to lower the risk of a release to the environment. Hazardous wastes will be brought to the surface and managed the same as surface-generated hazardous wastes.²⁹

Hazardous materials will be stored, used, and cleaned up in compliance with LORS. Additionally, Condition of Certification **HAZ-3** requires a USEPA hazardous waste ID number, and **WORKER SAFETY-1** requires construction worker health and safety programs and procedures to protect workers from exposure to hazardous materials and hazardous waste.³⁰

B. Operation

Staff reviewed the project details for storage, collection, disposal and waste minimization during operations, which are similar to those listed above for operation of the project and concluded that implementation will be adequate to ensure that hazardous materials handling will comply with applicable LORS. Operation of the project will require less hazardous materials and generate less hazardous waste than during construction, and implementation of best management practices and compliance with LORS, will reduce the potential for incidents involving hazardous materials and wastes. Due to the selected routes for hazardous material delivery and the distance from sensitive receptors during operation, effects on sensitive receptors will be less than significant. Therefore, hazardous materials will be stored, used, and cleaned up in compliance with LORS. Additionally, staff proposed Conditions of Certification **HAZ-3** requiring a USEPA hazardous waste ID number, and **WORKER SAFETY-2** will include

²⁷ Ex. 2000, FSA, p. 5.7-23.

²⁸ Ex. 2000, FSA, p. 5.7-23.

²⁹ Ex. 2000, FSA, p. 5.7-23.

³⁰ Ex. 2000, FSA, p. 5.7-24.

operations worker health and safety programs and procedures to protect workers from exposure to hazardous materials and waste.³¹

3. Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

There are no schools located or proposed within one-quarter mile of the facility and gen-tie line. In addition, no acutely hazardous materials will be used during project construction and operations. Therefore, project construction and operation will not result in hazardous materials impacts to existing or proposed schools.³²

4. Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code, section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

The project site is not included on any database as the location of any hazardous material sites. And there are no hazardous material sites on the Cortese list within 1,000 feet of these project components.³³

However, ground disturbing activities will have the potential to encounter unknown impacted groundwater and/or soil. Condition of Certification **HAZ-6** requires the submission of a Soil Management Plan to the Kern County CUPA, for review and comment, and to the Compliance Project Manager for review and approval prior to the start of any ground disturbing activities. The Soil Management Plan addresses proper handling, assessment, and disposal of any impacted soil or subsurface features that are encountered during grading. Soil that will be transported offsite must be adequately characterized and disposed of at a facility that is permitted and approved by the disposal contractor to receive such material. Likewise, any soil imported to the property must be either from a virgin quarry or certified as determined by analysis to be "clean" in accordance with applicable state LORS prior to arriving at the project site.³⁴

If, during excavations for transmission line support structures or undergrounding of the line, suspected contaminated soils were found, adoption of proposed Conditions of Certification **HAZ-7** and **HAZ-8** implement controls and investigations to ensure that any hazardous wastes were remediated and workers protected. This will also apply if unknown areas of contamination were to be found on the site. An environmental professional with sufficient experience in hazardous waste management will have the expertise to determine whether additional investigations are needed to identify the extent of contamination and to ensure

³¹ Ex. 2000, FSA, p. 5.7-24.

³² Ex. 2000, FSA, p. 5.7-24.

³³ Ex. 2000, FSA, p. 5.7-25.

³⁴ Ex. 2000, FSA, p. 5.7-25.

proper handling and disposal of contaminated soil and groundwater. Condition of Certification **HAZ-7** requires an experienced and qualified environmental professional to be available for consultation if contamination is discovered during ground disturbing activities at the site or along the gen-tie line. Condition of Certification **HAZ-8** requires the environmental professional to inspect the site, including the gen-tie line, determine what will be required to characterize the nature and extent of contamination, and provide a report to representatives of the Kern County HazMat Compliance Program and the Compliance Project Manager on findings and the recommended course of action. Related activities include soil removal, dust suppression, and worker exposure prevention by means of wearing personal protective equipment. Any contaminated soils and/or groundwater identified will be removed and disposed of according to the appropriate local, state, and federal laws under the oversight of the agency taking lead jurisdiction.³⁵

Any contaminated soils and/or groundwater identified will be removed and disposed of according to the appropriate local, state, and federal laws under the oversight of the CEC. Staff proposes Conditions of Certification **HAZ-6, HAZ-7, and HAZ-8** for construction activities to ensure that any impacts from unknown environmental contamination will be less than significant.³⁶

5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

A small landing airport is 2.61 miles northwest of the site and 3.75 miles southeast of Rosamond Skypark airport. These distances demonstrate that this project is far from any airport land use plan or existing airport. Therefore, the project construction and operation will not result in excessive noise levels or safety hazards to public or private airports.³⁷

6. Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The Kern County Multi-Jurisdictional Hazard Mitigation Plan was developed to

“guide County and City Officials, Special District Managers, School District Administrators, and Water and Wastewater District Managers in protecting the people and property within the County from the effects of natural disasters and hazard events. This plan serves as a tool to direct County resources to achieve optimum results with available administrative, technical, and financial resources.”

³⁵ Ex. 2000, FSA, pp. 5.7-25 – 5.7-26.

³⁶ Ex. 2000, FSA, p. 5.7-26.

³⁷ Ex. 2000, FSA, p. 5.7-26.

The plan does not specifically map emergency evacuation or access routes; therefore, the project site is not within an area designated as an emergency access route for any community. Moreover, the project applicant stated that it will adhere to all safety practices addressed in the plan, as well as the safety element of the Kern County Master Plan. The project is not anticipated to have impacts on the Kern Multi-Jurisdiction Hazard Mitigation Plan or the Kern County Master Plan. Therefore, the project construction and operation will not impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.³⁸

7. Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

While fire risk may be slightly elevated during construction and operation of Willow Rock. The project applicant will address these risks by complying with all applicable laws, ordinances, and regulations and implementing best management practices and engineering controls described by the applicant. Proper planning and mitigation measures will avoid and minimize potential for accidental wildfire ignition, particularly during construction of the gen-tie line. Additionally, the project will conduct an emergency response planning session to address public health concerns regarding wildfire risk. Therefore, the risk of wildland fires is not significant at the project site or along the gen-tie line.³⁹

8. If located in or near state responsibility areas or lands classified as very high fire hazard severity zones (FHSZ), would the project:

A. Substantially impair an adopted emergency response plan or emergency evacuation plan?

Willow Rock is not within or very near a very high FHSZ and thus, is not subject to any Fire Hazard Severity Zone. Also, see analyses "6" and "7," above. Therefore, the project will not impact or impair an emergency response or evacuation plan.⁴⁰

B. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Risk of wildland fires is not significant at the project site or along the gen-tie line and the land is flat with insignificant sloping. Willow Rock is not within or very near a very high Fire Hazard

³⁸ Ex. 2000, FSA, p. 5.7-26.

³⁹ Ex. 2000, FSA, p. 5.7-27.

⁴⁰ Ex. 2000, FSA, p. 5.7-27.

Severity Zone and thus, is not subject to any Fire Hazard Severity Zone. Also, see analyses "6" and "7," above.⁴¹

C. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

The project will not exacerbate fire risk and impact of wildfire along the gen-tie line will be less than significant. Willow Rock is not within or very near a very high Fire Hazard Severity Zone and thus, is not subject to any Fire Hazard Severity Zone. Also, see analyses "6" and "7," above.⁴²

D. Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

The project site and gen-tie line will not be on slopes that could expose people or structures to downslope or downstream flooding, landslides, post-fire slope instability or drainage changes in the event of a wildland fire. Therefore, the facility components will have no impact on people or structures.⁴³

c. Cumulative Impacts

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed Project, cause its effect(s) on hazards, hazardous materials, hazardous waste, and wildfire to be potentially significant. A master list of cumulative projects within the study area is provided in **Appendix E**.⁴⁴

The cumulative effect of hazards, such as aviation, emergency evacuation and the transportation, use, and storage of hazardous materials impacts, will be limited to the project site and immediately adjacent areas. No cumulative projects were identified at or immediately adjacent to the project, therefore there are no projects with the potential to combine cumulatively with the project relative to Hazards and Hazardous Materials.⁴⁵

The cumulative effect of wildfire will be limited because the project site is not in or near a fire State Responsibility Area or lands classified as a very high Fire Hazard Severity Zone, and not on land classified by the California Public Utilities Commission (CPUC) as having a fire threat. The combined wildfire risk from the project and projects from the cumulative project list will

⁴¹ Ex. 2000, FSA, p. 5.7-27.

⁴² Ex. 2000, FSA, p. 5.7-28.

⁴³ Ex. 2000, FSA, p. 5.7-28.

⁴⁴ Ex. 2000, FSA, pp. 5.7-17 and 5.7-28.

⁴⁵ Ex. 2000, FSA, p. 5.7-28.

not be cumulatively considerable. Thus, Willow Rock will have a less than significant cumulative impact related to hazards, hazardous materials, hazardous waste, and wildfire.⁴⁶

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 6.E-3 and Table 6.E-4 demonstrate that, with implementation of specific Conditions of Certification, the Willow Rock Energy Storage Center will comply with applicable LORS.

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
Federal		
Section 302, Emergency Planning and Community Right-to-Know Act (EPCRA) (Public Law 99-499 42 USC 110222) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370).	Requires one-time notification if EHS are stored in excess of TPQs.	Compliant. Conditions of Certification HAZ-1 and HAZ-2 require the owner to prepare an HMBP and SPCC Plan prior to the start of operations and not use any hazardous material not on that list unless approved in advance by the CPM. HMBPs will be prepared for the project and submitted to Kern County Public Health Services Department - Hazardous Materials Program (the CUPA), uploaded to the California Environmental Reporting System (CERS), and to the CPM for approval.
Section 304, EPCRA (Public Law 99-499, 42 USC 11002) and Emergency Planning and Notification (40 CFR 355).	Requires notification when there is a release of hazardous material in excess of its Reportable Quantity (RQ).	Compliant. Conditions of Certification HAZ-1 and HAZ-2 require the owner to prepare an HMBP and SPCC Plan prior to the start of operations. Any releases of hazardous materials at the project facility in excess of its RQ will follow the notification procedures described in the HMBP.
Hazardous Waste Storage Requirements (40 CFR Part 262).	Includes provisions for securing hazardous waste storage areas to prevent unauthorized access and potential release of hazardous materials.	Compliant. Conditions of Certification HAZ-1 and HAZ-2 require the owner to prepare the HMBP and SPCC Plan prior to the start of operations and not use any hazardous material not on that list unless approved in advance by the CPM. The HMBP will include information regarding the secure storage of hazardous waste and

⁴⁶ Ex. 2000, FSA, pp. 5.7-17, 5.7-28.

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
		materials. HAZ-3 requires the owner to obtain appropriate hazardous waste permits. HAZ-4 requires the owner to prepare a site-specific construction security plan and HAZ-5 an operations security plan.
Section 311, EPCRA (Public Law 99-499, 42 USC 11021) and Hazardous Chemical Reporting: Community Right-to-Know (40 CFR 370).	Requires that Safety Data Sheets (SDSs) for all hazardous materials or a list of all hazardous materials be submitted to the State Emergency Response Commission Local Emergency Planning Committee (LEPC), and Kern County Public Health Services Department - Hazardous Materials Program	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP will include a list of hazardous materials for submission to the State Emergency Response Commission LEPC and Kern County Public Health Services Department - Hazardous Materials Program
Section 313, EPCRA (Public Law 99-499, 42 USC 11023) and Toxic Chemical Release Reporting: Community Right-to-Know (40 CFR 372).	Requires annual reporting of releases of hazardous materials.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. HAZ-6, -7, and -8 also require the implementation of a soils management plan and the reporting and remediation of any hazardous wastes found onsite or along the gen-tie line route soils. Any releases of hazardous materials at the project facility will follow the notification procedures described in the HMBP.
Section 311, CWA (Public Law 92-500, 33 USC 1251 et seq.) and Oil Pollution Prevention (40 CFR 112). plan if the total oil and petroleum	Requires preparation of an SPCC storage (including aboveground storage tanks (ASTs), oil-filled equipment, and drums) is greater than 1,320 gallons or if the oil or oil products stored in underground storage tanks (USTs) exceeds 42,000 gallons.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan will be prepared for the project facility if cumulative storage of oil and oil products on-site is greater than 1,320 gallons and/or storage of oil and oil products in USTs is greater than 42,000 gallons.

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
U.S. Department of Transportation Regulations, 49 CFR 171-177.	Governs the transportation of hazardous materials, including the marking of transportation vehicles.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP will describe transportation requirements for hazardous materials stored at the project facility.
Hazardous Waste Operations and Emergency Response (49 CFR Section 1910.12).	Specifies the operational and emergency response requirements related to the use, generations, and storage of hazardous materials.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP will describe operational and emergency response requirements related to the use, generation, and secure storage of hazardous materials.
Resource Conservation and Recovery Act (RCRA), Title 42, Chapter 82.	Regulates transportation, treatment, storage, and disposal of hazardous waste.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP will establish procedures related to the transportation, treatment, storage, and disposal of hazardous waste.
Toxic Substances Control Act (TSCA), Title 15, Chapter 53.	The TSCA addresses the production, importation, use, and disposal of specific chemicals.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP will establish procedures for the use of hazardous materials.
Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), Title 42, Chapter 103.	Provides procedures to respond to releases and threatened releases of hazardous substances, pollutants, and/or contaminants.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations.
State		
Cal. Code Regs., tit. 8, §§ 339; 3200 et seq.,	Lists hazardous chemicals under the Hazardous Substance Information and Training Act; addresses control of hazardous	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
5139 et seq. and 5160 et seq.	substances; and addresses hot, flammable, poisonous, corrosive, and irritant substances.	operations. The HMBP will describe hazardous material handling requirements related to the control of hazardous substances, including hot, flammable, poisonous, corrosive, and irritant substances.
Health and Safety Code, Section 25500 et seq. (HMBP).	Requires preparation of an HMBP if hazardous materials are handled or stored in excess of threshold quantities.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An HMBP will be prepared for the project and submitted to Kern County Public Health Services Department - Hazardous Materials Program
Health and Safety Code, Section 25270.13 (Aboveground Petroleum Storage Act).	Requires preparation of an SPCC plan if oil is stored in a single AST with capacity greater than 660 gallons or if the total petroleum storage (including ASTs, oil-filled equipment, and drums) is greater than 1,320 gallons.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. An SPCC plan will be prepared for the project and implemented if cumulative storage of oil and oil products on-site is greater than 1,320 gallons.
Health and Safety Code, Section 25249.5 through 25249.13 (Safe Drinking Water and Toxics Enforcement Act) (Proposition 65).	Requires warning to persons exposed to a list of carcinogenic and reproductive toxins and protection of drinking water from the same toxins.	Compliant. The project facility will be appropriately labeled for any chemicals stored onsite that are on the Proposition 65 list.
Health and Safety Code, Section 25100 through 25259 Hazardous Waste Control Law (HWCL).	Establishes the management requirements for hazardous waste storage, treatment, and transportation.	Compliant. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The HMBP will include details about the storage and transportation of hazardous materials and waste.
CVC Section 32000 – 32053.	Regulates the transportation of hazardous materials, including licensing and notification of hauling routes.	Compliant. Transportation of hazardous materials to and from the project facility will follow all licensing and notification requirements. See also Conditions of Certification TRANS-3 and -4

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
Health and Safety Code, Section 25280 through 25299 (Underground Storage of Hazardous Substances).	Regulates the construction, maintenance, testing, and use of USTs for the storage of hazardous substances.	Compliant. The project facility is not expected to have any USTs therefore a UST monitoring plan is not required for the facility.
Title 24 (California Fire Code).	Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) or an HMBP that includes the required information.	Compliant. HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility will prepare an HMBP that will include details that satisfy the requirements of the HMMP and HMIS.
California Code of Regs., Title 22 (Hazardous Waste Management).	Establishes management requirements for hazardous waste, including standards applicable to generators and transporters of hazardous waste.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP will include details regarding hazardous waste generation and transportation. Includes manifest recordkeeping requirements.
Health and Safety Code, Hazardous Materials Release Response Plans and Inventory Law, Division 20, Chapter 6.95.	Regulates the release or accidental release of hazardous materials.	Compliant. HAZ-6, -7, and -8 also require a soils management plan and the reporting and remediation of any hazardous wastes found onsite or in the soils along the gen-tie line route.
Local		
Kern County Code of Ordinances ch. 8.04, storage of hazardous substances	Regulates the construction, maintenance, testing, and use of USTs for the storage of hazardous substances	Compliant. The project facility is not expected to have any USTs therefore a UST monitoring plan is not required for the facility.
Kern County Code of Ordinances ch. 8.04, notification requirements	Notification requirements for known or suspected release of hazardous materials to the air or soil and also may result in discharges into stormwater.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project HMBP will include procedures for notification if there is a known or suspected release of a hazardous substance

TABLE 6.E-3 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
		and the SPCC Plan which may result in discharges into stormwater.
Kern County General Plan	Requires facilities that handle hazardous materials or wastes to be designed, constructed, and operated in accordance with all applicable laws and regulations.	Compliant. The project will comply with all local, state, and federal regulations for hazardous materials handling, storage, and transportation.

TABLE 6.E-4 Conformance with LORS Applicable to Wildfire		
Applicable LORS	Description of LORS	Discussion/Conclusion
State		
Cal. Code of Regs., tit. 8 § 1920, et seq.	Regulations for fire protection systems.	Compliant. A Fire Prevention Plan will be required by Conditions of Certification WORKER SAFETY-1 & WORKER SAFETY-2.
Requirements for fire protection. Cal. Code of Regs., tit. 8, §§ 6150, et seq.; 6151, et seq.; 6165, et seq.; 6170, et seq.; § 6175, et seq.; 6183, et seq.; 6184, et seq.	Requirements for fire extinguishers, standpipe and hose systems, automatic sprinklers, fire extinguishing systems	Compliant. A Fire Prevention Plan will be required by Conditions of Certification WORKER SAFETY-1 & WORKER SAFETY-2.
Cal. Code of Regs., tit. 24 (California Fire Code). Establishes best practices for fire safety and prevention.	Requires the preparation of a Hazardous Materials Management Plan (HMMP) and Hazardous Materials Inventory Statement (HMIS) or an HMBP that includes the required information.	Compliant. Condition of Certification HAZ-1 requires the owner to prepare an HMBP and SPCC Plan prior to the start of operations. The project facility will prepare an HMBP that will include details that satisfy the requirements of the HMMP and HMIS.
Public Resource Code Sections 4427, 4428, and 4431.	Outlines fire safety and wildfire protection standards in conjunction with building, construction, and development in State Responsibility Areas (SRAs).	Compliant. A Fire Prevention Plan will be required by Conditions of Certification WORKER SAFETY-1 & WORKER SAFETY-2. The project will include preparation and implementation of a Fire Prevention Plan during construction and O&M activities that will be consistent with these General Plan policies.
Local		
January 2004 Revised Update Kern County General Plan EIR, section 4.9 Human Health and Risk of Upset and section 4.11 on public services policy. January 2004 Revised Update Kern County General Plan, sections 4.1, Safety elements, 4.2, General Policies and Implementation Measure, which Apply to More	Establishes policies and programs to protect the community from risks associated with seismic, geological, flood, and wildfire hazards.	Compliant. Conditions of Certification HAZ-1, -2, and -3 plus WORKER SAFETY-1 & WORKER SAFETY-2 will require adherence to these policies regarding hazardous materials, hazardous waste, and fire prevention.

Than One Safety Constraint, 4.7, Kern County Emergency Plan, 4.9, Hazardous Materials.		
Kern County Code of Ordinances Chapter 17.32.	Adopts the California Fire Code.	Compliant. The project will be consistent with the requirements set forth in the Kern County ordinance.
Kern County Ordinance Chapter 17.34 - WILDLAND-URBAN INTERFACE CODE	Provides minimum uniform standards for basic emergency access, perimeter wildfire protection measures, signing and building numbering, private water supply reserves for emergency fire use and vegetation modification.	Compliant. The project will be consistent with the requirements set forth in the Kern County ordinance.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding hazards, hazardous materials, hazardous waste, and wildfire.

iv. Agency and Public Comment

No comments have been received regarding the topic of hazards, hazardous materials, hazardous waste, and wildfire besides those already addressed in the FSA.⁴⁷

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. Willow Rock Energy Storage Center will generate and use hazardous materials during construction of the project. Condition of Certification **HAZ-1** ensures the project owner provides an accurate list of hazardous materials used and stored on the site during construction and a spill control and clean-up plan. Condition of Certification **HAZ-3** ensures the project owner obtains a USEPA identification number before starting construction. Condition of Certification **HAZ-4** requires the project owner to create and implement an approved construction security plan.

⁴⁷ See Ex. 2000, FSA, pp. 5.7-31 – 5.7-34; 8/21/2025 Evidentiary Hearing RT pp. 48:21 – 68:8.

2. Operation of Willow Rock will involve the use of hazardous materials. Condition of Certification **HAZ-1** requires submission of the Hazardous Materials Business Plan and Spill Prevention Control and Countermeasure Plan for operations at the project site to the Kern County Public Health Services Department - Hazardous Materials Program, the CUPA for the project area. Condition of Certification **HAZ-1** ensures that hazardous material introduced to the project site complies with applicable LORS. Condition of Certification **HAZ-5** requires the project owner to create and implement an approved operations security plan.
3. The project site is not a listed hazardous material site. Ground disturbing activities will have the potential to encounter unknown impacted groundwater and/or soil. Condition of Certification **HAZ-6** requires the submission of a Soil Management Plan to the Kern County CUPA, for review and comment, and to the Compliance Project Manager for review and approval prior to the start of any ground disturbing activities. If during excavations for transmission line support structures or undergrounding of the line suspected contaminated soils were found, Conditions of Certification **HAZ-7** and **HAZ-8** will implement controls and investigations to ensure that any hazardous wastes were remediated and workers protected.
4. Potential impacts from the hazardous substances used on site are not significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.
5. Project construction and operation will not result in excessive noise levels or safety hazards to public or private airports.
6. Project construction and operation is not anticipated to impact the Kern Multi-Jurisdiction Hazard Mitigation Plan or the Kern County Master Plan and will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
7. Compliance with applicable LORS and implementing best management practices and engineering controls in this project ensure wildland fire risk will not be significant.
8. The California Department of Forestry and Fire Protection has not assigned a Fire Hazard Severity Zone rating for the area encompassing Willow Rock and the gen-tie line. Willow Rock does not fall within a State Responsibility Area.
9. The likelihood of cumulative impacts originating from simultaneous releases of hazardous materials from Willow Rock and another project is less than significant.
10. Implementation of the mitigation measures described in the evidence and contained in the Conditions of Certification ensures that Willow Rock will not cause significant impacts to public health and safety resulting from the handling, use, storage, or transportation of hazardous materials.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to hazards, hazardous materials, hazardous waste, or wildfire.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to hazards, hazardous materials, hazardous waste, or wildfire.

6 Public Health and Safety

F. Solid Waste Management

i. Introduction

This section reviews the plans of the Willow Rock Energy Storage Center (Willow Rock or project) regarding **Solid Waste Management** for reducing the potential health risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous wastes. This section also considers whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS). Management of hazardous waste and applicable federal and state regulations are discussed in the **Hazards, and Hazardous Materials Management, Hazardous Waste, and Wildfire** section of this Decision.

Evidence on the topic of Solid Waste Management is contained in Exhibits 1025, 1032-1033, 1037, 1040-1041, 1053, 1111-1112, 1119-1120, 1132, 1155, 1183-1184, 1233, 1323, and 2000, and in the Reporter's Transcript of the Evidentiary Hearing.¹

a. Setting and Project Description

Willow Rock will be on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southeastern Kern County, California.² The immediate vicinity is dominated by undeveloped or empty lots of land. The nearest residence is approximately two miles west of the site and no schools or medical facilities are present within a 3-mile radius of the Willow Rock Site.³

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the Willow Rock project, please refer to the **Project Description** section of this Decision.

ii. Environmental Analysis of Solid Waste Management

a. Thresholds of Significance

This evaluation assesses the degree to which the project would potentially cause a significant impact to Solid Waste Management according to the CEQA Guidelines listed in **Table 6.F-1**.

¹ 8/21/25 Evidentiary Hearing RT pp. 39:1 – 48-20.

² Ex. 2000, FSA, p. 5.7-1.

³ Ex. 2000, FSA, p. 5.7-8.

TABLE 6.F-1 Solid Waste Management⁴				
Checklist Question	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
1. Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☒	☐	☐
2. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☒	☐	☐

b. Impact Assessment and Mitigation

Nonhazardous solid waste generated during construction is anticipated to consist of scrap wood, glass, plastic, metal, concrete, silicate or mineral insulation, and trash. Willow Rock will employ a third-party to properly recycle and dispose of solid waste rather than relying on a municipal service. Solid waste generated during the construction and operational phases of the project will be recycled and diverted from landfills to the extent possible.⁵

1. Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or hazardous waste?

A. Construction

During the expected 60-month construction period, solid waste consisting of the following materials will be generated:

- Paper, wood, glass, insulation, and plastics (5,500 tons)
- Excess Concrete (700 tons) (140 tons annually)
- Metal (600 tons) (120 tons annually)
- Drill cuttings and waste rock (1,319,000 cubic yards) – An estimated 1.3 million cubic yards of waste rock will be produced as a result of underground cavern excavation. In addition, approximately 19,000 cubic yards of drill cuttings in the form of slurry sludge will be produced from the drilling of the five 8-foot diameter access shafts.⁶

⁴ Source: Ex. 2000, FSA, p. 5.12-4, citing Environmental checklist established by CCR, tit. 14, Div. 6, Ch. 3, Appendix G, solid waste management.

⁵ Ex. 2000, FSA, p. 5.12-1.

⁶ Ex. 2000, FSA, p. 5.12-4.

Where feasible, materials generated during subsurface excavation will be used during grading operations. The excess waste rock will be managed using one or a combination of the following three options:

1. Onsite reuse to construct an architectural berm.
2. Transport off-site for commercial reuse.
3. Transport off-site for permanent storage or reuse.⁷

Assuming the excess waste rock from excavation will not be disposed in a local landfill, an estimated 6,800 tons of solid waste will be generated during project construction.⁸

Construction solid waste will be diverted from landfills and recycled as practical to comply with AB 341 and the Green Building Code. However, solid waste that cannot be recycled will be disposed in Class III landfills. The three local landfills identified have a combined remaining capacity of 77 million cubic yards. Approximately 28,564 cubic yards of solid waste will be generated during project construction. Assuming all the construction-related solid waste could not be recycled, it would represent 0.04 percent of the combined available capacity of the three listed landfills. The Construction Waste Management Plan required in Condition of Certification **SOLID WASTE-1** will assist with the recycling of solid waste generated during project construction to the extent possible.⁹

Therefore, the impact resulting from the construction of the proposed project on landfill capacity will be less than significant.¹⁰

B. Operation

During project operations, the following primary waste streams will be generated annually:

- Spent air-stream filters (23,100 pounds [lbs.] or 11.55 tons) – Operation of the compressors and turbines is estimated to generate 5,775 lbs. of spent air-stream filters each quarter.
- Operation of the water treatment system is estimated to generate Activated carbon filters (1,000 lbs. or 0.5 tons), Ultrafiltration membranes (1,000 lbs. or 0.5 tons), Reverse osmosis membranes (1,200 lbs. or 0.6 tons), Gas contact membranes (20 lbs.), and Cartridge filters (500 lbs. or 0.25 tons).
- Office/Industrial solid waste (416 cubic yards, or 57 tons) – An estimated 8 CY per week of office related waste will be generated consisting of paper, packaging, lunch food waste,

⁷ Ex. 2000, FSA, p. 5.12-5.

⁸ Ex. 2000, FSA, p. 5.12-5.

⁹ Ex. 2000, FSA, p. 5.12-5.

¹⁰ Ex. 2000, FSA, p. 5.12-5.

and other miscellaneous items. An undisclosed amount of small metal or electrical materials will be generated during maintenance activities.¹¹

Approximately 152 tons of solid waste will be generated during operation of the facility annually. Operational solid waste will be diverted from landfills and recycled as practical to comply with AB 341 and the Green Building Code. However, solid waste that cannot be recycled would be disposed of at a Class III landfill. As stated above, the three identified local landfills have a combined remaining capacity of 77 million cubic yards. Approximately 556 cubic yards of solid waste will be generated annually during project operation. The annual generation of solid waste during project operations is insignificant compared to the remaining capacity of the three identified local landfills. The Operation Waste Management Plan required in Condition of Certification **SOLID WASTE-1** will assist with the recycling of solid waste generated during project operation to the extent possible.¹²

Therefore, the impact resulting from the operation of the proposed project on landfill capacity will be less than significant.¹³

2. Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

During construction, the project will collect and haul construction debris off-site for recycling or disposal in accordance with local programs that comply with state requirements.¹⁴

During operations, the project will comply with federal, state, and local statutes and regulations related to solid waste. Commercial solid waste and spent air and water filtering cartridges will be collected and hauled off-site for recycling or disposal. Management of hazardous waste and applicable federal and state regulations are discussed in in the **Hazards, and Hazardous Materials Management, Hazardous Waste, and Wildfire** section of this Decision.¹⁵

The project will comply with federal, state, or local statutes and regulations related to solid waste management and reduction, therefore, no impact will occur.¹⁶

¹¹ Ex. 2000, FSA, pp. 5.12-5 – 5.12-6.

¹² Ex. 2000, FSA, p. 5.12-6.

¹³ Ex. 2000, FSA, p. 5.12-6.

¹⁴ Ex. 2000, FSA, p. 5.12-6.

¹⁵ Ex. 2000, FSA, pp. 5.12-6 – 5.12-7.

¹⁶ Ex. 2000, FSA, p. 5.12-7.

c. Cumulative Impacts

There are five projects that have been approved, but not yet constructed (omitting those requesting rezoning or variance), within a 10-mile radius of the project site. These projects fall within the following categories:

- Solar Energy (3)
- Residential (1)
- Mining (1)¹⁷

The three solar energy projects and the mining project are expected to generate only minimal amounts of solid waste during operation. The status of the residential project is speculative due to an entity associated with the project filing bankruptcy in 2022. Therefore, the cumulative impact of solid waste on local landfill capacity will be negligible.¹⁸

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 6.F-2 demonstrates that, with implementation of specific Conditions of Certification, the Willow Rock Energy Storage Center will comply with applicable LORS.

TABLE 6.F-2 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
Federal		
Resource Conservation and Recovery Act (RCRA), 40 CFR, Subtitle D.	Provides guidelines for the storage and collection of residential, commercial, and institutional solid waste (Part 243), source separation for material recovery (Part 246), and design of municipal solid waste facilities (Part 258).	Compliant. All landfills proposed for use with the project will comply with Federal regulations.
State		
Integrated Waste Management Act (PRC § 40000).	Established the California Integrated Waste Management Board (CIWMB), revamped the government codes regulating solid waste management, and required cities and counties to reduce the	Compliant. All landfills proposed for use with the project will comply with State statutes. Condition of Certification SOLID WASTE-1 will assist with the solid waste reduction requirement of the statute.

¹⁷ Ex. 2000, FSA, p. 5.12-7.

¹⁸ Ex. 2000, FSA, p. 5.12-7.

TABLE 6.F-2 Conformance With LORS Applicable To Hazards And Hazardous Materials/Waste		
Applicable LORS	Description Of LORS	Discussion/Conclusion
	amount of solid waste disposed of in landfills by 50 percent.	
Reduction of Solid Waste (Pub. Resources Code, § 41780.01) (AB 341).	Set a statewide goal of reducing solid waste by 75 percent by 2020. It also established mandatory recycling programs for solid waste.	<u>Compliant.</u> All landfills proposed for use with the project will comply with State statutes. Condition of Certification SOLID WASTE-1 will assist with the solid waste reduction requirement of the statute.
Local		
Kern County ordinance 8.28.060.	Provides that is the duty of every owner of a commercial property to arrange for the proper collection and disposal of all discarded material accumulated on the premises.	<u>Compliant.</u> The project owner and all landfills proposed for use with the project will comply with local ordinances.
Kern County ordinance 8.28.080.	Provides that it is unlawful for any person to cause or permit the illegal dumping of waste matter on the right-of-way of any public highway, street, easement, thoroughfare, or upon any public grounds, or into any stream or dry watercourse, or in any manner not otherwise authorized by this code or State or Federal law.	<u>Compliant.</u> The project owner and all landfills proposed for use with the project will comply with local ordinances.
Kern County ordinance G-8337.	Establishes a commercial recycling program.	<u>Compliant.</u> The project owner and all landfills proposed for use with the project will comply with local ordinances.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding solid waste management.

iv. Agency and Public Comment

No comments have been received regarding the topic of hazards, hazardous materials, hazardous waste, and wildfire besides those already addressed in the FSA.¹⁹

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. Willow Rock Energy Storage Center will generate waste during construction and operation of the project.
2. Before construction or operations can begin, Condition of Certification **WASTE-1** requires the project owner to develop and implement an Operation Waste Management Plan.
3. Solid waste that cannot be recycled will be disposed in Class III landfills.
4. Construction-related solid waste will be no greater than 0.04 percent of the remaining capacity of the three identified local landfills.
5. Generation of solid waste during project operations is insignificant compared to the remaining capacity of the three identified local landfills.
6. Five projects are approved, but not constructed within a 10-mile radius of the project site. Four are likely to generate only minimal amounts of solid waste during operation and the fifth is speculative because it is associated with an entity that filed bankruptcy in 2022. The cumulative impact of solid waste on local landfill capacity will be negligible.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Solid Waste Management.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Solid Waste Management.

¹⁹ See Ex. 2000, FSA, pp. 5.7-31 – 5.7-34; 8/21/25 Evidentiary Hearing RT pp. 48:21 – 68:8.

7 Environmental Analysis

This section analyzes the direct, indirect, and cumulative impacts, and compliance with laws, ordinances, regulations, and standards (LORS) of the Willow Rock Energy Storage Center on natural and cultural resources in the area, including biological resources, soil and water resources, cultural and tribal cultural resources, and geological and paleontological resources.¹

A. Biological Resources

i. Introduction

This section describes the biological resources present or with the potential to occur in or near the Willow Rock Energy Storage Center Project. In addition, this section provides the regulatory background, discusses impacts associated with the construction and operation of the proposed project, and identifies Conditions of Certification to reduce impacts to sensitive biological resources where possible.

The analysis in this section is based on information described in the technical studies and surveys conducted by the Applicant, independent Staff review of existing literature, evidence introduced by Intervenor Center for Biological Diversity (the Center), and coordination with and comment by the regulatory agencies including the California Department of Fish and Wildlife (CDFW) and Lahontan Regional Water Quality Control Board (Lahontan RWQCB). Staff also conducted multiple reconnaissance level surveys and project site visits in 2024 and 2025.

This section describes the environmental setting and baseline conditions for biological resources associated with the project. Vegetation types within the project area and study area are described to characterize botanical resources and wildlife habitat values. Biotic habitats suitable for the occurrence of special-status plant and wildlife species are also described. For the purposes of this analysis, “project area” refers to the areas that would be subject to permanent or temporary ground disturbance plus a 50-foot buffer. The term “study area” refers to the project site plus a 1000-foot buffer around the Willow Rock Energy Storage Center site and a 500-foot buffer around the gen-tie alignment.

The Supplemental Application for Certification (SAFC) describes the project’s impacts on biological resources. The Final Staff Assessment prepared by the CEC Staff includes a substantive analysis of Willow Rock’s impacts on biological resources. Evidence on the topic of **Biological Resources** is contained in: Applicant’s Exhibits 1025, 1032, 1033, 1038, 1040—1045, 1047—1048, 1053, 1061—1068, 1070, 1078, 1081—1088, 1091—1099, 1101, 1105—1110, 1112—1115, 1117—1122, 1124—1129, 1133—1135, 1142, 1148, 1149, 1155, 1119, 1127, 1130, 1132, 1133—1135, 1139, 1142, 1148—1149, 1155, 1185, 1201—1206, 1212—

¹ Cal. Code Regs., tit. 20, § 1745.5(b).

1213, 1233, 1235—1237, and 1323; Staff’s Exhibit 2000; Intervenor’s Exhibits 4000—4004; and the Reporter’s Transcript of the Evidentiary Hearing.²

a. Environmental Setting

The Willow Rock Energy Storage Center will be a nominal 520-megawatt (MW) gross (500 MW net) and 4,160 megawatt-hour (MWh) gross (4,000 MWh net) facility using advanced compressed air energy storage (A-CAES) technology. The major components consist of 1) the Willow Rock Energy Storage Center site where all of the generating, storage, and ancillary systems will be located, and 2) a proposed 19-mile long 230-kilovolt (kV) generation tie (gen-tie) route to deliver the facility’s electricity to the Southern California Edison (SCE) Whirlwind Substation.

The Supplemental AFC describes in detail a proposed 19-mile gen-tie route, plus eight optional routes, to connect the storage facility to the SCE Whirlwind Substation located southwest of Willow Rock at the intersection of 170th Street W and Rosamond Boulevard. (See **Project Description** Figure 2.) The proposed options for the gen-tie lines pass through a variety of base zoning designations and their zoning overlays, including the general base zoning designations of: Estate, Exclusive Agriculture, Limited Agriculture, General Commercial, Neighborhood Commercial, Light Industrial, Open Space, Low Density Residential, Platted Lands, and Recreation Forestry. The final alignment will depend on feasibility, site access, and potential interactions with existing and planned uses adjacent to the route.

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

1. Regional Setting

The United States Environmental Protection Agency (USEPA) has established ecoregions which describe ecosystems that share common climatic and vegetation characteristics. The project area is categorized by the following: North American Deserts (Level I), Warm Deserts (Level II), Mojave Basin and Range (Level III), and Western Mojave Basin (Level IV) (USEPA 2025). The Level III Mojave Basin and Range ecosystem experiences four distinct seasons with large diurnal fluctuations in temperature. Winter storms from the northern Pacific Ocean can bring rain into the region; however, the Sierra Nevada Mountain Range acts as a boundary that prevents west coast moisture and storms from moving east. The rain shadow that the Sierra Nevada Mountain Range creates causes this region to be the hottest and driest portion of the Mojave Desert. Despite the arid climate, the region supports a large variety of flora and fauna, many of which have evolved specifically for the region. Common habitats found typically

² 8/12/2025 Evidentiary Hearing RT 73:7 – 179:15.

include creosote bush scrub, desert saltbush scrub, Joshua tree woodland, desert wash, alkali scrub, and juniper-pinyon woodland.³

The Level IV Western Mojave Basins Ecoregion includes alluvial plains, fans, and bajadas of the major valleys lying between the scattered, low and arid mountain ranges and foothills of the western Mojave Desert. There is some variation in climate and vegetation from north to south, but the basins typically are dominated by creosote bush and white bursage, with areas of shadscale, four-wing saltbush, and on some upper bajadas and fans, scattered western Joshua trees (*Yucca brevifolia*).⁴

2. Local Setting

The project area encompasses the approximately 88.6-acre Willow Rock site, an additional 133 acres of private land parcels surrounding the site (referred to as P1, P2 North, P2 South, and Villa Haines) that will be allocated for potential temporary staging and laydown areas, and the roughly 380.0-acre right-of-way (ROW) associated with the approximately 19-mile 230-kilovolt (kV) generation-tie (gen-tie) line plus a 500-foot buffer. The final site boundary and potential construction laydown areas will depend on whether excavated cavern rock would be hauled to offsite facilities in Kern County and Los Angeles County (Option 1 – Without Berm) or if excavated cavern rock would be repurposed onsite for an architectural berm on the west and north sides of the facility (Option 2 - With Berm).⁵

The Willow Rock Energy Storage Center site is within the 7.5-minute Soledad Mountain U.S. Geological Survey (USGS) topographic quadrangle. The gen-tie route and variances are within the Soledad Mountain, Rosamond, Fairmont Butte, and Little Buttes topographical quadrangles. Topography in the project site slopes from northwest to southeast with flat areas in the southern portions and gently rolling hills in the central portion. Elevations range from approximately 2,400 feet (732 meters) in the southeast corner of the gen-tie line at the corner of Rosamond Boulevard and 65th Street West to 2,720 feet (830 meters) along Dawn Road. Dominant soils within the project area consist of sandy loams.⁶

The annual average total precipitation is 6.00 inches (15 centimeters), per data from the past 20 years. Over the last five years, the yearly average total precipitation has been recorded at 6.60 inches (16.8 centimeters). According to climatological data referenced at Rosamond Skypark Airport, total rainfall for 2023 was recorded at 11.03 inches.⁷

³ Ex. 2000, FSA, pp. 5.2-1 – 5.2.2.

⁴ Ex. 2000, FSA, pp. 5.2-1—5.2-2.

⁵ Ex. 2000, FSA, p. 5.2-2.

⁶ Ex. 2000, FSA, p. 5.2-2.

⁷ Ex. 2000, FSA, p. 5.2-2.

3. Vegetation and Landforms

The dominant vegetation communities that occur in the project site reflect those commonly found throughout the Western Mojave Basins Ecoregion. Portions of the project site and surrounding area have been subject to ongoing disturbance from existing infrastructure and road development, illegal dumping, recreational use, and other activities.

Based on the Applicant's vegetation mapping efforts, 91 native species and 11 non-native species were observed. Of the 11 non-native species, the Applicant identified several non-native invasive plant species within the study area during surveys conducted in 2023 and 2024.⁸ The vegetation communities occurring within the study area are listed in **Table 7.A-1**.

TABLE 7.A-1 Vegetation Communities And Land Cover Types Within The Study Area⁹	
Vegetation Community/Land Cover Type	Acreage
Allscale Scrub	571.36
Cheesebush Scrub	114.49
Creosote Bush – White Bursage Series	1,447.42
Creosote Bush Scrub	154.06
Disturbed/Developed	1,069.07
Joshua Tree Woodland	83.82
Needleleaf Rabbitbrush Scrub	77.08
Non-Native Grassland and Forbs	151.49
Rubber Rabbitbrush Scrub	119.35
Tamarisk Thickets	2.21
White Bursage Scrub	80.55
Total	3,870.90

4. Aquatic Resources

Based on the Applicant's Delineation of Jurisdictional Waters, dated January 2024 and subsequent revisions to address comments by Staff, CDFW, and Lahontan RWQCB, there are 25 documented ephemeral drainage features in the study area that meet the definitions of waters of the State under Section 401 of the Clean Water Act and CDFW jurisdictional streams under Sections 1600 through 1615 of the Fish and Game Code.¹⁰

An additional 49 ephemeral drainages within the study area were determined by the Applicant to not meet the definitions of Lahontan RWQCB and CDFW jurisdiction. However, Staff does

⁸ See Ex. 2000, FSA, Table 5.2-2.

⁹ Source: Ex. 2000, FSA, Table 5.2-1.

¹⁰ Ex. 2000, FSA, p. 5.2-10.

not concur and considers these features and drainages to meet Lahontan RWQCB and CDFW jurisdiction because many of these features exhibit signs of hydrology even though some are short. Staff calculates a total of 24,532 acres and 55,739.57 linear feet of both undisputed and disputed drainages, noting that not all the drainage features listed by Staff would be impacted during implementation of the project.¹¹

b. Plant and Wildlife Species and Habitats in the Project Area

The record contains evidence of extensive surveys, habitat assessments, and literature reviews to assess presence of species and habitat that may be impacted by the Willow Rock Energy Storage Center. For reconnaissance surveys, the accessible study area was assessed on foot to record pertinent field data and current site conditions. Adjacent undeveloped areas within a 1,000-foot (305-meter) buffer of the Willow Rock site and a 500-foot (152-meter) buffer along the gen-tie alignment that were unfenced and presented no signage (i.e., “No Trespassing” and/or “Private Property”) were also evaluated. Inaccessible areas were scanned for suitable habitat with binoculars.¹²

The evidence introduced by the Applicant, Staff, and the Center demonstrates that:

- Critical habitats for federally-listed species do not occur in or adjacent to the project site.¹³
- The project site consists of primarily undeveloped lands allowing for localized wildlife movement including a medium priority linkage along the west side of SR-14, but existing development in the Rosamond area prevents regional connectivity between the Tehachapi Mountains to the north and northwest and the San Gabriel Mountains to the south.¹⁴
- A 687,000-acre Important Bird Area (IBA) – the Edwards Air Force Base IBA –identified by the Audubon Society surrounds the project area to the south, east, and west and provides open water habitat for thousands of waterbirds in the fall and winter.¹⁵
- Despite a history of disturbances in the project area, including agricultural practices, grazing, existing solar facilities, paved and unpaved roads, and urban development, the project site has the potential to support a variety of common wildlife that are specifically adapted to desert habitats or exhibit adaptations to survive along transitional zones between native habitats and urbanized areas. Common species include a variety of invertebrates, reptiles, birds, and mammals.¹⁶

¹¹ Ex. 2000, FSA, pp. 5.2-10—5.2-14.

¹² Ex. 2000, FSA, pp. 5.2-20—5.2-21.

¹³ Ex. 2000, FSA, p. 5.2-14.

¹⁴ Ex. 2000, FSA, pp. 5.2-14—5.2-15. 5

¹⁵ Ex. 2000, FSA, p. 5.2-15.

¹⁶ Ex. 2000, FSA, pp. 5.2-15—5.2-18.

- Ten sensitive natural communities as defined by CDFW were identified within 10 miles of the project area.¹⁷ One of these communities, Joshua tree woodland, occurs within or immediately adjacent to the project area, along the northern portion of the gen-tie alignment.¹⁸
- A total of 53 special-status plants were identified within the general region during the literature review. Sixteen special-status plants were either observed during 2023 and 2024 focused rare plant surveys or determined to have some potential to occur in or near the project site based on the presence of suitable habitat and/or the proximity to known recorded occurrences.¹⁹
- Except for the state-listed as threatened western Joshua tree (*Yucca brevifolia*), which occurs throughout the project site (see discussion below), no other federally- or state-listed plant species are expected to be present in or near the project site.²⁰
- A total of 79 (nine invertebrates, two amphibians, seven reptiles, 49 birds, and 12 mammals) special status wildlife species were identified within the general region during the literature review. Eight were identified through direct observation in surveys conducted in 2023 and 2024 by the Applicant, and an additional 28 were determined to have some potential to occur.²¹
- Six surveys or habitat assessments for special status species were conducted by the Applicant as summarized in **Table 7.A-2**.

¹⁷ Ex. 2000, FSA, Table 5.2-4.

¹⁸ Ex. 2000, FSA, p. 5.2-21.

¹⁹ Ex. 2000, FSA, pp. 5.2-24—5.2-59, and Table 5.2-5.

²⁰ Ex. 2000, FSA, p. 5.2-25.

²¹ Ex. 2000, FSA, 5.2-65—5.2-130, and Table 5.2-8.

TABLE 7.A-2 Summary Of Special-Status Wildlife Surveys Conducted By Applicant For The Project²²

Survey Focus	Survey Type	Dates	Parameters		
			Willow Rock Site	Gen-Tie Alignments	Additional Components
Habitat Assessments	Reconnaissance	March 28 – October 6, 2023	Willow Rock site and 1,000-foot buffer	Gen-tie alignment and 500-foot buffer	Additional gen-tie alignment and 1,000-foot buffer; P2 North/P2 South sites and 1-mile buffer
Crotch's Bumble Bee	Protocol	Apr 25, 26, May 10, Jun 8, 2023; Mar 26, 27, Apr 2, 3, 4, 29, 30, May 1, 2, 3, 2024	Willow Rock site only	Gen-tie alignment only	Additional gen-tie alignment and P2 North/P2 South sites only
Western Burrowing Owl	Protocol	Apr 18, 19, 25, 26, 27, May 10, 11, 23, Jun 7, 21, 22, 23, Jul 5, 26, 2023; Apr 2, 3, 4, 8, 9, May 5, 6, 7, Jun 5, 6, 18, 19, 20, 2024	Willow Rock site and 500-foot buffer	Gen-tie alignment and 500-foot buffer	Additional gen-tie alignment, P2 North/P2 South sites, and 500-foot buffer
Swainson's Hawk	Protocol	March 28, 30, 31, Apr 3, 5, 19, 24, 26, May 9, 10, 12, 22, 23, Jun 8, 2023; Mar 18, 19, 25, 26, 27, Apr 1, 2, 3, 4, 12, 23, 24, May 7, 8, 15, 16, 17, 21, Jun 5, 12, 19, 2024	Willow Rock site and 0.5-mile buffer	Gen-tie alignment and 0.5-mile buffer	Additional gen-tie alignment, P2 North/P2 South sites, and 0.5-mile buffer

²² Source: Ex. 2000, FSA, Table 5.2-7.

Desert Tortoise	Protocol	Apr 18, 19, 25, 26, 27, May 10, 11, 23, Jun 7, 21, 22, 23, Jul 5, 26, 2023; Apr 2, 3, 4, 8, 9, 2024	Willow Rock site and 500-foot buffer	Gen-tie alignment and 500-foot buffer	Additional gen-tie alignment, P2 North/P2 South sites only
Mojave Ground Squirrel	Protocol	Mar 15 – July 15, 2023; Apr 9, Apr 26 – May 1, May 26 – 31, July 1 – 5, 2024	Willow Rock site only	Gen-tie alignment only	Additional gen-tie alignment, P2 North/P2 South sites only

c. Select Listed and Special Status Species in the Project Area

This section describes the surveys for and presence of selected special status species in the Project Area relevant to the environmental analysis and conformance with LORS.

1. Surveys for Western Joshua tree

Western Joshua tree is a candidate for listing under the California Endangered Species Act (CESA) and is also protected under the Western Joshua Tree Conservation Act (WJTCA). It is characterized by its tall, spiky leaves that cluster at the ends of long, branching limbs. Western Joshua trees are adapted to the arid conditions of their native desert habitats. The species exhibits a slow growth rate, with some trees taking several decades to reach maturity. They are particularly vulnerable to environmental changes, including climate fluctuations and habitat disturbances. Wildfires, invasive grasses, and poor seed migration dispersal patterns are additional factors threatening the species.

A total of 3,970 western Joshua trees were recorded in the survey area during the 2024 verification census conducted by the Applicant. Most of the trees documented were live (3,755 individuals or 95%). Class B was the most common recorded size (2,107 individuals or 53%), followed by Class A (1,642 individuals or 41%), and Class C (221 individuals or 6%). **Table 7.A-3** provides the western Joshua tree census results collected for the project, although not all trees identified will be removed or impacted during implementation of the project.²³

²³ Ex. 2000, FSA, 5.2-60.

TABLE 7.A-3 Summary Of Western Joshua Tree Census Data²⁴

Attribute		Willow Rock Site	P1	P2 North and South	Villa Hains	Gen-Tie Alignment
Status	Alive	1,383 (93%)	477 (95%)	799 (95%)	996 (97%)	100 (97%)
	Dead	108 (7%)	24 (5%)	45 (5%)	35 (3%)	3 (3%)
Size Class	Class A	501 (34%)	200 (40%)	316 (37%)	569 (55%)	56 (54%)
	Class B	903 (61%)	278 (55%)	456 (54%)	424 (41%)	46 (45%)
	Class C	87 (5%)	23 (5%)	72 (9%)	38 (4%)	1 (1%)
Total		1,491	501	844	1,031	103

2. Surveys for Crotch's bumble bee

Habitat for Crotch's bumble bee (*Bombus crotchii*) was assessed during focused rare plant surveys conducted in 2023 and 2024, noting all areas within and near the project area for suitable Crotch's bumble bee habitat and nectar sources. Once all nectar source data was collected, a larger polygon was developed to cover areas of suitable habitat for subsequent protocol-level surveys. A March 2023 memo prepared by the Applicant regarding the Crotch's bumble bee survey protocols was reviewed and approved by CDFW prior to conducting surveys. Methods applied during 2024 protocol-level surveys were based on updated, published CDFW guidance.²⁵ The 2023 surveys were postponed due to weather conditions but still conducted during the peak nectar blooming season and colony active period (April 1 – June 30). The 2024 surveys were completed within the colony active period. All surveys were completed by walking transects within suitable habitat and within acceptable weather conditions. All bumble bee observations were recorded during surveys.²⁶

3. Surveys for western burrowing owl

The Applicant's survey methods for burrowing owl (*Athene cunicularia hypugaea*) were generally consistent with CDFW's published guidelines. Slight modifications due to prolonged rainy seasons were discussed with CDFW and performed within the peak breeding season based on weather conditions, with the first survey conducted after most or all burrowing owl migrants were expected to have moved out of the area, but with any resident burrowing owls present. Data recorded during the surveys included observations of burrowing owl individuals or their signs (e.g., pellets, whitewash, feathers, tracks, nest adornments, and auditory cues), suitable natural burrows, complexes, and surrogate burrow structures.²⁷

²⁴ Source: Ex. 2000, FSA, Table 5.2-6.

²⁵ Ex. 2000, FSA, pp. 5.2-62—5.2-63.

²⁶ Ex. 2000, FSA, p. 5.2-63.

²⁷ Ex. 2000, FSA, p. 5.2-63.

4. Surveys for Swainson's hawk

The Applicant's survey methods for Swainson's hawk (*Buteo swainsoni*) were generally consistent with CDFW's published guidelines. Surveys encompassed the project site and a 0.5-mile buffer and included the identification of individual Swainson's hawk individuals, all occupied Swainson's hawk nest trees, suitable nest trees, and documentation of nest competitors (e.g. common ravens, red-tailed hawks).²⁸

5. Surveys for Mojave desert tortoise

The Applicant's survey methods for Mojave desert tortoise (*Gopherus agassizii*) were consistent with published guidelines by the United States Fish and Wildlife Service (USFWS). All surveys were performed in concert with focused rare plant and burrowing owl surveys, which was considered appropriate since all surveys were terrestrial based and require 32-foot (10-meter) transects. Pursuant to the USFWS protocols, all burrows were documented and classified and any desert tortoise sign (e.g., scat, tracks, shell remains, etc.) were recorded.²⁹

6. Surveys for Mohave ground squirrel

The Applicant's survey methods for Mojave ground squirrel (*Xerospermophilus mohavensis*) were generally consistent with CDFW's published guidelines, with approval from CDFW for slight variations. This included identifying known foreign plants, suitable soil types, and potential burrows and burrow complexes. Live-trapping and camera trapping surveys included a combination of installing Sherman live traps and cameras at strategic and pre-selected locations within the project site and a 500-foot (152-meter) buffer to maximize survey results.³⁰

7. Federally- and State-Listed Wildlife

Three state-listed species, including Crotch's bumble bee (candidate for listing), western burrowing owl (candidate for listing), and Swainson's hawk (state-threatened) were observed during 2023 and 2024 focused and protocol-level surveys conducted by the applicant. An additional six federally- and/or state-listed species were determined to have some potential to occur within or near the project site. These include monarch butterfly (*Danaus plexippus*) (proposed for federal listing as threatened), desert tortoise (federally- and state-threatened), tricolored blackbird (*Agelaius tricolor*) (state-threatened), California condor (federally- and state-endangered), mountain lion (*Puma concolor*) (state candidate for listing), and Mohave ground squirrel (state-threatened). Several federally- and/or state-listed wildlife species are known from the region but were determined unlikely to occur as described above. These include vernal pool fairy shrimp (*Branchinecta lynchi*) (federally-threatened), foothill yellow-

²⁸ Ex. 2000, FSA, p. 5.2-64.

²⁹ Ex. 2000, FSA, pp. 5.2-64—5.2-65.

³⁰ Ex. 2000, FSA, p. 5.2-65.

legged frog (*Rana boylei*) (federally- and state-endangered), northwestern and southwestern pond turtle (*Actinemys marmorata* and *A. pallida*) (proposed for federal listing as threatened), southern rubber boa (*Charina umbratica*) (state-threatened), western snowy plover (*Charadrius nivosus nivosus*) (federally-threatened), willow flycatcher (*Empidonax traillii*) (state-endangered), bald eagle (*Haliaeetus leucocephalus*) (state-endangered), and least Bell's vireo (*Vireo bellii pusillus*) (federally- and state-endangered).³¹

8. Fully Protected and other Special-Status Wildlife

In addition to the federally- and state-listed California condor (discussed above), which is also a state fully protected species, three species that receive full protection under the California Fish and Game Code and/or California Code of Regulations, Title 14, section 460 have some potential to occur in or near the project site. These include golden eagle (*Aquila chrysaetos*), which is also protected under the Bald and Golden Eagle Protection Act (BGEPA), ringtail (*Bassariscus astutus*), and desert kit fox (*Vulpes macrotis arsipus*).

Five additional special-status species were incidentally observed by the applicant during 2023 and 2024 surveys, including northern harrier, prairie falcon, loggerhead shrike, Brewer's sparrow, and Le Conte's thrasher. An additional 19 special-status wildlife species were determined to have some potential to occur in or near the project site.

ii. Environmental Analysis of Biological Resources

This evaluation assesses the degree to which the Willow Rock Energy Storage Center will potentially cause a significant impact to biological resources according to the CEQA Guidelines and federal, state, and local rules and regulations. The potential impacts to biological resources associated with construction and operation of Willow Rock is evaluated using the significance criteria from the CEQA Guidelines Appendix G listed in **Table 7.A-4**.

TABLE 7.A-4 Biological Resources Checklist ³²				
Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
1. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by CDFW or USFWS?	☐	☒	☐	☐

³¹ Ex. 2000, FSA, pp. 5.2-65—5.2-66.

³² Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, biological resources.

TABLE 7.A-4 Biological Resources Checklist³²

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
2. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW or USFWS ?	☐	☒	☐	☐
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☒	☐	☐
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?	☐	☐	☒	☐
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☒	☐	☐
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☒	☐	☐

a. Thresholds of Significance

An impact to biological resources would be considered significant (before considering offsetting mitigation measures) if the construction or operation of the Willow Rock Energy Storage Center will result in one or more of the following:

- The potential for reduction, loss, or degradation of habitat for threatened, endangered, or special status species;
- The potential for loss or "take" of any federally- or state-listed plant or animal species, fully protected species, special status species, or species protected by the Migratory Bird Treaty Act (MBTA) or regulations;
- A net loss or permanent change in the extent or functional value of any habitat or biotic community considered biologically, scientifically, recreationally, or economically significant by federal, state, or local policies, statutes, or regulations;

- Adverse effect on federally protected wetlands as defined in Section 404 of the Clean Water Act;
- Alteration or destruction of habitat that precludes reestablishment of native populations of plants and animals;
- Impairment of movement, migration, or dispersal of resident and migratory fish and wildlife species; or
- Substantial loss of habitat or population decline of any native fish, wildlife, or plant species, or overall reduction in biological diversity.³³

b. Direct and Indirect Impacts

Direct impacts under CEQA are those effects that result from a project and occur at the same time and place. Indirect impacts are those caused by a project that occur later in time or are farther removed in distance but are still reasonably foreseeable and related to the project.

Staff has also described the difference between “permanent” and “long-term” project-related impacts, such as conversion of land to a new use, versus “temporary” impacts, such as those associated with temporary work areas needed to construct the transmission line poles, pull sites, and or splicing areas, or other construction impacts such as ground disturbance, noise, human activity, and vehicle traffic associated with the construction phase. Staff notes that some construction activities or land uses will occur for approximately 60 months, so some temporary work areas would be considered more permanent in nature. Even though the construction use of some areas in the project site or along gen-tie line may be short term, the actual temporal effects on wildlife could be long-term due to the loss of these areas for foraging, movement, or reproduction.³⁴

In the context of the Willow Rock Energy Storage Center, direct impacts include the potential for wildlife injury and mortality, the temporary and permanent loss of individual plants, and the loss of habitat used by plant and wildlife species. Indirect impacts to biological resources during construction could result from increased human activity, the introduction of non-native or invasive plants or wildlife, night lighting to support 24-hour construction at the site during specific activities, dust, noise, and soil compaction.

The primary impacts to native plants and wildlife will occur from the removal of desert scrub and Joshua trees from the Willow Rock site. Construction activities will remove vegetation and require large scale clearing and grubbing, grading, and heavy construction for a period of up to 60 months. Removing vegetation will displace native vegetation and wildlife that rely on these habitats. Displacement would likely result in mortality or decreased fitness for some species while other generalist species may benefit from preying on displaced species. Construction of the project would result in mortality or injury to wildlife from vehicle or heavy

³³ Ex. 2000, FSA, pp. 5.2-140—5.2-141.

³⁴ Ex. 2000, FSA, p. 5.2-142.

equipment use, particularly if slow-moving or sedentary animals occur in the path of vehicles or equipment on the site or access roads.³⁵

Additionally, the noise and vibration from controlled detonations (e.g. blasting used to fragment rock) to excavate the underground cavern have been demonstrated to adversely affect a variety of wildlife including nesting birds and ground dwelling animals. Traditional drilling and controlled detonation practices, such as those used in mining or construction, can have significant adverse effects on terrestrial wildlife dependent upon several factors including the blast design, methods and technologies utilized in the process, the location of the blast site, and rock type. Impacts may result in habitat destruction, behavioral changes, and declining air quality.³⁶

After construction, the operation activities will also result in impacts to plants and wildlife occurring from permanent habitat removal, impacts to birds and bats that will collide with the transmission line or exhaust stacks, or ground dwelling species being struck by vehicles on the site or along the gen-tie. Facility lighting could also adversely affect wildlife on the project site and adjacent areas. Noise levels will be higher in habitat adjacent to the facility and could cause wildlife to avoid otherwise suitable habitat around the site.³⁷

The project features a hydrostatic compensating surface reservoir covering approximately 21.5 acres. After initial filling, the surface reservoir will be equipped with an interlocking shape floating cover estimated to be 90 percent effective in reducing evaporation. It is possible that this feature could entrap wildlife species or act as a raven subsidy. Conditions of Certification will be included to ensure that the sides of the reservoir do not result in wildlife entrapment and that surface water is not available for ravens.

The record demonstrates that each of the proposed Conditions of Certification (COCs) or mitigation measures will ensure that impacts to sensitive biological resources are minimized or avoided to the extent possible based on the construction and operation of the Willow Rock project. Some Conditions of Certification require pre-construction surveys, the implementation of non-disturbance buffers, the relocation of Joshua trees, avoidance of nesting birds, and worker training. To reduce impacts to less than significant for some species, Staff has proposed compensatory mitigation to support land preservation. Because of the CEC's regulatory obligation under Title 14, California Code of Regulations, section 783 to comply with CESA requirements to fully mitigate impacts to state-listed species, the Conditions of Certification were developed in close cooperation with CDFW.³⁸

1. Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified

³⁵ Ex. 2000, FSA, pp. 5.2-142—5.2-143.

³⁶ Ex. 2000, FSA, p. 5.2-143.

³⁷ Ex. 2000, FSA, pp. 5.2-144—5.2-145.

³⁸ Ex. 2000, FSA, p. 5.2-145.

in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

A. Riparian Habitat

The record establishes that the project area does not support any riparian habitat.³⁹

B. Sensitive Natural Communities

There is one sensitive natural community identified by CDFW – Joshua tree woodland – occurring along the northern portion of Options 2a and 2b of the alternative gen-tie alignments west of the Willow Rock site.⁴⁰ If either of these optional sections of the gen-tie alignment is constructed, there will likely be permanent impacts to approximately 0.5 to 2.0 acres of Joshua tree woodland from pole foundation placement and any new access roads, and temporary impacts from pole construction sites and possibly pull and tensioning sites.⁴¹

It is disputed whether any Joshua tree woodland exists on the Willow Rock Energy Storage Center site itself. Staff initially indicated that there are “locations within the project area, especially within and around the [Willow Rock] site, P1, P2 North, and P2 South, that exhibit characteristics that may meet the CNPS definition of Joshua tree woodland.”⁴² Applicant mapped these same areas as other vegetation communities, but declined to identify them as Joshua tree woodland based on the “estimated canopy coverage in the WRESC, P1, and P2 sites as less than 1% western Joshua tree.” Applicant maintains that because the density of identified western Joshua tree individuals does not achieve the 1% threshold set by the California Native Plant Society (CNPS), nor has the community been mapped by CDFW in its Vegetation Classification and Mapping Program, this project area should not be identified as having Joshua tree woodland.⁴³

Without elaboration, Staff states in its rebuttal testimony that it “concurs with the applicant that the density of the trees does not constitute a Joshua Tree Woodland.”⁴⁴

Intervenor Center for Biological Diversity (the Center) presented written and oral testimony stating that the Applicant and Staff failed to adequately identify and evaluate the presence of western Joshua tree woodlands, acknowledging that Staff did identify Joshua tree woodland along the optional gen-tie routes and the possibility of Joshua tree in the Willow Rock site

³⁹ Ex. 2000, FSA, p. 5.2-148.

⁴⁰ Ex. 2000, FSA, p. 5.2-148. See also Ex. 1234, pp. 2-3.

⁴¹ 8/21/2025 Evidentiary Hearing RT 109:12-18.

⁴² Ex. 2000, FSA, p. 5.2-148.

⁴³ Ex. 1233, pp. 32, and 37; Ex. 1234, pp. 2-4.

⁴⁴ Ex. 2001, p. 1.

based on vegetation characteristics.⁴⁵ In rebuttal, the Center further testified that the Applicant's estimate of <1% of canopy cover was misapplied, stating that the CNPS definition "is intended to identify localized woodland stands, not site-wide averages."⁴⁶ The Center argues that the Applicant's estimate is not quantified, and further argues that the clustered formations that typify the heterogenous distribution of western Joshua tree require more ecologically meaningful identification of woodlands using an "ecologically appropriate scale" including "discrete stands" instead of a site-wide average. Lastly, the Center states that the fact that a site has not yet been mapped by CDFW does not preclude the existence of woodland.⁴⁷

At the Evidentiary Hearing, the Center's expert witness described a methodology to evaluate localized tree density at an ecologically appropriate scale.⁴⁸ The Applicant didn't dispute the Center's contention that woodlands identification required something more than a site-wide average. Under cross-examination, the Applicant's expert witness conceded that the 10-acre scale base maps that it used to identify Joshua tree woodland does not always capture smaller Joshua tree clusters and described its field approach to "veg mapping" at a tenth of an acre to identify clusters of Joshua trees. The expert stated that the largest cluster found under this approach was 0.6 percent canopy, but they did not have a record of the size of the polygon related to that estimate, because they only intended to map polygons of 1% or greater.⁴⁹

Although CDFW provided comments at the Evidentiary Hearing on many aspects of the project's impacts on Biological Resources and stated that the quality of project site included "nice mature creosote scrub, allscale scrub, obviously Joshua tree woodland,"⁵⁰ CDFW did not comment on the appropriate methodology for identifying the presence of Joshua tree woodland on the Willow Rock site.

Staff's expert provided oral testimony at the Evidentiary Hearing to clarify its position on the presence of Joshua tree woodland on the Willow Rock site. Staff agreed that impacts to Joshua tree woodland must be mitigated, and pointed to its revised proposed Condition of Certification **BIO-14** to ensure that impacts to Joshua tree woodland will be appropriately mitigated. The Center affirmed its support for the revised **BIO-14**.⁵¹

We note that Staff's revision to proposed **BIO-14** will expressly apply the requirement for Joshua tree woodland mitigation to those impacts that might occur along the optional gen-tie route. As discussed at the Evidentiary Hearing, both CDFW and Staff acknowledged that the

⁴⁵ Ex. 4000, pp. 2-4.

⁴⁶ Ex. 4001, p. 2.

⁴⁷ Ex. 4001, pp. 2-4; 8/21/2025 Evidentiary Hearing RT pp. 109:2—111:18.

⁴⁸ 8/21/2025 Evidentiary Hearing RT pp. 109:2 – 111: 18.

⁴⁹ 8/21/2025 Evidentiary Hearing RT pp. 164:14 – 166:19 (citing Exhibit 1043).

⁵⁰ 8/21/2025 Evidentiary Hearing RT p. 133:21-22.

⁵¹ 8/21/2025 Evidentiary Hearing RT p. 111:19-21.

California Fish and Game Commission had adopted the final Western Joshua Tree Conservation Plan just six days previously, and that Staff intended the originally proposed Conditions of Certification to ensure that the Applicant's avoidance, minimization, mitigation measures for western Joshua tree to be consistent with any updated agency guidance based on that plan.⁵² Additionally, as discussed below, the Applicant will be required under Condition of Certification **BIO-12** to update its Western Joshua Tree Census prior to site mobilization or ground-disturbing activities to account for any newly identified or previously unmapped trees, and provide that updated census to CDFW for review and comment. Should the project owner or CPM, based on the updated surveys or natural community mapping, identify any Joshua tree woodlands on the Willow Rock site, it will be important for any impacts to those natural communities to be appropriately mitigated under **BIO-14**. Therefore, we have modified the language of both **BIO-12** and **BIO-14** to ensure that any woodlands identified based on updated surveys or natural community mapping receive appropriate mitigation, should they be impacted by the Willow Rock project. We have also modified the proposed language of **BIO-1** to ensure that for work related to the western Joshua tree, the Designated Biologist demonstrates knowledge and experience related to the western Joshua tree and its woodlands.

i. Construction impacts

In addition to potential impacts to western Joshua tree woodland, additional native vegetation communities are dispersed throughout the project area and will be subject to impacts from construction of permanent features, including the Willow Rock site, access roads, and pole foundations, and temporary development of the site construction laydown and parking areas (P1, P2 North, P2 South, and Villa Haines), pole construction sites, pull and tensioning sites, and underground trenching. Direct impacts to Joshua tree woodland and other native vegetation communities within the project area will include the permanent and temporary loss of habitat, the loss or disruption of native seedbanks, or alterations to local drainage patterns that result in offsite runoff and increased erosion and sedimentation to adjacent habitats. Indirect impacts to native vegetation and Joshua tree woodland will include long-term type conversion of desert habitats, long-term alterations to hydrology, and degradation of habitat from non-native invasive weeds.⁵³

The overall construction schedule will last approximately 5 years. The Conditions of Certification will require a Vegetation Management Plan (VMP) including the stabilization and restoration of areas that are temporarily disturbed during construction for certain native species and other plant species (**BIO-8**). While restoration efforts of early successional communities will be expected to facilitate the eventual reestablishment of total perennial cover (to amounts consistent with undisturbed areas), this would still be anticipated to take several

⁵² 8/21/2025 Evidentiary Hearing RT p. 168:4 – 170:7. See also Ex. 2000, FSA, pp. 5.2-157 and 5.2-290 (BIO-12(1)(e)).

⁵³ Ex. 2000, FSA, pp. 5.2-148 – 150.

years to decades. The Conditions of Certification also require an Invasive Weed Management Plan (IWMP) (**BIO-9**) and Invasive Species Management Plan (ISMP) (**BIO-10**).⁵⁴

With these and the other Conditions of Certification for biological resources, the evidence shows that any substantial adverse impacts to sensitive natural communities during construction will be lessened below a level of significant with the implementation of all required mitigation.

ii. Operation

Direct and indirect impacts to Joshua tree woodland and other native vegetation communities would be similar in type but greatly reduced in magnitude compared to those discussed for construction. Vegetation removal and grading activities will be completed during the construction phase of the project. During operation, all activities will be conducted in previously developed areas within the Willow Rock site or along existing access roads. Therefore, direct impacts to western Joshua tree woodland and other native vegetation communities from the loss of habitat and loss or disruption of native seed banks would not occur as a result of implementing operation activities.

Indirect impacts could occur if non-native invasive weeds are introduced or become established from operational activities. The implementation of the same Conditions of Certification for the project discussed above will reduce operational impacts to western Joshua tree woodland and other native vegetation communities to less than significant.

2. Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

A. Special-Status Plants (other than western Joshua tree)

Except for western Joshua trees, no other federally- or state-listed plant species are likely to occur within or adjacent to the project area. Three non-listed special-status plant species were observed by the Applicant during focused surveys for rare plants in 2023 and 2024, including *alkali mariposa lily*, *sagebrush loeflingia*, and *Mojave monardella*.⁵⁵

Direct and indirect impacts to special-status plants will closely resemble those discussed above for native vegetation communities. Direct impacts to special-status plants will include the removal or destruction of individuals or small populations, loss of habitat, destruction or

⁵⁴ Ex. 2000, FSA, p. 5.2-150.

⁵⁵ Ex. 2000, FSA, p. 5.2-152.

disturbance of seedbanks, and exposure to increased erosion and sedimentation, excessive fugitive dust, and hazardous materials. Indirect impacts include the degradation of habitat from long-term type conversion and alterations to local hydrology, including the promotion of suitable conditions for non-native invasive weeds to outcompete and displace special-status plants and other native species.⁵⁶

Staff determined that loss of more than ten percent of the known individuals within an occurrence would be a significant impact in this case because it could reduce the occurrence size and seed production below a critical threshold. The proposed Conditions of Certification include specific measures to reduce and mitigate impacts to special-status plants, including focused pre-construction surveys, collection of seed or transplanting of plants, and avoidance buffers (**BIO-11**) (Special-Status Plant Avoidance Measures). Additionally, the implementation of **BIO-1** (Designated Biologist Selection), **BIO-2** (Designated Biologist Duties), **BIO-3** (Designated Monitor Selection), **BIO-4** (Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Management Plan), and **BIO-9** (Integrated Weed Management Plan) will ensure biological monitoring during construction, worker training to provide information on special-status plants occurring in the project area, general construction best management practices (BMPs) to avoid sensitive biological resources, habitat restoration, and conditions to minimize the introduction and spread of non-native invasive weeds.

Impacts from offsite erosion and sedimentation would be reduced through the implementation of **WATER-2** (Construction Erosion and Sedimentation Plan Operations Drainage, Erosion and Sedimentation Plan) to ensure that construction and operations on site will not result in substantial stormwater runoff. Impacts from fugitive dust will be mitigated by implementation of **AQ-SC3** and **AQ-SC4**.

Therefore, the record establishes that any direct or indirect impacts to special-status plants during construction and operation will be less than significant.

B. Western Joshua tree

During the 2024 verification census conducted by the Applicant, 3,970 western Joshua trees, which are designated as a candidate species for listing under the CESA, were recorded in the survey. Not all the trees within the survey area will be impacted by implementation of the project. Additionally, **BIO-12** requires an updated Western Joshua Tree Census prior to any site mobilization or ground disturbing activities within 50 feet of any western Joshua tree.⁵⁷

Since the western Joshua tree is a candidate for listing under CESA, any permanent removal or relocation of a western Joshua tree would be considered significant. California Fish and Game

⁵⁶ Ex. 2000, FSA, p. 5.2-153.

⁵⁷ Ex. 2000, FSA, p. 5.2-155.

Code section 1927.3 implements the WJTCA which authorizes take of western Joshua trees if certain requirements set forth in the statute are met. Conditions of certification are included to comport with the requirements of section 1927.3 including reasonable measures required by CDFW to facilitate the successful relocation and survival of salvage trees.⁵⁸ The Applicant will be required to develop a relocation plan based on the expected rate of relocation success for the method used, as well as the size class of each tree proposed for relocation (**BIO-12**).⁵⁹

i. Construction

Construction of the Willow Rock Energy Storage Center will require avoidance, permanent removal, and/or relocation of western Joshua trees. Direct impacts to the western Joshua tree will occur from permanent removal or relocation of individual trees. Based on the current census, under Option 1 – Without Berm, the applicant has determined that 1,158 western Joshua trees would require permanent removal, and 249 trees would be relocated. Under Option 2 - With Berm, the applicant has identified 1,625 trees for permanent removal and 266 for relocation.

In addition to implementing the Western Joshua Tree Relocation Plan, **BIO-12** will require the Applicant to deposit in lieu fees in the Western Joshua Tree Conservation Fund prior to the issuance of take authorization pursuant to Fish and Game Code, section 1927.3(d), which have been estimated for both the Without Berm and With Berm project options.⁶⁰

The Center for Biological Diversity argues that that the Conditions of Certification are insufficient, and that the complete updated census of the western Joshua tree and payment of applicable mitigation fees is required before the CEC can certify the Willow Rock Energy Storage Center.⁶¹ The Center interprets Fish and Game Code, section 1927.3 as mandating that a complete census be conducted before the CEC's final decision to ensure that decisionmakers have site-wide information about the number and location of western Joshua trees before authorizing irreversible impacts. The record establishes that the Applicant surveyed the Willow Rock site including P1 North, P1 South, Villa Haines, and most of the gen-tie routes. However, it was not able to survey certain parcels in or buffered along certain optional gen-tie routes due to the lack of access to the parcels.⁶²

To be clear, the CEC's certification of the Willow Rock Energy Storage Center will make take authorization for WJT expressly contingent upon the approval by the Compliance Project Manager (CPM) of the updated Western Joshua Tree Census and final Western Joshua Tree Relocation Plan. Because right of entry onto these restricted parcels is practically not feasible

⁵⁸ Ex. 2000, FSA, p. 5.2-155.

⁵⁹ Ex. 2000, FSA, pp. 5.2-155—5.2-156.

⁶⁰ Ex. 2000, FSA, pp. 5.2-156—5.2-157.

⁶¹ See Intervenor Center for Biological Diversity's Post-Evidentiary Hearing Opening Brief (TN 265921).

⁶² 8/21/2025 Evidentiary Hearing RT pp.144:6-25, 45:23-25, and 147:1-7; Ex. 1234, p. 5.

until after project approval, and also to account for the passage of time since the Applicant's WJT census last conducted in 2024, **BIO-12** requires that, before any site mobilization, ground disturbance, or take of WJT is authorized by the CPM, the Applicant must update its WJT census of the entire Willow Rock site and gen-tie routes for review and comment by the CDFW and approval by the CPM. Additionally, the Applicant's responsibility to mitigate impacts to WJT and provide in-lieu fees will depend on the final number of trees and class sizes that the CPM authorizes for take – based on the updated census and the Applicant's final plans for construction and operation activities on the Willow Rock site and final gen-tie route. If the Applicant can avoid any individual trees, the total mitigation requirement will be adjusted accordingly. Lastly, "no impacts to WJT shall be authorized until confirmation by CDFW that the mitigation fee has been received from the project owner" (**BIO-12**).

It is consistent with the CEC's "in-lieu" exclusive jurisdiction under Public Resources Code section 25500 and its certified regulatory program to certify thermal power plants and related facilities with Conditions of Certifications that make the authorization for specific activities related to the construction and operation of the project expressly contingent on conditions precedent subject to the approval of the CEC's Compliance Project Manager. Nothing in Fish & Game section 1927.3 prohibits the CEC from certifying the Willow Rock Energy Storage Center in a manner that makes the CPM's approval of the take authorization for WJT expressly contingent on the Applicant's further demonstration of compliance with the specific requirements of the WJTCA.

The record includes substantial evidence that the Conditions of Certification include measures to fully mitigate impacts from construction to the western Joshua tree under the requirements of the WJTCA.

ii. Operation

Impacts to western Joshua trees plants from the operation of the facility will be greatly reduced in magnitude compared to those discussed for construction. The developed project area will not support suitable habitat for this species. For the western Joshua trees that will continue to exist in habitats adjacent to the Willow Rock site or along the gen-tie alignment, impacts may occur from exposure to increased erosion and sedimentation, fugitive dust, and hazardous materials from workers at the Willow Rock site, driving access roads, and performing maintenance activities along the gen-tie alignment. Similarly, non-native invasive weeds could be introduced into adjacent habitats from vehicles and equipment during operations.⁶³

The record demonstrates that the implementation of the same Conditions of Certifications discussed above for special status plants will reduce impacts during operation to less than significant and comport with the WJTCA.

⁶³ Ex. 2000, FSA, p. 5.2-158.

C. Special Status Wildlife

Habitat in the project area has the potential to support a variety of federally and state-listed, candidate for listing, proposed for listing, state fully protected wildlife species, species of special concern, CDFW Special Animals (SA), watch list (WL) and USFWS Birds of Conservation Concern (BCC). Impacts to special-status wildlife will vary depending on the habitats utilized by these species and the types of work activities conducted at occupied locations. These could include injury or mortality of individuals, loss or degradation of habitat, impediments to movement, disturbance to breeding and foraging behavior, and exposure to herbicides or other hazardous materials. Indirect impacts could include the degradation of habitat from invasive and noxious weeds. Wildlife species that occur in the larger Willow Rock site will be more adversely affected than those that are present along more disturbed portions of the gen-tie line or along the well-travelled access roads such as Rosamond Boulevard.⁶⁴

The record demonstrates that the implementation of Biological Resources Conditions of Certification will reduce any construction or operational project related impacts on special status wildlife including: **BIO-1** (Designated Biologist Selection), **BIO-2** (Designated Biologist Duties), **BIO-3** (Designated Monitor Selection), **BIO-4** (Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Management Plan), **BIO-9** (Integrated Weed Management Plan), **BIO-10** (Invasive Species Management Plan), **BIO-15** (Special-Status Plant Avoidance Measures), **BIO-17** (Nesting Bird Avoidance and Minimization Measures), and **BIO-22** (Small Mammal Avoidance Measures and Minimization Measures). Additionally, Condition of Certification **NOISE-6** will minimize impacts from noise and vibration due to controlled detonations by limiting those activities to daylight hours.⁶⁵

D. Crotch's bumble bee

Crotch's bumble bee (*Bombus crotchii*) is a candidate for listing under CESA. Thirty-five Crotch's bumble bee workers were recorded during the protocol surveys and incidentally during other surveys conducted by the Applicant. Seven Crotch's bumble bee queens were also observed foraging in patches of Phacelia. Observations of bees including queens were recorded in P2 North and other locations outside of the Willow Rock site and along the proposed gen-tie line. No bees were recorded on the Willow Rock site but suitable foraging habitat is present. The greatest concentration of bees was detected in the denser patches of Phacelia. No hives were observed, and the Applicant has suggested that suitable overwintering habitat is limited. However, Staff notes that due to the large number of bees identified and the

⁶⁴ Ex. 2000, FSA, p. 5.2-163.

⁶⁵ Ex. 2000, FSA, pp. 5.2-158 – 5.2-164.

presence of small mammal burrows, downed Joshua trees, and other material, nesting and or overwintering sites could be present on the Willow Rock site and other project components.⁶⁶

Direct impacts to Crotch's bumble bee will include the loss or modification of foraging and possibly nesting habitat, the disturbance or destruction of occupied nesting sites, and exposure of individuals and/or nesting sites to fugitive dust, ground vibration from controlled detonations, herbicides, and other hazardous materials. Indirect impacts to western bumble bees could include habitat fragmentation and the loss or degradation of habitat from invasive weeds. The loss of bees and occupied foraging habitat will be considered a significant impact without mitigation. As a candidate for listing, the loss of bees will be considered a take under CESA and will require full mitigation.

The primary nectar source for Crotch's bumble bee documented in the project site are patches of tansy-leafed phacelia (*Phacelia tanacetifolia*). The Applicant identified suitable foraging habitat is predominantly located in P2 North and South and along the gen-tie line, with some occurrence in the southwestern corner and central part of the Willow Rock site.⁶⁷

The most likely impact to these species from construction of the project would be the destruction of nest sites should they occur within suitable habitat. Although nest sites were not detected during the protocol surveys, nests are difficult to find and may have been overlooked. Construction of the project could result in habitat fragmentation. Exposure to herbicides or other hazardous materials could result in the degradation of foraging habitat or the loss of individual bees or active nesting colonies. In the Mojave Desert, weeds including non-native grasses and Sahara mustards can displace the bee's preferred foraging habitat.⁶⁸

Construction of the proposed project will remove currently utilized foraging habitat and has the potential to result in the direct loss of individual bees or colonies. Direct and indirect impacts that degrade habitat or result in the loss of Crotch's bumble bee would be considered a significant impact under CEQA. Because of this species' status as a state candidate for listing, project related impacts will also require compliance with CESA standards including measures to fully offset impacts on the species.

The Condition of Certification **BIO-13** for Crotch's bumble bee will require the Applicant to submit to the CPM and CDFW a Crotch's Bumble Bee Mortality Reduction and Relocation Plan before beginning any site mobilization or ground disturbing activities. The plan shall be based on pre-construction surveys and monitoring for Crotch's bumble bee conducted by a qualified entomologist(s) or biologist(s) familiar with the life history and ecology of Crotch's bumble bee. Additional overwintering and active colony period season surveys will be required. Applicant's proposals for worker training, delineating sensitive habitat areas, and

⁶⁶ Ex. 2000, FSA, pp. 5.2-164—5.2-165 (citing the Applicant's incidental take application (Exhibit 1149)).

⁶⁷ Ex. 1149, p. 8 and Figure 2.

⁶⁸ Ex. 2000, p. 5.2-165—5.2-167.

implementation of non-disturbance buffers are incorporated. Together with the other Conditions of Certification discussed above for Special Status Wildlife, implementation of **BIO-13** will provide additional avoidance measures to reduce the direct and indirect impacts to Crotch's bumble bee to less than significant under CEQA.

Additionally, take authorization under CESA will be expressly conditioned on the Applicant's implementation of the Habitat Management Land Acquisition Condition of Certification **BIO-14** through the acquisition of 843 acres of Crotch's bumble bee and western burrowing owl mitigation or conservation bank credits, at a location approved in advance by the CPM, in coordination with CDFW, or shall provide for both the permanent protection and management of 843 acres of Habitat Management (HM) lands and the deposit of management funds into an endowment.

The Applicant requested that clarity be provided throughout the Conditions of Certification to ensure that the final accounting of the acres of mitigation lands or conservation credits be based on the project's final direct permanent and temporary loss of habitat.⁶⁹ We concur. At the Evidentiary Hearing, there was consensus among the Parties that Table 2.3 in Applicant's Opening Testimony provided accurate numbers for the acreage that will be permanently and temporarily disturbed under the Without Berm and With Berm options.⁷⁰ Additionally, we note that the amount of mitigation must be calculated, and the purchase of mitigation or conservation bank credits or Habitat Management lands must be complete *before* starting project activities. Therefore, the number of mitigation acres or conservation credits currently provided in the Conditions of Certification is based on the estimated permanent and temporary impacts known at the time of this Decision. If, prior to site mobilization and ground disturbance, the Applicant has demonstrated that it will avoid impacts to certain habitat currently included in those acreages, it may, pursuant to **BIO-6**, adjust the final mitigation commitment accordingly. And similarly, that final calculation may rise if based on preconstruction surveys, the permanent and temporary impacts exceed what is currently provided in Table 2.3.

The evidentiary proceeding includes considerable argument, evidence, testimony, and agency comment on the mitigation ratio appropriate for the permanent and temporary impacts to Crotch's bumble bee and burrowing owl.

Staff is proposing a 3:1 ratio for all permanent and temporary impacts. The rationale for the ratio is that both Crotch's bumble bee and burrowing owl require full mitigation under CESA, which is a higher standard than reducing significant impacts under CEQA.⁷¹ Multiple factors supported Staff's development of the 3:1 ratio for Crotch's bumble bee, including: the number of bees detected near and using the project site; the difficulty in detecting Crotch's bumble

⁶⁹ Applicant's Opening Brief, p.1 (TN 265918).

⁷⁰ Ex. 1233, p. 33, Table 2.3; 8/21/2025 Evidentiary Hearing RT pp. 118:24 – 120:5.

⁷¹ Ex. 2000, FSA, pp. 5.2-239 – 5.2-240.

bee nests together with the known use by the bees to make nests in cavities in western Joshua trees and other mammal burrows; and the characteristics of virtually all of the Willow Rock site that support suitable habitat for nesting or foraging bees.⁷²

Additionally, even though some impacts are characterized in the FSA and the Applicant's testimony as "temporary," Staff testified that impacts to these fully listed species and their habitat must consider that the five-year timeline for construction may render those acreages and associated habitat unsuitable for or resistant to revegetation and repopulation after construction ends.⁷³ Staff testified that restoration in the arid desert environment after such extensive disturbance is extremely slow and may take decades.⁷⁴ "Grading and other disturbances often lead to permanent ecological shifts in habitat use by the species that were once there."⁷⁵ Staff concluded, based on consultation with CDFW, that applying the 3:1 mitigation ratio for acreage impacted by construction activities accounts for the uncertainty and risk that may arise from unsuccessful revegetation and will ensure the replacement of the ecological functions critical to the persistence and survival of the listed species.⁷⁶

Experts from CDFW concurred with Staff's mitigation ratio and application of the same ratio to both permanent and temporary impacts.⁷⁷

The Applicant and County of Kern expressed concern with the 3:1 mitigation ratio, pointing to other renewable energy projects in the region with lower mitigation requirements. The County emphasized that the 3:1 ratio is inappropriate for impacts from project activity associated with construction of the gen-tie transmission lines in the road rights-of-way which have no habitat.⁷⁸ Provided this observation, Staff concurs that certain portions of the road right-of-way does not warrant habitat mitigation for impacts to Crotch's bumble bee and western burrowing owl.⁷⁹

The Applicant argues that the 3:1 mitigation ratio is not commensurate with mitigation ratios for Crotch's bumble bee and burrowing owl documented in environmental impact reports prepared for projects in Kern County.⁸⁰ However, it is unclear whether these other projects were evaluated under the California Environmental Quality Act (CEQA) thresholds of significance, or the higher CESA requirement for full mitigation that is now applicable to both species given recent status updates as candidates for listing. Additionally, as summarized

⁷² 8/21/2025 Evidentiary Hearing RT p. 103:5 – 25.

⁷³ 8/21/2025 Evidentiary Hearing RT pp. 99:10 – 101:18.

⁷⁴ Ex. 2000, FSA, p. 5.2-150.

⁷⁵ 8/21/2025 Evidentiary Hearing RT p. 101:20-22.

⁷⁶ Ex. 2000, FSA, pp. 5.2-239 – 5.2-240.

⁷⁷ 8/21/2025 Evidentiary Hearing RT pp. 121:4 – 123:21.

⁷⁸ 8/21/2025 Evidentiary Hearing RT p. 174:3-18.

⁷⁹ Staff Opening Brief, p. 3 (TN 265879).

⁸⁰ Ex. 1233, pp. 40—43.

above, testimony from Staff and comments from experts at CDFW were compelling about the fact-specific analysis to determine permanent versus temporary impacts and the consideration of the risks and costs associated with revegetation, habitat loss, or fragmentation unique to the Willow Rock project given the construction timeline, the nature of the impacts, and the need to preserve ecological functions critical to the survival of the species.

Lastly, to ensure that the project owner's total mitigation responsibility for acres temporarily impacted does not exceed what is required for the acres permanently impacted, Staff has revised its proposed Condition of Certification **BIO-8** to only require stabilization of temporarily disturbed areas, such as management of weeds, rather than seeking full restoration to pre-disturbance levels.⁸¹

Thus, the testimony, expert concurrence from CDFW, and the evidence support Staff's proposal to require a 3:1 mitigation ratio for both permanent and temporary impacts to satisfy both CESA and CEQA for this specific project. Additionally, the record contains substantial evidence that with the implementation of all of the biological resources Conditions of Certification and **NOISE-6**, the impacts on Crotch's bumble bee from the Willow Rock Energy Storage Center will be less than significant.

E. Burrowing Owl

The western burrowing owl or burrowing owl is a state candidate for listing under CESA. It is also protected under the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code. Threats to burrowing owl include habitat loss, predation, roadkill, reduced burrow availability due to rodent control, and pesticides. Suitable habitat is present throughout the project area. No burrowing owls were observed within the project site during the 2023 and 2024 protocol-level surveys conducted by the Applicant. However, one pair was observed 500 feet north of the P2 North area in 2024. Three individual owls were also incidentally observed in the general region of the project site in 2023. In addition, 40 unoccupied suitable burrows (29 in 2023 and 11 in 2024) were identified within or adjacent to the project site. Because birds have been observed in the project area and suitable burrows are present it is assumed that western burrowing owl could nest and forage within and adjacent to the Willow Rock project site and along portions of the gen-tie line, and the Applicant has asked for take coverage for the project.⁸²

Construction of the project will result in approximately 88.8 acres of permanent and 122.2 acres of temporary impacts to native and non-native vegetation communities and other landforms throughout the project area under Option 1 – Without Berm and approximately

⁸¹ 8/21/2025 Evidentiary Hearing RT p. 102:2-11. See also **BIO-8**: "Successful establishment of native desert scrub communities is not required, since temporary impacts are being considered as permanent to offset impacts to listed species, and revegetation efforts shall include an initial seeding event followed by weed management"

⁸² Ex. 2000, FSA, p. 5.2-182.

163.5 acres of permanent and 117.3 acres of temporary impacts would occur under Option 2 - With Berm. The loss of foraging habitat for burrowing owls will be considered a significant impact and warrant compensatory mitigation to replace lost habitat.⁸³

Staff testified that it assumes that all the natural habitat communities on the project site that will be permanently removed will require mitigation. In addition, mitigation will also be required for the temporary loss of habitat in staging, laydown, and parking areas that will be lost for a period of five years and take many years to functionally recover post restoration. In consultation with CDFW, Staff is proposing a 3:1 mitigation ratio for all permanent and temporary impacts to burrowing owl due to the long duration temporal loss of habitat functions in temporarily disturbed native vegetation communities and grasslands. In addition, this mitigation will offset impacts to owls that may abandon habitat in adjacent areas due to noise and ground borne vibration from the controlled detonations during the construction and excavation of the cavern.⁸⁴

If present, impacts to burrowing owl habitat or direct impacts to burrowing owls or their nests could be significant without mitigation. Any action that results in direct impacts to burrowing owl that causes harm will constitute take under CESA. To reduce these impacts, **BIO-19** (Burrowing Owl Avoidance, Minimization, and Take Measures) will include specific survey, monitoring, and relocation methods. Passive relocation, if necessary, would be limited to the non-breeding season.

Additionally, **BIO-14** (Habitat Management Land Acquisition for Crotch's Bumble Bee and Burrowing Owl) requires the project owner to obtain mitigation lands to fully mitigate and replace habitat lost from the development of the project. Applying a 3:1 mitigation ratio for both permanent and temporary impacts to burrowing owl habitat follows the same reasoning and evidence as discussed above for Crotch's bumble bee. Similarly, requiring a 3:1 ratio is supported by the record demonstrating the species' recent listing as candidate for protection under CESA, the suitability of most of the Willow Rock site for foraging and breeding habitat for the burrowing owl, the exposure to noise and ground borne vibration from controlled detonations, and risk of harm or mortality that may arise during the lengthy construction period from vehicle collisions, fugitive dust, and the release of hazardous materials.⁸⁵

To further reduce significant impacts on burrowing owl, the Conditions of Certification include **BIO-1** (Designated Biologist Selection), **BIO-2** (Designated Biologist Duties), **BIO-3** (Designated Monitor Selection), **BIO-4** (Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Management Plan), and **BIO-9** (Integrated Weed Management

⁸³ Ex. 2000, FSA, p. 5.2-182.

⁸⁴ Ex. 2000, FSA, pp. 5.2-182—5.2-183.

⁸⁵ Ex. 2000, FSA, p. 5.2-183.

Plan). Impacts from fugitive dust will be mitigated by implementation of **AQ-SC3** and **AQ-SC4**, which include watering roads and/or stabilizing them with soil binders and will require a qualified dust monitor.

Lastly, during operation of the Willow Rock Energy Storage Center, direct and indirect impacts will be substantially reduced relative to initial construction activities. However, impacts from the risk of collision and electrocution with the transmission lines would be less than significant with the implementation of **BIO-18** (Collision Avoidance and Minimization Measures) which will require the placement of visual markers to alert birds of the presence of the shield wire. As a known local resident of the project area, this measure will reduce collision risk for the burrowing owl.

The record contains substantial evidence that, with the implementation of these Conditions of Certification, direct and indirect impacts that degrade habitat or result in the loss of burrowing owl will be reduced to less than significant under CEQA and will fully mitigate any take of burrowing owl under CESA.

F. Other Special Status Birds

i. Swainson's hawk

Swainson's hawk is a state-listed threatened species under CESA. Based on the current distribution of Swainson's hawks in the project area it is likely that construction impacts to this species will not occur with the implementation of pre-construction surveys and monitoring. Direct impacts to Swainson's hawk, if present, could include disruption of nesting due to increased dust, noise, vibration, disturbance, and exposure to hazardous materials. Indirect impacts include the degradation of habitat due to the introduction and spread of invasive weeds and increased human presence. The permanent loss of foraging habitat (i.e., productive habitat for prey species such as small mammals and insects) will be considered a significant impact.

To reduce construction impacts from habitat loss, **BIO-14** (Habitat Management Land Acquisition for Crotch's Bumble Bee and Western Burrowing Owl) will require the project owner to obtain mitigation lands to replace habitat lost from the development of the project. To avoid impacts to nesting Swainson's hawk the project owner will implement **BIO-20** (Swainson's Hawk Avoidance and Minimization Measures) to identify and monitor nests within 0.5 miles of development areas including the gen-tie line. No work will be authorized within these buffers unless compelling biological data suggests a smaller buffer could be implemented. During operations, because of the limited numbers of Swainson's hawks in the region, any loss or potential impact due to the transmission line will be considered significant. To reduce the risk of collision, **BIO-18** (Collision Avoidance and Minimization Measures) will reduce impacts to this species to a less than significant level and ensure compliance with CESA.

ii. Le Conte's thrasher and Loggerhead shrike

Loggerhead shrike is a CDFW species of special concern. Le Conte's thrasher is designated as a USFWS bird of conservation concern and a CDFW species of special concern. Loggerhead shrike and LeConte's thrasher are known to occur in the project area and are likely nesters in scrub communities present at the Willow Rock site and along portions of the linear facilities. Direct and indirect impacts to these species will be the same as described for other birds. Construction of the proposed project will result in the loss of foraging habitat and could disrupt breeding or access to cache sites. However, most of the region supports ample habitat in adjacent areas and it is likely that the birds would move to adjacent habitat during construction. That said, any project related impact that results in the loss of nesting habitat, disturbance of breeding behavior, destruction of nests or eggs, disruption of cache sites, exposure to herbicides or other hazardous materials, and mortality or injury to individual birds would be considered a significant impact.

To reduce construction impacts to nesting birds, **BIO-17** (Nesting Bird Avoidance and Minimization Measures) will require pre-construction surveys for nesting birds and the establishment of non-disturbance buffers to avoid disturbing active nests and cache sites. This measure also requires the development of a Nesting Bird Management Plan that contains the types of birds that have the potential to nest in the project area, where they likely nest, prescriptive language on who is qualified to conduct nesting bird surveys and monitor active nests, the methodology of the surveys, when surveys would be required, and the frequency they must be repeated. Acquisition of mitigation lands for lost habitat under **BIO-14**, and other Conditions of Certification for biological resources including **BIO-1** through **BIO-4** (Designated Biologist Selection and Qualifications, Designated Biologists Duties, Biological Monitor Selection, and Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program [WEAP]), **BIO-7** (General Impact and Avoidance Measures), **BIO-8** (Vegetation Management Plan), and **BIO-9** (Integrated Weed Management Plan) will reduce any impacts these birds to less than significant. To reduce the risk of collision with transmission lines, **BIO-18** (Collision Avoidance and Minimization Measures) will reduce operations impacts to these species to a less than significant level.⁸⁶

iii. California Condor, Bald or Golden Eagle, Tricolored Blackbird, Short-eared Owl, Long-eared Owl, Mountain Plover, Prairie Falcon, and Northern Harrier

The California condor has not been documented in the project area but may soar over portions of the project site or gen-tie alignment. The greatest risk for condors is associated with the potential for ingestion of objects such as microtrash (i.e. broken glass, hardware, plastic waste, bottle caps, small pieces of metal) or substances such as ethylene glycol antifreeze.

⁸⁶ Ex. 2000, FSA, pp. 5.21-188—5.2-189.

Bald eagle is state-listed as endangered and are only expected to occur in the project area as a transient bird and impacts are not expected to occur. Golden eagles are state fully protected and are known to forage across the Mojave Desert. Golden eagle was not observed or detected during any of the 2023 and 2024 surveys conducted by the Applicant.

Tricolored blackbirds are listed as threatened under CESA. This species is also a USFWS bird of conservation concern and a CDFW species of special concern. Tricolored blackbirds were not observed or detected during any of the 2023 and 2024 surveys conducted by the Applicant.

The short-eared owl is a USFWS bird of conservation concern and a CDFW species of special concern. With rare exceptions, the project site is outside of the known breeding range of the species and the project area supports marginally suitable habitat.

The long-eared owl is a USFWS bird of conservation concern and a CDFW species of special concern. Long-eared owls were not observed or detected during any of the 2023 and 2024 surveys conducted by the Applicant.

Northern harrier is a USFWS bird of conservation concern and a CDFW species of special concern. Northern harrier nesting was not identified during any of the 2023 and 2024 surveys conducted by the applicant. However, this species was observed foraging within the gen-tie alignment north of Dawn Road in 2024.

Any project related impact that results in the loss of nesting habitat, disturbance of breeding behavior, destruction of nests or eggs, exposure to herbicides or other hazardous materials, and mortality or injury to any of these birds will be considered a significant impact. Implementation of **BIO-17** (Nesting Bird Avoidance and Minimization Measures) described above, together with the acquisition of mitigation land to replace lost habitat under **BIO-14**, will reduce these impacts to less than significant.⁸⁷

G. Special Status Mammals

A number of special status mammals may occur in the regional setting of the Willow Rock Energy Storage Center, but were not observed or identified during 2023 or 2024 surveys conducted by the Applicant. These include the Tulare grasshopper mouse, the Tehachapi pocket mouse, and the San Joaquin pocket mouse. Any impact on these species will be considered a significant impact if it results in mortality or habitat loss. To reduce impacts to this species, if present, the implementation of **BIO-21** (Small Mammal Avoidance Measures and Relocation Plan) requires monitoring and salvage of any small mammals exposed during construction to a pre-approved location outside of disturbance areas such as the Joshua tree relocation area. Additionally, all of the other biological resources Conditions of Certification discussed above will further reduce any significant impacts. Likewise, **HAZ-1** which requires

⁸⁷ Ex. 2000, FSA, pp. 5.2-189 – 5.2-192.

the preparation of a Spill Prevention Control and Countermeasures Plan (SPCCP) will reduce impacts from exposure to hazardous materials and improper herbicide.⁸⁸

The American badger is a CDFW Species of Special Concern. The desert kit fox is a protected furbearing mammal under California Code of Regulations Title 14, section 460. American badger and desert kit fox was not observed during any of the 2023 and 2024 surveys conducted by the Applicant. However, suitable habitats occur throughout the project site and along the gen-tie line. Desert kit fox scat was also detected within the project site during each year of surveys. Construction of the project could directly affect American badger and desert kit fox and their habitat by the loss and degradation of habitat; disturbance of foraging, dispersal, and breeding activities; mortality due to crushing by foot traffic, vehicles, or heavy equipment; fugitive dust; ground borne vibration from controlled detonations, exposure to hazardous materials; soil compaction that prevents burrowing; and increased noise and disturbance. Any construction or operation activity that results in injury or mortality to these species will be considered a significant impact. The implementation of **BIO-22** (American Badger, Desert Kit Fox, and Ringtail Avoidance and Minimization Measures) which requires conducting pre-construction surveys and establishing non-disturbance buffers for the animals, will reduce impacts to this species. Additionally, all of the other biological resources Conditions of Certification discussed above will further reduce any significant impacts. Likewise, **HAZ-1** will reduce impacts from exposure to hazardous materials and improper herbicide.⁸⁹

The Mohave ground squirrel is listed as threatened under CESA. No Mohave ground squirrels were observed or detected during live- and camera-trapping components of the 2023 and 2024 protocol-level surveys conducted by the applicant. The project site is within the southern portion of the species' historic range where population densities have historically been low since the mid-1990s, although CDFW has confidential records of species occurring closer to the project site. Therefore, while the likelihood of presence is extremely low, Staff asserts it cannot be ruled out. To ensure the protection of Mohave ground squirrel and ensure that unauthorized take does not occur, the project owner will implement **BIO-23** (Mohave Ground Squirrel Avoidance and Minimization Measures), which requires the completion of additional surveys for this species should project activities commence after April 2026. Should a Mohave ground squirrel be found, a non-disturbance buffer will be required, and work will be halted pending coordination with the CPM and CDFW.⁹⁰

3. Would the project have a substantial adverse effect on state- or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

⁸⁸ Ex. 2000, FSA, pp. 5.2-193—5.2-194.

⁸⁹ Ex. 2000, FSA, pp. 5.2-194—5.2-196.

⁹⁰ Ex. 2000, FSA, pp. 5.2-197—5.2-198.

Federal waters are not present, and the area drains to an internally dry lakebed. In addition, recent court rulings have removed ephemeral drainages from federal jurisdiction.

The Applicant documented 25 ephemeral drainage features in the project area that meet the definitions of jurisdiction under Lahontan RWQCB and CDFW regulations and 49 additional ephemeral drainages that were determined by the Applicant to not meet the definitions of Lahontan RWQCB or CDFW jurisdiction. Staff does not concur with the Applicant's determination and, for purposes of the analysis, is treating all drainages as likely jurisdictional. There are no jurisdictional features on the Willow Rock project site. Several small drainages were noted on the Villa Haines parking and laydown area. Most of the drainage features noted by Staff are present along the gen-tie line and consist of small ephemeral washes, swales, and ditches.⁹¹

Direct impacts to state and CDFW waters could include the removal of native vegetation, the discharge of fill, degradation of water quality, and increased erosion and sediment transport. Indirect impacts could include alterations to the existing topographical and hydrological conditions and the introduction of non-native, invasive plant species.⁹²

To reduce these impacts, **BIO-24** (Lake and Streambed Equivalency Conditions) was drafted by Staff in coordination with the CDFW to meet in-lieu permitting requirements. This condition includes measures that are consistent with Administrative, Avoidance and Minimization requirements that are included in a typical CDFW Lake and Streambed permit. These conditions will address the construction of the project. In addition, impacts to jurisdictional features and their associated resources are protected by the Conditions of Certification required to protect biological resources and water quality, including **BIO-1** through **BIO-14**, and **BIO-24**. Implementation of Conditions of Certification **WATER-1**, **WATER-2**, **WATER-5**, **AQ SC3** and **AQ-SC4**, **HAZ-1**, **HAZ-6**, **HAZ-7**, **HAZ-8**, and **WORKER SAFETY-1** will reduce construction and operational impacts to jurisdictional water to less than significant.⁹³

The development and implementation of a Drainage, Erosion, and Sedimentation Control Plan (DESCP) under **WATER-1** will ensure that the development of the site will not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction and operations.⁹⁴

4. Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites?

⁹¹ Ex. 2000, FSA, pp. 5.2-201—5.2-202, and Table 5.2-3.

⁹² Ex. 2000, FSA, p. 5.2-202.

⁹³ Ex. 2000, FSA, pp. 5.2-202—5.2-203.

⁹⁴ Ex. 2000, FSA, p. 5.2-203.

The Willow Rock Energy Storage Center impacts on wildlife movement corridors and nursery sites will be less than significant. The project site is on undeveloped lands that are currently confined to the west by State Route 14 and to the east by Sierra Highway and an active railroad. Numerous fences border the highways, and the railroad inhibits the movement of small less motile species to some degree. Existing development associated with the area around Rosamond prevents any regional connectivity between the Tehachapi Mountains to the north and northwest and the San Gabriel Mountains to the south. Construction of the gen-tie line is also not expected to disrupt any important movement corridors. It is unlikely that the existing gen-tie line will pose a barrier to wildlife movement.⁹⁵

5. Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

As currently designed, the proposed project is considered consistent with the applicable goals, policies, and measures of the Kern County General Plan, the Rosamond Specific Plan, and the Willow Rock Specific Plan. Kern County does not have a tree protection ordinance. The Kern County General Plan and the Rosamond and Willow Springs Specific Plans encourage the preservation of open space and habitat for western Joshua tree and other sensitive desert resources, including special-status plants and wildlife.

As discussed above, the project will stabilize temporarily disturbed areas, provide compensatory mitigation for habitat disturbance, and require specific conditions for mitigating impacts to western Joshua tree. For impacts to western Joshua tree that cannot be avoided, take coverage under the WJTCA will be obtained. The project will also comply with Conditions of Certification **BIO-1 through BIO-24**. Therefore, the project will be consistent with the Kern County General Plan and the Rosamond and Willow Springs Specific Plans, and impacts will be less than significant with mitigation.⁹⁶

6. Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Communities Conservation Plan, or other approved local, regional, or state habitat conservation plan?

The Willow Rock Energy Storage Center project area is within the boundaries of two conservation plan areas, including the Desert Renewable Energy Conservation Plan and the West Mojave Plan. At this time, each of these plans is applicable to Bureau of Land Management (BLM) administered public lands within their boundaries. The preferred gen-tie alignment crosses two federally owned parcels managed by BLM. This alignment may be completely contained within an existing road easement associated with Mojave Tropico Road. Nonetheless, the implementation of **LAND-3** (BLM ROW Grant Requirement) will ensure that

⁹⁵ Ex. 2000, FSA, pp. 5.2-203—5.2-204.

⁹⁶ Ex. 2000, FSA, pp. 5.2-204—5.2-205.

the project owner files an Application for Transportation and Utility Systems and Facilities on Federal Lands (SF-299) form prior to construction on any BLM-administered lands. The additional implementation of **BIO-1 through BIO-24** will ensure that impacts are reduced to less than significant.⁹⁷

c. Cumulative Impacts

As small- to large-scale solar energy and development projects and urbanization pressures increase within Kern County, impacts to biological resources in the region are expanding on a cumulative level. As described in **Appendix E** (Master Cumulative Project List), other projects with similar effects on biological resources have been completed, have been approved, or are in the application process for approval in the Antelope Valley. These include 11 energy projects, 12 residential/housing projects, 12 commercial property projects, and 2 mining projects, all within eight miles of the project area.⁹⁸

Cumulatively, the Willow Rock project adds to the direct removal of regional native habitats, general vegetation, and special-status plant and wildlife habitat and individuals. Cumulative indirect impacts are also possible through increased habitat fragmentation and habitat degradation through the introduction of non-native invasive weeds. However, there are several mitigating factors that have been taken into consideration if the loss of this habitat would be considered cumulatively considerable. First, the project area is largely confined between major transportation corridors that reduce the value of this habitat in the broader landscape. Second, the loss of these habitats from project construction will be mitigated through implementation of **BIO-14** (Habitat Management Land Acquisition for Crotch's Bumble Bee and Western Burrowing Owl) which will fully offset these impacts and conserve important habitat in the region. Temporary impacts to scrub communities will be further offset through a combination of land acquisition identified above and the implementation of **BIO-8** (Vegetation Management Plan) which requires the basic stabilization of long-term temporary work and staging areas to control the spread of invasive weeds. Therefore, the project will not contribute to cumulatively considerable impacts from the permanent or temporary conversion of habitat.⁹⁹

To reduce the project's contribution to cumulatively considerable impacts to western Joshua tree, the implementation of **BIO-12** (Western Joshua Tree Avoidance, Minimization, and Mitigation Measures) requires the relocation of an estimated 249 (under Option 1 – Without Berm) and 266 (under Option 2 – With Berm) western Joshua trees along with the applicable mitigation fees required under the WJTCA. In addition, the small number of other sensitive plants that would be potentially impacted by the project would be mitigated through seed

⁹⁷ Ex. 2000, FSA, p. 5.2-205.

⁹⁸ Ex. 2000, FSA, pp. 5.2-205—5.2-206.

⁹⁹ Ex. 2000, FSA, p. 5.2-206.

collection and other measures that would contribute to their preservation in the region. Impacts to special status plants will not be cumulatively considerable.¹⁰⁰

Development of the proposed project will result in the removal of suitable foraging habitat for the Crotch's bumble bee. The Applicant applied for incidental take coverage of this species and **BIO-13** (Crotch's Bumble Bee Avoidance and Minimization Measures) and **BIO-14** (Habitat Management Land Acquisition for Crotch's Bumble Bee and Western Burrowing Owl) will ensure that impacts to this species are fully mitigated, and the project will not result in a decline of the species across its range. Therefore, cumulative impacts to Crotch's bumble bee and their nests and overwintering sites will be fully mitigated and not contribute to cumulatively considerable impacts.¹⁰¹

With the implementation of Conditions of Certification **BIO-1 through BIO-24** the Willow Rock Energy Storage Center will not contribute to cumulatively considerable impacts from the permanent or temporary conversion of habitat or direct and indirect impacts to plants or wildlife.

iii. Compliance with Laws, Ordinances, Regulations and Standards

The Conditions of Certification enable both the CEC compliance project manager (CPM) and the Applicant to ensure compliance with all laws, ordinances, regulations, and standards (LORS) applicable to the **Biological Resources** impacted by the Willow Rock Energy Storage Center, as identified in **Table 7.A-5**. The **Biological Resources** Conditions of Certification are in **Appendix A** of this Decision.

¹⁰⁰ Ex. 2000, FSA, pp. 5.2-206—5.2-207.

¹⁰¹ Ex. 2000, FSA, p. 5.2-207.

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

Applicable LORS	Conformance and Basis For Determination
Federal	
Federal Endangered Species Act (16 USC §§ 1531 et seq. and 50 CFR part 17.1 et seq.)	
Designates and protects federally-threatened and endangered plants and animals and their critical habitat. Applicants for projects that could result in adverse impacts on any federally-listed species are required to mitigate potential impacts in consultation with USFWS.	Compliant. There are no federally-listed plants species expected to occur in the project area. Federally-listed wildlife species with at least some potential to occur include monarch butterfly, desert tortoise, and California condor. Each of these species has been determined to have a low potential to occur. The project area does not support suitable overwintering or breeding habitat for monarch butterfly and, if present, would occur as an infrequent migrant. The distribution of desert tortoise is limited; however, there is a possibility that the species could occur. The Applicant is not seeking coverage under the ESA. Therefore, BIO-16 would require complete avoidance if a tortoise is observed during implementation of the project unless further coordination with the CPM, CDFW, and USFWS is conducted. California condor is not expected to nest in the project area but may occur as a very infrequent forager. BIO-1 through BIO-15 would reduce impacts to federally-listed species to less than significant and ensure compliance with the ESA.
Migratory Bird Treaty Act (16 USC §§ 703 to 711)	
Makes it unlawful to take or possess any migratory nongame bird (or any part of such a migratory nongame bird) as designated in the Act.	Compliant. The project would include BIO-1 through BIO-10 and BIO-16 through BIO-20 to reduce impacts to resident and migratory birds and ensure compliance with the MBTA.
Bald and Golden Eagle Protection Act (16 USC §§ 668 to 668c)	
Provides for the protection of the bald and golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures.	Compliant. Bald eagle is not expected to occur in the project area. Golden eagle is not expected to nest in the project area but could occur as a forager. The project would include BIO-1 through BIO-10 and BIO-17 to reduce impacts to golden eagle and ensure compliance with the BGEPA.
Clean Water Act §§ 401 and 404 (33 USC §§ 1251 to 1376)	
Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge of dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from RWQCB for the discharge of pollutants. By federal law, every applicant for a	Compliant. The project area does not support waters of the U.S. so Section 404 of the CWA would not apply. The project owner would obtain the appropriate section 401 permits through the LRWQCB prior to impacting and jurisdictional features to ensure compliance with the CWA. The additional implementation of BIO-24 provides conditions, such as installation of BMPs to control erosion and sedimentation, refueling

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.	requirements, and weed control, would further reduce impacts to these features.
Desert Renewable Energy Conservation Act – BLM	
Habitat Conservation Plan/Natural Communities Conservation Plan and a BLM Land Use Plan Amendment covering both public and private lands across seven counties, including Kern County.	Compliant. The project would include LAND-3 which would require an application for Transportation and Utility Systems and Facilities on Federal Lands (SF-299) to ensure compliance with the DRECP.
State	
California Endangered Species Act (Fish and G. Code, §§ 2050 to 2098)	
Species listed under this act cannot be “taken” or harmed, except under specific permit.	Compliant. The applicant is seeking take coverage for western Joshua tree, Crotch’s bumble bee, and western burrowing owl through the in lieu permitting process to ensure compliance with CESA. The additional implementation of BIO-1 through BIO-23 would further ensure that impacts to state-listed species are less than significant.
Fully Protected Species (Fish and G. Code, §§ 3511, 4700, 5050, and 5515)	
Lists animals species that are fully protected in California and states that these species may not be “taken” or possessed at any time and no provision of this code or any other law shall be construed to authorize the issuance of permits or licenses to take any fully protected species. However, California Senate Bill 147 (SB 147), passed in July 2023, authorizes CDFW to issue permits for the incidental take of fully protected species for certain projects, including renewable energy.	Compliant. Fully-protected species with the potential to occur within the project area include golden eagle, California condor, and ringtail. The implementation of BIO-1 through BIO-10 and BIO-17 through BIO-22 would reduce impacts to less than significant and ensure compliance with Fish and Game Code sections 3511, 4700, 5050, and 5515.
Migratory Birds (Fish and G. Code, §§ 3503, 3503.5, 3513, and 3800)	
Makes it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any migratory bird.	Compliant. The project would include BIO-1 through BIO-10 and BIO-16 through BIO-20 to reduce impacts to resident and migratory birds and ensure compliance with Fish and Game Code sections 3511, 4700, 5050, and 5515.
Furbearing Mammals (Fish and G. Code, § 251.1 and Title 14 § 460)	
Contains regulations for taking furbearing mammals, including prohibiting the harassment or unapproved take of furbearing mammals, including desert kit fox, fisher, American badger, Sierra Nevada Mountain beaver, Pacific marten, and Sierra red fox.	Compliant. The project would include BIO-1 through BIO-10 and BIO-22 to reduce impacts to fur-bearing mammals, specifically American badger, and ensure compliance with Fish and Game Code section 251.1 and Title 14 § 460.

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources**Native Plant Protection Act (Fish and G. Code, §§ 1900 et seq.)**

Designates state rare and endangered plants and provides specific protection measures for identified populations. The Act also prohibits the take of rare and endangered native plants with exceptions for agricultural and nursery operations, emergencies, or in proper coordination with CDFW under specific circumstances.

Compliant. Western Joshua tree is the only state rare or endangered plant occurring in the project area. The applicant will seek take coverage under the in lieu permitting program. The additional implementation of **BIO-1** through **BIO-12** would ensure that impacts to western Joshua trees are reduced to less than significant and ensure compliance with Fish and Game Code sections 1900 et seq.

California Desert Native Plant Act (California Food and Agriculture Code §§ 80001 – 80201)

Protects California native desert plants from unlawful harvesting on both public and privately owned lands.

Compliant. The project is exempt from the act as a privately owned public utility.

Western Joshua Tree Conservation Act (Fish and G. Code, § 1927)

Prohibits the importation, export, take, possession, purchase, or sale of any western Joshua tree in California unless authorized by CDFW.

Compliant. Under **BIO-12**, the project owner would seek take under the in lieu permitting program to ensure compliance with the WJTCA.

Porter-Cologne Water Quality Control Act (California Water Code Division 7)

Directs responsibility to RWQCBs for granting Waste Discharge Requirements (WDRs) or National Pollutant Discharge Elimination System (NPDES) permits for discharges to waters of the state. The Act also establishes water quality objectives to protect the beneficial uses of surface and groundwater resources.

Compliant. The project owner would obtain the appropriate WDRs or NPDES permits through the LRWQCB prior to impacting and jurisdictional features to ensure compliance with the Porter-Cologne WQCA. The additional implementation of **BIO-24** which provides conditions, such as installation of BMPs to control erosion and sedimentation, refueling requirements, and weed control, would further reduce impacts to these features.

California Lake and Streambed Alteration Notification/Agreement (Fish and G. Code, § 1602)

Prohibits alteration of any water body meeting the CDFW jurisdictional requirements of the CFGC without the appropriate permits.

Compliant. The project owner would seek coverage for impacts to CDFW jurisdictional streambeds through the in lieu permitting program to ensure compliance with CFGC § 1602. The additional implementation of **BIO-24** provides conditions, such as installation of BMPs to control erosion and sedimentation, refueling requirements, and weed control, would further reduce impacts to these features.

Local**Kern County General Plan – Land Use, Open Space, and Conservation Element (Threatened and Endangered Species)**

Policy 27: Threatened or endangered plant and wildlife species should be protected in accordance with state and federal laws.

Compliant. The project would include **BIO-1** through **BIO-24** to ensure that impacts to threatened and endangered plants and wildlife and other sensitive biological resources are reduced and ensure

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

Policy 28: The County should work closely with state and federal agencies to assure that discretionary projects avoid or minimize impacts on fish, wildlife, and botanical resources. Policy 29: The County will seek cooperative efforts with local, state, and federal agencies to protect listed threatened and endangered plant and wildlife species using conservation plans and other methods promoting management and conservation of habitat lands. Policy 30: The County will promote public awareness of endangered species laws to help educate property owners and the development community of local, state, and federal programs concerning endangered species conservation issues. Policy 32: Riparian areas will be managed in accordance with the USACE and the CDFW rules and regulations to enhance the drainage, flood control, biological, recreational, and other beneficial uses while acknowledging existing land use patterns. Measure Q: Discretionary projects shall consider effects to biological resources as required by CEQA. Measure R: Consult and consider the comments from responsible and trustee wildlife agencies when reviewing a discretionary project subject to CEQA. Measure S: Pursue the development and implementation of conservation programs with state and federal wildlife agencies for property owners desiring streamlined endangered species mitigation programs.	compliance with the Kern County General Plan – Land Use, Open Space, and Conservation Element.
Kern County General Plan – Energy Element (Importance of Energy to Kern County)	
Policy 8: The County should work closely with local, state, and federal agencies to assure that energy projects (both discretionary and ministerial) avoid or minimize direct impacts to fish, wildlife, and botanical resources, wherever practical.	Compliant. The project would include BIO-1 through BIO-24, which include measures to reduce impacts to biological resources and provide long-term compensatory mitigation for wildlife habitat, thus ensuring compliance with the Kern County General Plan – Energy Element.

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

Policy 9: The County should develop and implement measures which result in long-term compensation for wildlife habitat, which is unavoidably damaged by energy exploration and development activities.	
Rosamond Specific Plan – Open Space/Conservation Element	
Goal 3: To maintain open space qualities of the plan area.	Compliant. The project would include BIO-1 through BIO-24 , which include measures to provide long-term compensatory mitigation to maintain open space surrounding the project area at to ensure compliance with the Rosamond Specific Plan – Open Space/Conservation Element.
Willow Springs Specific Plan – Resource Element	
Policy 3: To ensure compliance with applicable state and federal laws and to protect the biological resources present in the Specific Plan area. Measure 15: Where possible, project development within the Specific Plan Update area shall be designed to avoid displacement or destruction of western Joshua tree habitat, to the satisfaction of the Kern County Agricultural Commissioner's Office. Areas adjacent to the woodland shall have a 50-foot setback from the western Joshua tree plants. Within that setback, a native plant cover should be restored to natural habitat values to serve as a buffer, if such plant cover is not present. Measure 16: A Joshua Tree Preservation and Transportation Plan shall be developed by the applicants for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner's Office for review and approval prior to grading permit issuances. Measure 21: Whether desert tortoises occur on site or not, garbage shall be hauled to a facility where it is immediately buried and not left above ground where ravens can congregate. If garbage service is not available, County road maintenance or other utility services shall be made contingent upon parcel owners removing visible trash on their property. The objective of	Compliant. The project would include BIO-1 through BIO-24 , which include measures to reduce impacts to biological resources, including western Joshua tree, desert tortoise, and potentially jurisdictional drainage features, thus ensuring compliance with the Willow Springs Specific Plan – Resource Element.

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

these measures is to minimize the potential for increased raven predation of tortoises in the region subsequent to development.

Measure 23: A Joshua Tree Preservation and/or Transplantation Plan shall be developed by the applicants of discretionary projects for each parcel where Joshua trees are located on site. The plan shall be submitted to the Kern County Agricultural Commissioner for review and approval prior to grading permit issuance.

Measure 24: Prior to issuance of any grading permits for individual projects, individual project applicants shall consult with the RWQCB, CDFW and/or USFWS, and the USACE to identify potentially required permits. Compliance with this measure will be confirmed through the submittal of a letter (in conjunction with submittal of grading permit applications) to the County demonstrating compliance with the above-mentioned agencies.

Measure 25: Prior to the issuance of grading permits, individual project applicants shall obtain all appropriate permits as determined necessary by the RWQCB, USFWS, CDFW, and the USACE.

Willow Springs Specific Plan – Biological Resource Element

Policy 1: Where possible, development shall be designed to avoid displacement of sensitive species.

Policy 2: Focused surveys shall be conducted by a County-approved biologist to establish the presence or absence of sensitive species.

Policy 3: Initial development within the Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields).

Measure 2: Prior to tentative tract map approvals or additional development plan approvals, focused surveys shall be conducted by a qualified biologist (subject to the approval of CDFW and USFWS) to establish the presence or absence of sensitive plant or

Compliant. The project would include **BIO-1** through **BIO-24**, which include measures to reduce impacts to biological resources, including western Joshua tree, desert tortoise, and potentially jurisdictional drainage features, thus ensuring compliance with the Willow Springs Specific Plan – Biological Resource Element.

TABLE 7.A-5 Conformance With Applicable LORS for Biological Resources

wildlife species on the tract. Should sensitive species be present, applicable mitigation shall be implemented per federal, state, and local Endangered Species Protection regulations, as determined necessary by the County Agricultural Commissioner. Measure 3: Initial development within the Willow Springs Specific Plan Update area shall, when possible, be directed towards previously impacted areas (i.e., agricultural fields). Portions of the plan area with native vegetation, especially along the northern and western borders, shall be developed in the later phases of project buildout. Measure 4: Project site plans shall be encouraged by the County Agricultural Commissioner to be designed to preserve shrub communities where the Le Conte's thrasher is known to be located, in accordance with state and federal regulations. Measure 5: Although there is a low potential for the occurrence of desert tortoise in the Specific Plan area, desert tortoises may occur on site. If tortoises are discovered during subsequent surveys, CDFW and USFWS shall be contacted immediately, and appropriate mitigation shall be developed and implemented prior to resumption of development activities.	
Kern County Zoning Ordinance	
Objective 2: Promote a reduction in unnecessary light intensity and glare, and to reduce light spillover onto adjacent properties. Objective 3: Protect the ability to view the night sky by restricting unnecessary upward projections of light.	Compliant. The project would include VIS-3 and BIO-7 to reduce impacts associated with glare and nighttime lighting and ensure compliance with the Kern County Zoning Ordinance.

The evidence establishes that the Willow Rock Energy Storage Center will comply with all applicable federal, state, and local LORS for the protection of biological resources.

iv. Agency and Public Comment

Agency and public comments on Staff's analysis of **Biological Resources** in the Final Staff Assessment (FSA) were provided by the County of Kern's Planning and Natural Resources

Department, and CDFW. All comments are summarized in **Appendix D** (List of Agency and Public Comment) and were considered by the Committee and incorporated as discussed above.

v. Findings of Fact

Based on the weight of substantial evidence, we make the following findings:

1. The Willow Rock Energy Storage Center project area encompasses the approximately 88.6-acre Willow Rock site, an additional 133 acres of private land parcels surrounding the site (referred to as P1, P2 North, P2 South, and Villa Haines) that will be allocated for potential temporary staging and laydown areas, and the roughly 380.0-acre right-of-way (ROW) associated with the approximately 19-mile 230-kilovolt (kV) generation-tie (gen-tie) line plus a 500-foot buffer.
2. The construction of the Willow Rock Energy Storage Center site and gen-tie route will result in 88.8 acres of permanent impacts to biological resources and 122.2 acres of temporary impacts in the Without Berm option, and 163.5 acres of permanent impacts and 117.3 acres of temporary impacts in the With Berm option.
3. The project area is categorized by the following ecosystems: North American Deserts (Level I), Warm Deserts (Level II), Mojave Basin and Range (Level III), and Western Mojave Basin (Level IV) (USEPA 2025).
4. The evidence contains an analysis of potential adverse impacts upon biological resources, including special-status species, which may potentially be affected by construction and operation of the Willow Rock Energy Storage Center.
5. The dominant vegetation communities that occur in the project site reflect those commonly found throughout the Western Mojave Basins Ecoregion, including 91 native species and 11 non-native species.
6. Critical habitats for federally- and state-listed species do not occur in or adjacent to the project site.
7. Except for the state-listed as threatened western Joshua tree (*Yucca brevifolia*) which occurs throughout the project site, no other federally- or state-listed plant species are expected to be present in or near the project site.
8. A total of 3,970 western Joshua trees were recorded in the survey area during the 2024 verification census conducted by the Applicant, including a Joshua tree woodland along gen-tie options 2A and 2B.
9. Crotch's bumble bee individuals and habitat are present throughout the project site.
10. Burrowing owl habitat is present throughout the project site.

11. Sixteen special-status plants were either observed during 2023 and 2024 focused rare plant surveys or determined to have some potential to occur in or near the project site based on the presence of suitable habitat and/or the proximity to known recorded occurrences.
12. Eight special status wildlife species were identified in or near the project site through direct observation in surveys conducted in 2023 and 2024 by the Applicant, and an additional 28 were determined to have some potential to occur.
13. The Applicant will implement appropriate avoidance and mitigation measures during site mobilization, construction, operation, and closure to prevent significant adverse impacts to all sensitive species.
14. The Applicant will assign one or more Designated Biologists with specific field experience with the biological resources found in or near the project area for all site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and decommissioning activities.
15. The Designated Biologist and/or Biological Monitors will halt all activities in any project area if there would be an unauthorized impact to biological resources if the activities continue.
16. Prior to site mobilization or construction activities, the Applicant will develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP).
17. Prior to site mobilization or construction activities, the Applicant will develop a Vegetation Management Plan (VMP) to stabilize temporarily disturbed areas, including proposed stabilization measures, seed mixes, schedules, success criteria, reporting requirements, and any remediation activities.
18. Prior to site mobilization or construction activities, the Applicant will develop an Integrated Weed Management Plan (IWMP) with all required measures to identify, control, and manage existing and potential weed infestations on the project site.
19. Prior to site mobilization or construction activities, the Applicant will develop an Invasive Species Management Plan (ISMP) with all required measures to identify, control, and manage existing and potential invasive species on the project site.
20. Any special-status plant species (including state- and federally-listed threatened or endangered species, candidates for listing, and all California Rare Plant Ranks (CRPR) 1A, 1B, 2, 3, and 4 ranked species) detected shall be documented in the pre-construction survey reports, and the results will inform the implementation of avoidance and minimization measures to lessen the impacts on special-status plants. If avoidance is not feasible, special-status plant compensation lands will be acquired.
21. Prior to site mobilization or construction activities, the Applicant will submit an updated western Joshua tree census for all WJTs within the project area and a 50-foot buffer around the project

area, and the final Western Joshua Tree Relocation Plan. Impacts to western Joshua tree woodlands will be mitigated with land acquisition at a 3:1 ratio.

22. Prior to site mobilization or construction activities, the Applicant will submit a Crotch's Bumble Bee Mortality Reduction and Relocation Plan to avoid or minimize impacts to foraging bees, overwintering bees, and bumble bee nests. To fully mitigate for impacts to Crotch's bumble bee, the Applicant will either purchase conservation bank credits or habitat management lands at a 3:1 ratio for actual permanent and temporary impacts to habitat.
23. Prior to site mobilization or construction activities, the Applicant will submit a Burrowing Owl Mortality Reduction Plan including detailed description of the avoidance, minimization, and mitigation measures for take authorization, including survey methodology, detailed burrow exclusion and excavation methods, and project activities that may be performed within burrowing owl avoidance buffers. To fully mitigate for impacts to burrowing owl, the Applicant will either purchase conservation bank credits or habitat management lands at a 3:1 ratio for actual permanent and temporary impacts to habitat.
24. Prior to site mobilization or construction activities, the Applicant will survey for special-status reptiles and facilitate relocation of individuals detected out of harm's way.
25. Prior to site mobilization or construction activities, the Applicant will conduct surveys for desert tortoise to implement avoidance measures if necessary, although they are not expected to occur on the project site.
26. The Applicant will implement Swainson's hawk avoidance and minimization measures to identify nests or potential nesting habitat and implement no-disturbance buffer zones as necessary.
27. The Applicant will implement avoidance and minimization measures for American badger, desert kit fox, ringtail, Mohave ground squirrel, and special status small mammals.
28. Prior to site mobilization or construction activities, the Applicant will prepare and implement a Raven Management and Reporting Plan (Raven Plan) consistent with CDFW and USFWS raven management guidelines, to minimize project-related predator subsidies (e.g. common ravens and coyotes) and prevent any increases in raven numbers or activity within desert tortoise habitat during construction and operation phases.
29. Prior to site mobilization or construction activities, the Applicant will prepare and implement a Nesting Bird Management Plan (NBMP) describing methods to minimize potential project effects to nesting birds.
30. The Applicant shall develop and implement Collision Avoidance and Minimization Measures to deter collisions between birds and the transmission line, including an aerial marker installation plan that includes the types of markers to be used, their proposed installation locations, and a corresponding map that shall identify which section of the generation tie-line is located within 5 miles of an active Swainson's hawk nest.
31. The Applicant will implement measures to avoid, minimize, and mitigate for potential direct and indirect impacts to jurisdictional waters of the state and to satisfy California Fish and Game Code, sections 1600 through 1607.

32. The Applicant will develop and implement a project-specific Worker Environmental Awareness Program (WEAP) that provides an overview of the conditions of certifications, other regulatory permit requirements, and applicable LORS that must be complied with in order to avoid, minimize and mitigate impacts to biological resources.
33. With the implementation of Conditions of Certification **BIO-1 through BIO-24**, and **AQS-3, AQS-4, HAZ-1, NOISE-6, VIS-3, WATER-1**, and **WORKER-1** no unmitigated significant impacts on biological resources will occur.

vi. **Conclusions of Law**

1. Implementation of the Conditions of Certification **BIO-1 through BIO-24**, and **AQS-3, AQS-4, HAZ-1, NOISE-6, VIS-3, WATER-1**, and **WORKER-1** specified in **Appendix A** of this Decision will ensure that the Willow Rock Energy Storage Center will not contribute to significant adverse direct, indirect, or cumulative impacts on Biological Resources, nor result in unauthorized take of a protected species.
2. The Conditions of Certification **BIO-1 through BIO-24**, and **AQS-3, AQS-4, HAZ-1, NOISE-6, VIS-3, WATER-1**, and **WORKER-1** specified in **Appendix A** of this Decision will ensure that the Willow Rock Energy Storage Center will be designed, constructed, and operated in conformance with applicable laws, ordinances, regulations, and standards applicable to Biological Resources.

7 Environmental Analysis

B. Soil and Water Resources

i. Introduction

This section of the Decision focuses on the soil and water resources associated with the proposed Willow Rock Energy Storage Center, including the potential for the project to induce erosion and sedimentation, exacerbate flood conditions, adversely affect water supplies, and degrade water quality. The analysis also considers site contamination and any potential cumulative impacts to water quality in the vicinity of the project, as well as Willow Rock's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to soil and water resources.

Evidence on the topic of Soil and Water Resources is contained in Exhibits 1025, 1032-1033, 1035-1036, 1040-1041, 1046, 1053, 1070, 1080, 1093, 1100, 1102-1104, 1112, 1116, 1119, 1123, 1133-1137, 1143-1153, 1155, 1233, 1234, 1323, 2000, and 2001, and in the Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be an advanced compressed air energy storage (A-CAES) system that will store power during off-peak electricity conditions by pumping compressed air into an underground cavern. The air would be held and compressed in the cavern by a column of water from a hydrostatic compensation reservoir at the ground surface. To recoup power, the compressed air would be released from the cavern.²

1. Surface Water and Stormwater Drainage

Willow Rock will be constructed on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southeastern Kern County, California.

The project would be within the Town of Rosamond watershed, which drains into the dry Rosamond lakebed approximately 4 miles to the southeast. There are no water bodies within

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19-48:20, 179:16 – 225:10.

² Ex. 2000, FSA, p. 5.16-1.

this watershed and therefore, no impaired water bodies to identify under Section 303(d) of the Clean Water Act. The project site generally slopes to the southeast.³

During operations, onsite stormwater flows would not be discharged outside the project site boundary. Stormwater within the project site would be conveyed by sheet flow and system flow (catch basins, swales, and stormwater conveyance piping) to an unlined stormwater pond on the southeast corner of the site.⁴

The Applicant is currently considering an option of incorporating an architectural berm into the project layout (called the With Berm option) to manage rock waste generated during underground cavern construction. Alternatively, as described in the **Solid Waste Management** Section 6(F) of this Decision, the rock waste could be hauled off-site to an approved facility (called the Without Berm option). Whether or not the architectural berm is included in the project layout, offsite stormwater flow would be diverted around the project facility by drainage channels along the north and west of the Willow Rock site. Stormwater conveyed by the west drainage channel would flow south and then discharge to the ditch along Dawn Road. Stormwater conveyed by the north drainage channel would flow east and then discharge to the ditch along the Sierra Highway. Drainage channels would be sized to carry more than the discharge of a 100-year storm event.⁵

2. Groundwater

The northeast portion of the project site is within the Fremont Valley groundwater basin. The groundwater is of sodium bicarbonate or calcium-sodium sulfate character in the part of the basin where the project site is located, and total dissolved solids (TDS) content ranges from 800 to 1,000 mg/L. The Fremont Valley groundwater basin is a low priority basin and is not under a Groundwater Sustainability Plan overseen by a Groundwater Sustainability Agency per the Sustainable Groundwater Management Act (SGMA). The remainder of the site is within the Rosamond Hills, and not within a groundwater basin identified by the Department of Water Resources (DWR).⁶

Although the project site includes the Fremont Valley groundwater basin, approximately 6 percent of the water supplied to the project by the proposed water purveyor Antelope Valley East Kern Water Agency (AVEK) is produced from the Antelope Valley groundwater basin. The Antelope Valley groundwater basin is a very low priority basin with respect to overdraft, and thus a groundwater sustainability plan is not required according to the SGMA. However, litigation resolved in 2015 defined the Antelope Valley Adjudication Area and created the

³ Ex. 2000, FSA, p. 5.16-1.

⁴ Ex. 2000, FSA, p. 5.16-1.

⁵ Ex. 2000, FSA, p. 5.16-1.

⁶ Ex. 2000, FSA, p. 5.16-2.

Antelope Valley Watermaster Board (AVWB) to administer adjudicated water rights. AVEK's annual groundwater allotment is currently 4,025 acre-feet per year (AFY).⁷

Based on soil boring data included in the Applicant's geotechnical characterization report, a 3- to 7.5-foot thick veneer of residual soil overlies the quartz monzonite for the Rosamond Hills and covers most of the project site, except for the southwest corner where the quartz monzonite is exposed. Limited measurements suggest that the depth to groundwater is approximately 40 feet below ground surface (bgs), with a general flow direction to the southeast toward Rosamond Dry Lake.⁸

According to the GeoTracker website sponsored by the State Water Resources Control Board (SWRCB), there are no past or present contaminated groundwater cleanup sites in the vicinity of the project site (SWRCB 2025).⁹

3. Flooding

The Willow Rock site is within Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map FIRM panel 06029C3675E and within the Kern County Unincorporated Area Zone X. Zone X is defined as areas determined to be outside the 0.2 percent (or 500-year) annual chance floodplain. There are no dams in the region that could inundate the project area. The project area is also not vulnerable to sea level rise, tsunami, or seiche.¹⁰

4. Water Supply

Water supply during both the construction and the operation phases of the project would be provided by AVEK. Based on 2023 records, approximately 94 percent of AVEK water deliveries are sourced from the State Water Project (SWP) via the California Aqueduct; the remainder is produced from wells in the Antelope Valley groundwater basin. Water will be conveyed to the project by a new turn-out from an existing 36-inch water pipeline approximately 300 feet east of the project site. During the 5-year construction period, an estimated 1,400 AF would be needed; 700 AF to support construction activities, and 700 AF to fill the compensation reservoir, accounting for evaporation. During operation, although the applicant expects a positive water balance of 3.65 AFY from the efficiencies in the A-CAES process, annual consumption of AVEK delivered water is expected at 2.2 AFY for offices, maintenance facilities, service water, fire system re-filling, and make-up water for cooling and thermal system water.¹¹

⁷ Ex. 2000, FSA, p. 5.16-2.

⁸ Ex. 2000, FSA, pp. 5.16-2—5.16-3.

⁹ Ex. 2000, FSA, p. 5.16-3.

¹⁰ Ex. 2000, FSA, p. 5.16-3.

¹¹ Ex. 2000, FSA, p. 5.16-4.

5. Wastewater

During project construction, sanitary wastewater needs would be addressed by portable toilets. Lined ponds will contain the volume of drill cuttings produced during two phases of access shaft installation: 1) drilling access shafts for A-CAES cavern construction, and 2) drilling access shafts to initiate A-CAES cavern operation. During project operation, industrial related wastewater would be contained in tanks and periodically disposed off-site by a third-party vendor. Sanitary waste from the administration/control building would be collected in a septic tank and either dispersed by a standard leach-line system, or periodically pumped out and disposed off-site by a third-party vendor.¹²

b. Regulatory Setting

Numerous federal, state, and local laws and regulations govern the management of water resources for public benefit, health and safety, and environmental protection, as specifically provided below in **Table 7.B-2 (LORS)**.

1. Federal

At the federal level, the water quality protection requirements of the federal Clean Water Act (CWA) are regulated and enforced by the SWRCB and its nine Regional Water Quality Control Boards (RWQCBs) including the Lahontan RWQCB. Because the Willow Rock project will not discharge waste into waters of the United States, no federally delegated permit issued by the SWRCB or Lahontan RWQCB is required. Instead, waste discharge requirements are included in Condition of Certification **WATER-2**.

Under Section 404(a) of the CWA, the U.S. Army Corp of Engineers (USACE) issues permits for the discharge of fill and dredging material into navigable waters, defined as waters of the United States. Based on the U.S. Supreme Court decision in the case of *Sackett v. Environmental Protection Agency* there are no USACE jurisdictional waters since all the drainage features are considered ephemeral and have no hydrologic connection to any downstream relatively permanent waters or traditionally navigable waterways.

Under Section 303(d) of the CWA, states are required to identify impaired surface water bodies and develop total maximum daily loads (TMDLs) for contaminants of concern. The TMDL is the quantity of pollutant that can be assimilated by a water body without violating water quality standards. Since there are no water bodies within the Town of Rosamond watershed, there are no impaired water bodies to identify according to CWA Section 303 (d).¹³

¹² Ex. 2000, FSA, p. 5.16-4.

¹³ Ex. 2000, FSA, pp. 5.16-4—5.16-5.

2. State

As stated above, the Willow Rock Energy Storage Center project site spans a low and very low priority groundwater basin. Thus, there is no applicable Groundwater Sustainability Plan.¹⁴

Sections 6002 and 6003 of the California Water Code define a jurisdictional dam as an artificial barrier that is either greater than 6 feet in height and impounds at least 50 acre-feet of water, or 25 feet high and impounds 15 acre-feet of water. The embankment of the hydrostatic compensating reservoir for the Willow Rock Energy Storage Center would have a maximum height of 23 feet from native grade to the top of the embankment and would impound more than 50 acre-feet of water, and therefore meets the definition of a jurisdictional dam. Section 6200 requires an owner of a dam to obtain approval from the Division of Safety of Dams within the Department of Water Resources (DWR-DSOD) for the plans and specifications prior to commencing dam construction. Section 6077 provides that it is unlawful to construct, enlarge, repair, alter, remove, maintain, or operate any dam or reservoir except upon approval of DWR-DSOD.¹⁵

Section 13260(a) of the CWC requires that any person discharging waste or proposing to discharge waste, other than to a community sewer system, which could affect the quality of the waters of the State, to file a report of waste discharge (ROWD).¹⁶ As listed in Table 1 of SWRCB Order No. 2003-0003-DWQ, boring waste discharges are considered a low threat to water quality due to low volume and minimal pollutant concentrations. The drill cutting ponds that will be necessary during installation of the cavern access will be subject to waste discharge requirements (WDRs) per **WATER-2**.¹⁷

The state's Porter-Cologne Water Quality Control Act (Porter-Cologne), the California Water Code, and the Federal CWA all authorize SWRCB and the regional boards to regulate discharges that have the potential to impact surface or groundwater. In Kern County, the SWRCB has delegated this authority to the Kern County Environmental Health Division (KCEPH) to regulate onsite wastewater treatment systems such as septic systems. For the Willow Rock site, the project owner will be collecting wastewater from the administration/control building in a septic tank that will either be pumped out and disposed of off-site by truck or dispersed by a standard leach-line system.¹⁸

¹⁴ Ex. 2000, FSA, pp. 5.16-5—5.16-6.

¹⁵ Ex. 2000, FSA, p. 5.16-6.

¹⁶ SWRCB Water Quality Order No. 2003-0003-DWQ, Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with a Low Threat to Water Quality (General WDRs).

¹⁷ Ex. 2000, FSA, pp. 5.16-6 and 5.16-8.

¹⁸ Ex. 2000, FSA, pp. 5.16-6—5.16-7.

ii. Environmental Analysis of Soil and Water Resources

The evaluation of environmental impacts to soil and water resources from the Willow Rock Energy Storage Center considers whether there are potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 7.B-1**, and applicable federal, state, and local rules and regulations.

TABLE 7.B-1 CEQA Hydrology and Water Resources Checklist¹⁹				
WATER RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☒	☐	☐
b. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:				
i. result in substantial erosion or siltation, on- or offsite;	☐	☒	☐	☐
ii. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☒	☐	☐
iii. create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff; or	☐	☒	☐	☐
iv. impede or redirect flood flows?	☐	☒	☐	☐
d. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☒	☐	☐
e. Conflict with or obstruct implementation	☐	☒	☐	☐

¹⁹ Ex. 2000, FSA, pp. 5.16-6—5.16-7, citing the checklist established by CEQA Guidelines, Appendix G, for hydrology and water quality.

TABLE 7.B-1 CEQA Hydrology and Water Resources Checklist¹⁹				
WATER RESOURCES Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
of a water quality control plan or sustainable groundwater management plan?				
f. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☒	☐	☐
g. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☒	☐	☐

a. Thresholds of Significance

For most impacts to soil and water resources, the threshold of significance is any discharge from the project site that could contaminate surface or groundwater resources and violate water quality standards. Thus, mitigation is to control such discharges.

b. Impact Assessment and Mitigation

1. Would the project violate water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

A. Construction

Condition of Certification **WATER-1** requires that a drainage, erosion and sedimentation control plan (DESCP) be prepared for both the construction and operational phases of the project. With the implementation of the DESCP, development of the site would not cause substantial degradation in the quality, or an increase in the rate or volume, of stormwater runoff from the site during construction.

The deepest excavation during construction of surface facilities would be the hydrostatic compensating reservoir at an anticipated depth of 45 feet below grade. This is designed to be above the water table, and thus it is unlikely that groundwater would be encountered during excavation activities. However, if dewatering is necessary, under **WATER-1, WATER-2** and **BIO-24** depending on the nature of the contamination to groundwater, the CPM may require the Applicant to treat the water before discharging or hauling away the untreated water by a permitted service provider.

The lined drill cuttings ponds required to install access shafts would be subject to the WDRs implemented per **WATER-2**. During project construction, temporary toilet and sanitary facilities would be provided and served by a third-party contractor.

Thus, the project would not be expected to violate water quality standards or waste discharge requirements during construction, and impacts would be less than significant.²⁰

B. Operations

During operation of the Willow Rock Energy Storage Center, onsite stormwater would not be discharged offsite but would be directed to a retention pond in the southeast portion of facility compound. Regardless of whether an architectural berm is constructed, offsite stormwater flow would be diverted around the project site perimeter by drainage channels along the north and west. Stormwater from drainage channels would be discharged to ditches along either Dawn Road or Sierra Highway. Drainage channels would be sized to carry more than the discharge of a 100-year storm event. The DESCP will provide for stormwater management including the impact of offsite stormwater flow to existing drainages. Conditions of Certification **WATER-3** and **WATER-4** will ensure that the project will conform to sanitary waste requirements whether the project owner elects to treat onsite using a leach-line system or dispose of offsite by a third-party vendor.²¹

The record establishes that the project would not be expected to violate water quality standards or waste discharge requirements during operation, and impacts would be less than significant with mitigation.

2. Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

AVEK will supply water to Willow Rock during both the construction and the operation phases of the project. As noted above, AVEK's groundwater production allotment of 4,025 AFY is approximately 0.006 percent of the estimated 68,000,000 acre-feet of the total Antelope Valley groundwater basin storage. The annual project demand of approximately 280 AFY for construction per year over 5 years is 7 percent of AVEK's current annual groundwater allotment. However, groundwater constitutes only 6 percent of AVEK water deliveries. Therefore, only about 17 AFY of the total annual water demand would be sourced from Antelope Valley basin groundwater which would constitute approximately 0.4 percent of

²⁰ Ex. 2000, FSA, p. 5.16-8.

²¹ Ex. 2000, FSA, pp. 5.16-8—5.16-9.

AVEK's groundwater allotment. Additionally, the estimated 2 AFY of operational water demand would have a negligible impact on AVEK's annual groundwater allotment.

Therefore, the Willow Rock Energy Storage Center project would not be expected to decrease groundwater supplies, interfere with groundwater recharge, nor impede sustainable groundwater management.²²

3. Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces in a manner which would:

A. Result in substantial erosion or siltation, on- or offsite?

As discussed above, the impact of any erosion during project construction would be addressed by the DESCP prepared per **WATER-1**. During operations, the facility would drain internally into a retention basin and stormwater runoff would be addressed by the project operations DESCP prepared per **WATER-1** as well.²³

Thus, the project is not expected to cause substantial erosion during either construction or operation, and impacts would be less than significant with mitigation.

B. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Similarly, the impact of on- or off-site flooding due to surface water runoff from construction activities would be addressed by the DESCP prepared per **WATER-1**. During operations the onsite stormwater runoff would drain internally into a retention basin and offsite stormwater runoff diverted around the facility would be addressed by the project DESCP prepared per **WATER-1**.

Assuming full reservoir capacity, water level drop to the base of the hydrostatic compensation reservoir embankment, and failure of the drain to the underground chamber, a possible failure of the hydrostatic compensation reservoir embankment could result in the release of an estimated 409 AF of water that would likely inundate local drainages and possibly impact local roadways, railroads and developments in eastern Rosamond. To avoid a failure scenario, the reservoir embankment would be designed, monitored during construction, and inspected during operations, in accordance with the DWR-DSOD requirements per **WATER-5 and WATER-6**.²⁴

²² Ex. 2000, FSA, pp. 5.16-9—5.16-10.

²³ Ex. 2000, FSA, p. 5.16-10.

²⁴ Ex. 2000, FSA, p. 5.16-10.

With implementation of the Conditions of Certification, the project would not be expected to cause on- or off-site flooding due to surface water runoff during construction or operation.

C. Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?

For the same reasons, the implementation of the construction and operations DESCP prepared per **WATER-1** will be expected to manage on- and off-site stormwater, and the Willow Rock project will not be expected to create surface water runoff that would exceed stormwater drainage capacity either during construction or operation.²⁵

D. Impede or redirect flood flows?

Because the Willow Rock site is outside the 0.2 percent (or 500-year) annual chance floodplain, flood water flow would be addressed with the implementation of the construction and operations DESCP prepared per **WATER-1**.²⁶ Therefore, the project's construction and operation would not be expected to impede or redirect flood flows.

4. Would the project in flood hazard, tsunami, or seiche zones risk release of pollutants due to project inundation?

Since the Willow Rock site lies outside of the 500-year flood zone and the likelihood of accumulating flood water is low, if any flooding should occur it will be addressed during construction and operations by **WATER-1**. Additionally, the project site is not near the coast or a large body of water, so there is no danger of a tsunami, seiche, or vulnerability to sea level rise. To avoid a possible failure of the hydrostatic compensation reservoir embankment, it will be designed and monitored with DWR-DSOD oversight per **WATER-5 and WATER-6**.²⁷ Therefore, the overall impacts of flood hazard, tsunamis, or seiches affecting the project during construction and operation would be less than significant with mitigation.

5. Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The impact of the project on water quality due to erosion during construction and operations would be mitigated by the DESCP prepared per **WATER-1**. Further, the Antelope Valley groundwater basin is being sustainably managed by the Antelope Valley Watermaster Board

²⁵ Ex. 2000, FSA, p. 5.16-11.

²⁶ Ex. 2000, FSA, p. 5.16-11.

²⁷ Ex. 2000, FSA, pp. 5.16-11-5.16-12.

that administers the water rights and manages the groundwater resource in accordance with a 2015 court judgement.²⁸

Therefore, the overall impacts of the project on groundwater management and water quality control plans during construction and operation would be less than significant with mitigation.

6. Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

The reliability of AVEK water supplies during normal and drought conditions is discussed in AVEK's urban water management plan and water shortage contingency plan. AVEK water supply is expected to remain reliable during drought conditions due to the water banking programs AVEK has initiated. As of 2020, AVEK had banked 90,000 acre-feet in the Antelope Valley groundwater basin. Additionally, the Willow Rock's use of AVEK water would be documented per **WATER-7**.

Therefore, AVEK would provide sufficient water supply for the project during normal and drought conditions, and the CPM will verify efficient use of project water supply per **WATER-7**.

7. Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

There are no wastewater treatment providers in the project proximity that could feasibly service the facility. Wastewater generated during construction would be accommodated by portable toilets. During project operations, industrial related wastewater would be contained in tanks and periodically disposed of off-site by a third-party vendor. Off-site disposal of industrial wastewater would be documented per **WATER-3**. Additionally, whether the project owner elects to treat sanitary waste using a leach-line system, or to dispose of it off-site, the disposal or treatment of the waste will be in conformance with either **WATER-3** or **WATER-4** consistent with the evaluation and enforcement of local standards by Kern County Environmental Health Division (KCEPH) in compliance with onsite wastewater treatment system (OWTS) requirements.²⁹

The project would not be expected to violate water quality standards or waste discharge requirements during construction or operation, and impacts would be less than significant with mitigation.

²⁸ Ex. 2000, FSA, pp. 5.16-9 and 5.16-12.

²⁹ Ex. 2000, FSA, p. 5.16-13.

c. Cumulative Impacts

Of the 37 projects within 8.1 miles of Willow Rock under review by the Kern County Planning Commission or in development, five projects have similar water supply conditions to Willow Rock Energy Storage Center, with either AVEK as the purveyor or groundwater extraction from the Antelope Valley basin:

- Solar Energy
 - Bullhead Solar
 - Capella Solar
 - Gettysburg Solar/AV Apollo
 - SSI Rosamond Solar
- Manufacturing – Mojave Micro Mill

The total construction water demand for Willow Rock of 1,400 acre-feet over 5 years exceeds the range of construction water demand (13 to 450 acre-feet) for the other projects. This is due to the one-time demand of approximately 700 acre-feet to fill the hydrostatic compensation reservoir during construction, prior to project operation. Excluding the demand for the initial fill of the compensation reservoir, the annual construction water demand for the subject project is on par with the other projects. The cumulative annual operational water demand of the five projects evaluated plus the Willow Rock Energy Storage Center is approximately 1,049 AFY. This cumulative operational water demand represents 0.7 percent of AVEK's annual allotment (148,869 AFY). Thus, the project would not result in a cumulative impact on water resources in the region.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 7.B-2 demonstrates that, with implementation of specific Conditions of Certification, the Willow Rock Energy Storage Center will comply with all applicable LORS.

TABLE 7.B-2 Conformance With Applicable LORS for Soil and Water Resources	
Applicable LORS	Conformance and Basis For Determination
Federal	
Clean Water Act, U.S. Code § 1342 (b) allows states to establish programs to issue NPDES permits.	Compliant. Since the project does not discharge stormwater to waters of the US, no NPDES permit is required. However, in order to mitigate potential water quality impacts during construction and operation of the project, the CEC requires the project to prepare a DESCP as described in WATER-1 . The DESCP would include best management practices similar to those included in a SWPPP.
State	
Sustainable Groundwater Management Act	Compliant. Project water supply during construction and operation would be provided by

TABLE 7.B-2 Conformance With Applicable LORS for Soil and Water Resources	
Applicable LORS	Conformance and Basis For Determination
	AVEK. As established in a 2015 court judgement, the Antelope Valley Watermaster Board (AVWB) administers adjudication water rights and manages the groundwater resource.
California Water Code § 6200. Requires the DSOD to approve all plans and specifications prior to commencing dam construction.	Compliant. Per WATER-5 and WATER-6 , hydrostatic compensation reservoir embankment design would be reviewed and approved by the DWR-DSOD. DWR-DSOD staff would inspect embankment construction.
California Water Code (CWC) § 13263, 13300, 13301, 13304, and 13350.	Compliant. Per WATER-2 the drill cuttings ponds would be required to comply with Sections 13300, 13301, 13304, and 13350 of the Water Code.
Local Agency Management Program (LAMP) for Onsite Wastewater Treatment Systems (OWTS)	Compliant. If the applicant elects to construct an onsite leach line septic system, WATER-5 would require the OWTS to comply with SWRCB OTWS design requirements.
Local	
Kern County Ordinances: 8.62.010; Establishes OWTS standards and requirements.	Compliant. If the applicant elects to construct an onsite leach line septic system, the KCEPH would determine if the proposed septic system conforms with SWRCB OWTS requirements per WATER-4 . Compliant. Industrial related wastewater would be contained in tanks and periodically disposed off-site by a third-party vendor would be documented per COC WATER-3 . Compliant. Erosion control standards would be incorporated into the DESCP prepared prior to construction per WATER-1 .
§ 14.22.270; Prohibition of uncontrolled industrial wastewater discharge	
§ 17.28.140; Establishes standards for erosion control during grading activities.	

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Soil and Water Resources.

iv. Agency and Public Comment

At the Evidentiary Hearing, oral testimony was provided by the Applicant and Staff, and expert comments were provided by DWR-DSOD, on the hydrostatic compensating reservoir embankment which qualifies as a “dam” under the California Water Code and subject to the Dam Safety Program administered by DWR-DSOD.³⁰ The testimony established that:

- The DWR-DSOD are the state’s technical experts in ensuring that dams in the State of California are designed, constructed, operated, and maintained safely.
- Given the expertise of DWR-DSOD over jurisdictional dams, it is warranted that the CEC designates the DWR-DSOD as a DCBO for the design, construction, and operation of the hydrostatic compensating reservoir embankment.
- The DWR-DSOD as DCBO will consult with the CPM and project owner in an iterative way through all milestones in the design approval process provided in **WATER-5 and WATER-6**.
- The application process for the project owner to obtain DWR-DSOD review of the dam plans and specifications is not a separate entitlement process, but rather the procedure inherent in the design approval process in the Dam Safety Program for the project owner to document all design plans, specifications, reports, and other project related data in order to achieve the DWR-DSOD’s review and approval of the hydrostatic compensating reservoir embankment.
- The CEC and DWR-DSOD will enter into a memorandum of understanding to memorialize the role of DWR-DSOD as DCBO under the CEC’s exclusive permitting authority for the Willow Rock Energy Storage Center, consistent with DWR-DSOD’s authority to administer the Dam Safety Program and exercise regulatory oversight over the reservoir embankment.
- The project owner’s payment of the initial and annual fees to DWR-DSOD to participate in the Dam Safety Program is set by the Water Code, and is not dissimilar to fees paid by Applicants of AFCs to other state and local agencies to obtain approvals for aspects of projects under the CEC’s exclusive “in-lieu” jurisdiction.
- The Applicant can work with DWR-DSOD to better calibrate the fee to the capital costs of the jurisdictional embankment.

³⁰ 8/21/2025 Evidentiary Hearing RT pp. 179:16 – 225:10.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Willow Rock Energy Storage Center project will be within the Town of Rosamond watershed, and there are no water bodies within this watershed. Therefore, there are no impaired water bodies to identify under Section 303(d) of the Clean Water Act.
2. Offsite stormwater flow would be diverted around the project facility by drainage channels along the north and west. Stormwater conveyed by the west drainage channel would flow south and then discharge to the ditch along Dawn Road. Stormwater conveyed by the north drainage channel would flow east and then discharge to the ditch along the Sierra Highway. Drainage channels would be sized to carry more than the discharge of a 100-year storm event.
3. Onsite stormwater flows would not be discharged outside the project site boundary, but would be conveyed by sheet flow and system flow (catch basins, swales, and stormwater conveyance piping) to an unlined stormwater pond on the southeast corner of the Willow Rock site.
4. **WATER-1** will require a Drainage Erosion and Sedimentation Control Plan (DESCP) to manage stormwater, risk of off-site flooding, and implement erosion and sediment-control measures in all aspects of construction and operation.
5. The Willow Rock project is located on low priority and very low priority groundwater basins related to risk of overdraft, and the project is not expected to impact the groundwater that may occur at approximately 40 feet bgs.
5. During the 5-year construction period, an estimated 1,400 acre-feet of water would be needed; 700 acre-feet to support construction activities, and 700 acre-feet to fill the compensation reservoir accounting for evaporation. During operation, although the applicant expects a positive water balance of 3.65 AFY from the efficiencies in the A-CAES process, annual consumption of AVEK delivered water is expected at 2.2 AFY for offices, maintenance facilities, service water, fire system re-filling, and make-up water for cooling and thermal system water. The project owner will comply with water use limits and reporting requirements provided in **WATER-7**.
6. **WATER-2** will ensure that the Willow Rock Energy Storage Center will comply with waste discharge requirements required by the Lahontan RWQCB.
7. **WATER-3** will ensure that all industrial wastewater will be managed and properly disposed of off-site, as well as sanitary wastewater if the project owner elects not to treat sanitary wastewater using an onsite leach-line septic system.

8. **WATER-4** will ensure that if the project owner elects to treat sanitary wastewater using an onsite leach-line septic system, a system designed for site-specific soil and percolation conditions will be installed in compliance with SWRCB's onsite wastewater treatment system (OWTS) policy.
9. **WATER-5 and WATER-6** provide for the CEC to designate the DWR-DSOD as the delegated chief building official (DCBO) for regulatory oversight and technical expertise for the design, construction, and operation of the hydrostatic compensation reservoir embankment pursuant to the California Water Code and the Dam Safety Program that DWR-DSOD administers.
10. With the implementation of Conditions of Certification **WATER 1 through WATER-7**, Willow Rock will not have a significant direct, indirect, or cumulative impact on soil and water resources.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Soil and Water Resources.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Soil and Water Resources.

7 Environmental Analysis

C. Cultural and Tribal Cultural Resources

i. Introduction

This section of the Decision focuses on the potential impacts of the Willow Rock Energy Storage Center on cultural and tribal cultural resources, particularly those that could be disturbed by excavation and construction. State law requires a lead agency to develop and implement mitigation measures to minimize potential adverse impacts to significant cultural resources. The CEC also consults with California Native American tribes pursuant to Assembly Bill 52 and the CEC Tribal Consultation Policy, to avoid and minimize damaging impacts to tribal cultural resources.

Evidence on the topic of **Cultural and Tribal Cultural Resources** is contained in Exhibits 1025, 1032-1033, 1038, 1040-1041, 1053, 1069-1070, 1079, 1090, 1131, 1154, 1155, 1233, 1234, 1317, 1323, and 2000, and in the Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be an advanced compressed air energy storage (A-CAES) system that will store power during off-peak electricity conditions by pumping compressed air into an underground cavern. The air will be held and compressed in the cavern by a column of water from a hydrostatic compensation reservoir at the ground surface. To recoup power, the compressed air will be released from the cavern. Willow Rock will be constructed on approximately 88.6 acres of private land immediately north of Dawn Road and between State Route 14 and Sierra Highway within unincorporated, southeastern Kern County, California.

The record contains detailed descriptions of the geographic and geological contexts, together with the archaeological, ethnographic and historical significance of the cultural and tribal cultural resources. The data and descriptions are summarized here. For more detailed information refer to Section 5.4 in Staff's Final Staff Assessment and Section 4.3 in Applicant's Opening Testimony.²

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20.

² Exhibit 2000, FSA, pp. 5.4-1 *et seq.* and Exhibit 1233, pp. 48 *et seq.*

1. Natural Setting

The Willow Rock Energy Storage Center is within the Fremont and Antelope valleys in the Western Mojave Desert, Kern County, California. The Mojave Desert is a desert in the rain shadow of the Sierra Nevada mountains and the Transverse Ranges in the southwestern United States.³ Native people have inhabited the area known now as California since time immemorial. During the time that humans have lived in this area, the region in which the project will be located has undergone several climatic shifts. Within the project area during the Wisconsin Glacial Stage (60,000–10,500 years before present) the regional climate patterns were influenced by massive ice sheets, which tended to block Arctic air masses resulting in cooler summer and warmer winter temperatures than the present-day Mojave Desert. Throughout the middle Holocene Epoch (~7500–4000 before present) the climate continued to become increasingly warmer and drier, impacting human subsistence and settlement patterns. During the late Holocene Epoch starting around 4000 before present, the Mojave Desert climate began to get cooler and wetter, essentially the modern climate we experience today. This resulted in a return of available resources which in turn brought more people back to the region.

The geological features and history of the region include the Gem Hill Formation composed of pyroclastic sedimentary and volcanic rock, large aquifers producing numerous springs including Willow and Bean springs, and many lakes including Lake Thompson spanning 950 square kilometers that dried up by the Holocene around 11,700 before present. The valley floor features Quaternary-age sediments overlying metamorphic bedrock.

The project area is within the Lower Sonoran Life Zone and varies in elevation from 2,543 to 2,577 feet above mean sea level (AMSL) at the project site and 2,433–2,766 feet AMSL along the preferred transmission route. The Biological Resources section of this Decision describes the plants and animals currently inhabiting the region, including western Joshua trees, creosote scrub community plants, and a diverse array of animals, many of which were likely important resources for the early inhabitants in the region.⁴

2. Native American Archaeological Setting

The chronology of Native American archaeology in this region is described as including eight cultural complexes, some of which overlap across four temporal periods:

- Pre-Clovis (hypothetical) (pre-12,000 B.P., Pleistocene)
- Paleo-Indian (Clovis) (12,000–10,000 B.P., Pleistocene)
- Lake Mojave (10,000–8000 B.P., Early Holocene)
- Pinto (8000–5000 B.P., Middle Holocene)
- Deadman Lake (7500–5000 B.P., Middle Holocene)

³ Ex. 2000, FSA, p. 5.16-1.

⁴ Ex. 2000, FSA, pp. 5.4-2—5.4-4.

- Gypsum (4000–1800 B.P., Late Holocene)
- Rose Spring (1800–900 B.P., Late Holocene)
- Late Prehistoric (900 B.P.–historic contact, Late Holocene)

Artifacts reflecting the Paleo-Indian or Clovis Complex sites in this region are marked by the appearance of fluted or stemmed projectile points generally found along shorelines of ancient pluvial lakes. Artifacts that characterize Lake Mojave sites include Great Basin Stemmed series projectile points, abundant bifaces, steep-edged unifaces, crescents, cobble-core tools, and ground stone implements, representing relatively small social units that relied on a forager-like subsistence strategy.

The Pinto Complex is the primary cultural complex associated with the Middle Holocene, and artifacts feature flaked stone technology including bifacial (flaked on two surfaces) and unifacial (flaked on one surface) core/tool forms derived from materials other than obsidian and cryptocrystalline silicate. Flaked stone material diversity decreases, indicating reduced foraging ranges, while the presence of olive (*Callianax biplicata*) shell beads indicates that desert groups interacted with coastal groups.

Primarily identified at Twentynine Palms in the Southeastern Mojave Desert, the Deadman Lake Complex appears to be a separate cultural complex from the Pinto Complex. Artifacts are characterized by small- to medium-sized contracting-stemmed or lozenge-shaped projectile points, abundant battered cobbles and core tools, as well as bifaces, simple flaked tools, and ground stone. The battered tools suggests that some kind of plant processing was a major focus at these sites.

After nearly a 1,000-year period of unfavorable environmental conditions, the return of desirable resources are related to changes in subsistence and settlement strategies, resulting in the Gypsum Complex. Gypsum sites often contain numerous bifaces, various flake tools, drills, and ground stone implements like mortars and pestles. The increased or intensified use of plant resources that began in the Pinto period continued, with mesquite being an important resource. Ritual activities became more visible in the archaeological record with an increase in rock art, crystals, and paint, and trade with other groups increased.

Rose Spring sites are most notably characterized by the switch from atlatl (darts) to bow and arrow technology. There is also a dramatic increase in the use of obsidian from the Coso Volcanic Field, indicating trade with people from there or logistical forays to collect the tool stone. These sites can include architecture such as wikiups, pit houses, and other structures. Based on the number of Rose Spring sites, population reaches its peak in the Mojave Desert during this time. However, beginning roughly in the middle of Rose Spring Complex and intensifying for hundreds of years, the lakes and other permanent water sources began drying up, taxing already stressed resources and causing shifts in human settlement patterns.

With the environment continuing to deteriorate, and people finding ways to adapt, the Late Prehistoric Complex in the Mojave Desert is drastically different from preceding complexes.

Artifacts from this time include Desert series projectile points, ceramics, ground and battered stone, incised stones, slate pendants, and shell and steatite beads. Toolstone profiles show a significant drop in obsidian use and an increase in crypto-crystalline silicate. Some major village sites with associated cemeteries do appear, suggesting more complex settlements.⁵

3. Ethnographic Setting

The applicant proposes to build and operate the Willow Rock Energy Storage Center on land traditionally affiliated with California Native Americans belonging to four ethnolinguistic groups recognized by anthropologists: the Kawaiisu, Kitanemuk, Serrano, and Tataviam.

The Kawaiisu aboriginal territory identifies the tribe's core area in the southern Sierra Nevada range in the Piute and Tehachapi Mountains, where many winter settlements were inhabited between the Mojave Desert and the San Joaquin Valley. Additionally, a more expansive territory includes mountain and desert subdivisions of the Kawaiisu. The Kawaiisu employed a hunting and gathering strategy for subsistence that relied upon the wide variety of botanical resources available to them across their varied terrain. The Kawaiisu relied on Indian ricegrass as a vital food source, two species of yucca— including the western Joshua tree and the Mojave yucca, acorns, and nuts of the bull and pinyon pines. Hunting was a vital part of the Kawaiisu substance strategy, including bighorn sheep in desert areas and deer in the Tehachapis. The Kawaiisu, like other foraging groups in California, established permanent winter villages near reliable water sources that accommodated the leaching and processing of acorns. The Kawaiisu winter house, known as *tomo kahni*, featured a 15–25-foot diameter circular base at ground-level constructed with vertical, forked willow poles that were bound at the top to create a smoke hole.

The desert rock art of the Kawaiisu exhibits close similarities to the rock art seen in other parts of the Great Basin. One notable rock art location (CA-KER-302) consisting of at least four boulders with petroglyphs on them is within the PAA for the Willow Rock Energy Storage Center gen-tie route. These ancient rock drawings are the only petroglyphs in the westernmost portion of the Mojave Desert.⁶

The principal territory traditionally claimed by the Kitanemuk are the southern Tehachapi Mountains at the southern end of the San Joaquin Valley and the southwestern most portion of the Mojave Desert. Their pre-contact population is estimated at 500–1,000 persons, based on the population size of Native American groups living in territories of similar size and character. While more is known about the Kitanemuk's range within the Tehachapi Mountains, some Kitamemuk lived in the lower desert areas of the Antelope Valley, including Willow Springs one mile north of the Willow Rock gen-tie route. Harrington's Kitanemuk informants indicated that Kitamemuk people lived at Willow Springs. Distinctive square communal tule houses were used by the Kitanemuk, which facilitated a communal living arrangement while

⁵ Ex. 2000, FSA, pp. 5.4-5—5.4-8.

⁶ Ex. 2000, FSA, pp. 5.4-8—5.4-11.

still providing individual family spaces. The Kitanemuk were assimilated into missions San Fernando Rey, San Gabriel, and San Buenaventura early in the mission period.⁷

The Serrano (from Spanish for mountaineer) were so named by the Spanish because they lived in and around the San Bernardino Mountains. Prior to the time of historic contact, the Serrano were hunters and gatherers. The Serrano were not organized on a tribal basis, but rather as patrilineal clans and autonomous political and landholding units, with bonds between clans based on marriage, ceremonial reciprocity, and participation in ritual. The accessibility of water was the determining factor in the location of Serrano villages. The structures of the villages included family houses, each with a ramada, a large ceremonial house, granaries, and sweathouses. A population estimate for the pre-contact Serrano was 1,500–2,500 people, organized in aboriginal settlements along the Mojave River containing up to 70 people situated approximately 10 miles apart along the river. Once the Mission San Gabriel established an asistencia (cattle-grazing station) in 1819 near what is today the city of Redlands, most of the Serrano were removed to the various missions. Today, some Native Americans of Serrano heritage live with other southern California Native Americans on the Morongo and San Manuel reservations.⁸

Little was identified in the record about the Tataviam. The Kitanemuk referred to the Tataviam as the “people facing the sun” because the Tataviam’s traditional territory was mostly sunny, south-facing mountain slopes. Tataviam population at the time of historic contact has been estimated at less than 1,000 persons, occupying two or three widely spaced large villages of perhaps 200 persons each with medium-sized (20–60 persons) and small (10–15 persons) villages interspersed. By the early nineteenth century, all the Tataviam had been taken into the Mission San Fernando Rey. The last speaker of the Tataviam dialect died in 1916.⁹

4. Historic Setting

The Spanish period in this region began with the permanent settlement of Spaniards and the construction of the mission and presidio in San Diego in 1769. One of the first documented examples of European contact with the natives of Antelope Valley occurred in 1776, when Father Francisco Garcés travelled through the Mojave Desert. The San Fernando Mission established in 1797 in nearby San Fernando Valley was an agricultural labor camp that disrupted native life in Antelope Valley. In 1808, Spanish military expeditions into Antelope Valley occurred, and the Spanish government and officials at the San Fernando Mission forcibly resettled native people and native communities from Antelope Valley to the mission.¹⁰

Non-native American settlers and American government entered the valley primarily because of the Gold Rush. The Old Spanish Trail was used by those from the east travelling into

⁷ Ex. 2000, FSA, pp. 5.4-11—5.4-12.

⁸ Ex. 2000, FSA, pp. 5.4-12—5.4-13.

⁹ Ex. 2000, FSA, p. 5.4-14.

¹⁰ Ex. 2000, FSA, p. 5.4-14.

Southern California as well as miners looking for gold in the Tehachapi Mountains, Fremont Valley, and Antelope Valley. The nearby Sebastian Indian Reservation, the first reservation in California, was created in 1853, partially in response to encroachment and hostilities against Native Americans from American miners. One year later, Fort Tejon was constructed by the United States Army to protect and control the Indians who were living on the Sebastian Indian Reservation. The U.S. government forcibly relocated most Kitanemuk to the reservation, ostensibly to protect them from these conflicts.¹¹

Water, the most important natural resource for both travelers and miners alike, shaped early patterns of settlement for generations. Willow Springs and other springs became important waypoints and watering stations for miners and early American settlers in the region.¹²

The first homesteading activities in the California desert took place in Antelope Valley in the early 1870s. Enabled by the Homestead Act of 1862, Antelope Valley was chosen by the initial wave of homesteaders because of its location along the edge of the desert, where aquifers lay close to the surface and water tables were high. In 1877, settlers were further incentivized to claim homesteads on what was considered unproductive marginal land with the passage of the Desert Land Act.

Southern California, and especially the Los Angeles region, experienced rapid development when the Santa Fe Railroad was completed in the early 1880s. The Homestead acts, combined with economic pressures from the real estate boom in the nearby Los Angeles area and increasingly easy travel into Antelope Valley influenced early growth patterns around Rosamond. Urbanization also led many to seek a more agrarian lifestyle, as did the homesteaders who settled in Antelope Valley. Settlers in these regions began to form farming communities to more efficiently create resilient irrigation systems. After the Wright Act of 1887, many of these communities created irrigation districts to ensure that all farmers in these communities will have access to water rights in these agricultural communities. Without abundant water resources, however, the Antelope experienced significant agricultural and residential decline in the late 1890s following multiple drought years that decimated many crops and caused most of the settlers to desert their homesteads.¹³

The creation and activation of military facilities across the Mojave Desert during World War II led to the rapid suburbanization of Rosamond and nearby towns in the early twentieth century. Edwards Air Force Base, initially established in 1942 as Muroc Army Air Base, has become the second largest U.S. Air Force base with an area of 481 square miles. By midcentury, older homesteads in the Mojave Desert began to wane as newer suburban-style

¹¹ Ex. 2000, FSA, pp. 5.4-11—5.4-15. Additionally, the Committee takes official notice of information about Fort Tejon State Historic Park published by the California Department of Parks and Recreation at https://www.parks.ca.gov/?page_id=585.

¹² Ex. 2000, FSA, pp. 5.4-14—5.4-15.

¹³ Ex. 2000, FSA, pp. 5.4-15—5.4-17.

housing began to take over desert communities. The Edwards Air Force Base further contributed to the suburban development of Antelope Valley since military personnel and civilian workers required housing.¹⁴

On November 23, 1953, the Willow Springs International Raceway opened with its inaugural race. Initially the raceway featured an oiled dirt surface, but by 1954 the main course was paved. The raceway expanded its course offerings in the 1980s when two new road courses, and both dirt and paved ovals were added. The Willow Springs International Raceway is an important part of motor sports history. After its construction, it quickly gained a reputation for being the fastest track west of the Mississippi.¹⁵

The relatively slow development of the rural areas to the west and north of Rosamond has allowed for the development of renewable energy projects in these less populated areas. In the 1980s, one of the first large scale wind farms in the country was built in the Tehachapi Mountains overlooking the valley. Several other wind and solar power facilities have been built in the last 40 years, as well as substations and transmission corridors.¹⁶

b. Regulatory Setting

Projects proposed before the CEC are reviewed to ensure that the proposed facilities will comply with all applicable laws, ordinances, regulations, and standards (LORS) (Pub. Resources Code, § 25525; Cal. Code Regs., tit. 20, §§ 1201(r), 1744(b)). See **Table 7.C-2** for the LORS applicable to the evaluation of project impacts on cultural and tribal cultural resources.

c. Methods and Project Area of Analysis

To evaluate potential impacts to cultural and tribal cultural resources, we must consider an inventory of all cultural resources in and near the Willow Rock site and gen-tie line. The record reflects Staff's meticulous inventory prepared based on background research, literature review, consultation with California Native American tribes, primary field research including pedestrian surveys, description of the results of the inventory effort, and evaluation of the significance of cultural resources and tribal cultural resources found in the project area of analysis (PAA) in consultation with the tribes.

In general, the PAA defines the geographic area in which a proposed project has the potential to affect cultural resources. Effects may be immediate, further removed in time, or cumulative. They may be physical, visual, auditory, or olfactory in character. The PAA may or may not be

¹⁴ Ex. 2000, FSA, p. 5.4-17.

¹⁵ Ex. 2000, FSA, pp. 5.4-17—5.4-18.

¹⁶ Ex. 2000, FSA, p. 5.4-18.

one uninterrupted expanse but include one or several discontinuous areas where the project could be argued to potentially affect cultural resources.

For the Willow Rock project, Staff defined the PAA as comprising (a) the proposed Willow Rock site, gen-tie line, and associated facilities, (b) an ethnographic study area, and (c) an architectural study area set one parcel beyond the proposed project site.

The proposed Willow Rock site, gen-tie line, and associated facilities include:

- Advanced Compressed Air Energy Storage (A-CAES) Energy Storage Process, Cooling Systems and Electric Transmission
 - Eight electric-motor-driven air compressors configured in four trains, totaling nominally 500 megawatts (MW) net
 - Four nominally 130-MW air-powered turbine generators with 100-foot-tall air vent stacks
 - Heat extraction and recovery main process heat exchangers
 - Thermal storage system using water, including up to six 87.5-foot-diameter by 100-foot-tall (maximum) hot-water spherical storage tanks, and 2-foot diameter, 60-foot-tall cold-water storage tanks
 - Cooling system: Three air-cooled heat exchangers with evaporative mist system using excess internally produced process water
 - One approximately 21.5-acre, 600-acre-foot capacity hydrostatically compensating surface reservoir with liner and interlocking shape floating cover
 - Aboveground piping pipe racks and filter houses
 - Underground compressed air storage cavern (~900,000 cubic yards capacity)
 - Interconnecting conduits for movement of compressed air to and from the cavern
 - Potential permanent aboveground architectural berm for onsite re-use of excavated cavern rock
 - Onsite 230-kilovolt (kV) substation with oil-filled transformers with 230/13.8 kV rating
 - One approximately 19-mile-long 230kV single-circuit double-bundle conductor generation-tie (gen-tie) line interconnecting to the Southern California Edison (SCE) Whirlwind Substation with a preferred gen-tie route and route options
 - Approximately 186 transmission poles (~0.2 acre of permanent disturbance)
- Operation and Maintenance Facilities, Ancillary Support Systems, and Other Features
 - Site stormwater drainage system and stormwater percolation/evaporation ponds
 - Water supply connection to an existing Antelope Valley East Kern Water Agency's supply pipeline adjacent to Sierra Highway east of the Willow Rock Site

- Fire detection and fire monitoring systems
- Firewater tank and fire suppression system
- Acoustic enclosures for Turbomachinery
- Weather Enclosures for Motor Control Center
- One primary all-electric and one secondary diesel-fired 345-kW (460 horsepower) emergency fire pump
- Three diesel-fired up to 2.5 MW, 4.16 kV emergency backup power supply engines to maintain critical loads in the event of a loss of power
- One combined office, control room, and maintenance building
- Employee and visitor parking area with electric vehicle charging ports and landscaping
- Primary and secondary entrances with security access gates and site perimeter fencing
- Permanent plant access roads within the Willow Rock site
- Extension/upgrades to Dawn Road between State Route 14 (SR-14) interchange and Sierra Highway
- Temporary Construction Facilities
 - Up to 122.2-acres of laydown areas including cavern construction laydown area, construction phase earthwork areas, cavern rock temporary re-use areas, cavern rock temporary backup re-use areas, and parking areas on adjacent and nearby parcels
 - Rock crushing facility and concrete batch plant to support cavern construction and excavated rock management (acreage included in total temporary disturbance)
 - Two temporary entrances for construction; the Dawn Road construction entrance may be converted to permanent
 - An estimated up to 1.5 miles of unpaved temporary access road along the gen-tie line corridor as needed (approximately 3.7 acres)
 - Approximately 35 conductor pull and tensioning sites (21.5 acres total)
 - Approximately 75-foot-by-75-foot temporary disturbance for placement of each transmission pole (approximately 23.6 acres total)

For ethnographic resources, the PAA is expanded to consider sacred sites, tribal cultural resources, traditional cultural properties (places), and larger areas such as ethnographic landscapes that can be vast and encompassing, including viewsheds that contribute to the historical significance of such historical resources.¹⁷

¹⁷ Ex. 2000, FSA, pp. 5.4-19—5.4-21.

In the rural context of the Willow Rock Energy Storage Center, the PAA for built environment resources is defined as the proposed project site, any linear facilities, and a buffer of 0.5 mile around the project site and facilities. Portions of both the preferred route of the proposed linear facilities and its alternatives venture into suburban contexts which confer a lesser buffer since a suburban landscape is less susceptible to more distant visual effects associated with gen-tie lines and other project related structures and activities. The proposed project site at the Willow Rock site is primarily undeveloped land, largely consisting of desert scrub, while related proposed linear infrastructure, lay down areas, and other proposed project elements extend to the west and southwest of the project site. The site is bounded on the east and west by SR 14 and Sierra Highway, respectively. To the east of the site, the PAA includes Sierra Highway and undeveloped parcels with desert scrub. To the west, the PAA includes SR 14/Aerospace Highway and undeveloped parcels with desert scrub. To the north, the PAA includes undeveloped parcels with desert scrub. To the south, the PAA includes Sierra Highway and undeveloped parcels with desert scrub.¹⁸

For detailed information on the methodology and results of the background research, records search by the Applicant, and literature review conducted by Staff, please consult Section 5.4 (Cultural and Tribal Cultural Resources) in the Final Staff Assessment.¹⁹

d. Consultation with California Native American Tribes

As required pursuant to Assembly Bill 52, the Governor's Executive Order B-10-11 issued on September 19, 2011, the Governor's Executive Order N-15-19, the CEC Tribal Consultation Policy, and the CEC's siting regulations, the Staff and the Siting, Transmission and Environmental Protection Division's Assistant Tribal Liaison engaged in consultation to engage in effective dialogue concerning potential impacts from the Willow Rock Energy Storage Center to cultural resources of concern to California Native American tribes.²⁰ Staff and Applicant each contacted the California Native American Heritage Commission (NAHC) for a list of Native Americans, tribes, and tribal representatives with knowledge of tribal cultural resources in or surrounding the project area, and sent letters and emails including information about the Willow Rock Energy Storage Center project and requesting information about cultural and tribal cultural resources in the study area.²¹

Staff sent letters to 21 individuals representing 14 California Native American tribes affiliated with the Willow Rock Energy Storage Center area:

- Barbareño/Ventureño Band of Mission Indians (Chumash)

¹⁸ Ex. 2000, FSA, pp. 5.4-21—5.4-22.

¹⁹ Ex. 2000, FSA, pp. 5.4-19—5.4-135.

²⁰ See CEC Tribal Consultation Policy (updated February 2024) (CEC-130-2024-001) <https://www.energy.ca.gov/publications/2024/california-energy-commission-tribal-consultation-policy>; Cal. Code Regs., tit. 20, § 1714.

²¹ Ex. 2000, FSA, 5.4-27.

- Chumash Council of Bakersfield (Chumash)
- Coastal Band of the Chumash Nation (Chumash)
- Fernandeano Tataviam Band of Mission Indians (Tataviam)
- Kern Valley Indian Community (Kawaiisu/Tubatulabal)
- Kitanemuk & Yowlumne Tejon Indians (Kitanemuk/Southern Valley Yokut)
- Morongo Band of Mission Indians (Cahuilla/Serrano)
- Northern Chumash Tribal Council (Chumash)
- Quechan Tribe of the Fort Yuma Reservation (Quechan)
- San Fernando Band of Mission Indians (Kitanemuk/Vanyume/Tataviam)
- Yuhaaviatam of the San Manuel Nation (Serrano)
- Serrano Nation of Mission Indians (Serrano)
- Tejon Indian Tribe (Kitanemuk)
- Tule River Indian Tribe (Yokut)

Staff's letters to these representatives invited consultation with the CEC on the project on the CEC's consideration of the project and the development of the Applicant's Phase II Cultural Resources Testing Plan.²²

A tribal representative for the Yuhaavitam of the San Manuel Nation (formerly the San Manuel Band of Mission Indians) indicated that the proposed project site is deemed highly culturally sensitive due to its closeness to previously recorded sites and the potential for subsurface resources, and requested government-to-government consultation with the CEC as the lead agency. The Tribal Archaeologist for the Yuhaavitam of the San Manuel stated that the proposed project is within Serrano ancestral territory and of interest to the tribe, and provided comments on the Phase II Testing Program (Phase II Plan).²³

A cultural resource representative for the Tejon Indian Tribe requested consultation with the CEC, stating that the tribe has significant concerns with the project which it was including in comments on the Phase II Plan, and wanting to confirm the continued presence of Tejon representatives during any ground disturbances.²⁴

The Chairman of the Kern Valley Indian Community, Mr. Robert Robinson, indicated that the project is within the culturally sensitive ancestral territory of the tribe and requested consultation with the CEC. The Chairman described the project area as containing buried Native American cultural materials, and requested that a tribal representative be present during any future ground disturbance.²⁵

²² Ex. 2000, FSA, pp. 5.4-27—5.4-28.

²³ Ex. 2000, FSA, p. 5.4-28.

²⁴ Ex. 2000, FSA, p. 5.4-29.

²⁵ Ex. 2000, FSA, p. 5.4-29.

The Yuhaavitam of the San Manuel Nation, Tejon Indian Tribe, Kern Valley Indian Community, and Coastal Band of Chumash Indians participated in the development of the Phase II Plan.²⁶ The Phase II archaeological testing program was carried out in consultation with the Yuhaavitam of the San Manuel Nation, Tejon Indian Tribe, Kern Valley Indian Community.²⁷

Representatives from some of the other tribes responded, respectfully declining consultation in deference to more local tribes.²⁸

e. Results of the Inventory

Based on the collective result of archival and literature research, consultation with local tribes, discussions with local governments and public interest groups, and field investigations conducted by the Applicant, Staff's inventory has led to the identification of 165 cultural resources, including 35 archaeological sites, 81 built-environment resources, and 48 isolated artifacts. Of the 35 archaeological sites, twenty-three date to the historic era, nine are Native American, and three are multi-component. Isolates include 20 Native American artifacts and 29 historic-period artifacts (predominately cans).

Of the 35 archaeological sites, four new Native American archaeological sites were identified within the Willow Rock site proper and the P1 staging area which are recommended eligible for the California Register of Historical Resources (CRHR). Twelve additional archeological sites – 9 historic and 3 Native American – were identified along the preferred or alternative gen-tie routes that are either recommended as eligible or assumed eligible due to the need for further information or analysis.²⁹

Eighty-two built environment resources were found within the PAA of the project site or one or more of the proposed Gen-Tie line routes. Of the eighty-two, five of these resources are recommended by Staff as eligible for the CRHR and therefore historical resources for the purposes of CEQA. These five are the Willow Springs International Raceway, the Rosamond Palms Motel, the Chuck Yeager house within the Prudential Mobile Home Park, the Tropico Gold Mine Historic District, and a segment of the Vincent 220 kV Transmission Line/Big Creek Hydroelectric Historic District.³⁰

Detailed descriptions of each of the resources and Staff's analysis regarding historical significance are provided in Section 5.4 (Cultural and Tribal Cultural Resources) in the Final

²⁶ Ex. 1079, Willow Rock Energy Storage Center Cultural Resources Phase II Testing Plan (June 17, 2024) (Confidential), p. ES-ii.

²⁷ Ex. 1317, Phase II Cultural Resources Testing and Evaluation (March 17, 2025) (Confidential), p. 1.

²⁸ Ex. 2000, FSA, pp. 5.4-29—5.4-30.

²⁹ Ex. 2000, FSA, pp. 5.4-33—5.4-40.

³⁰ Ex. 2000, FSA, p. 5.4-55.

Staff Assessment.³¹ Additionally, those that warrant the CEC's consideration under CEQA are discussed below.

ii. Environmental Analysis of Cultural and Tribal Cultural Resources

The evaluation of impacts from the Willow Rock project to cultural and tribal cultural resources considers potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 7.C-1**, and applicable federal, state, and local rules and regulations.

TABLE 7.C-1 Cultural And Tribal Cultural Resources³²				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Public Resources Code, section 15064.5?	☐	☒	☐	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Public Resources Code, section 15064.5?	☐	☒	☐	☐
c. Disturb human remains, including those interred outside of dedicated cemeteries?	☐	☒	☐	☐
d. Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code, section 5020.1(k), or	☐	☐	☐	☒

³¹ Ex. 2000, FSA, pp. 5.4-19—5.4-135.

³² Source: Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, cultural resources and tribal cultural resources.

TABLE 7.C-1 Cultural And Tribal Cultural Resources³²				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

a. Thresholds of Significance

Direct impacts to cultural resources are those associated with project development, construction, and operation. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources can result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic standing structures when those structures must be demolished or removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, feeling and association. New structures might also produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations.

Indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility to resources by non-project-affiliated personnel and the potential for vandalism or greater weather exposure becomes possible.

To determine whether a proposed project may have a significant effect on the environment, it is appropriate to analyze the project's potential to cause a substantial adverse change in the significance of historical or unique archaeological resources. The magnitude of an impact depends on:

- the historical resource(s) affected;

- the specific historic significance of any potentially impacted historical resource(s);
- how the historical resource(s) significance is manifested physically and perceptually;
- appraisals of those aspects of any historical resource's integrity that figure importantly in the manifestation of the resource's historical significance; and
- how much the impact will change historical resource integrity appraisals.

Title 14, California Code of Regulations, section 15064.5(b) defines a "substantial adverse change" as the "physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

CEQA provides definitions for California Native American tribes, lead agency responsibilities to consult with California Native American tribes, and tribal cultural resources. A "California Native American tribe" is a "Native American tribe in California that is on the contact list maintained by the Native American Heritage Commission (NAHC) for the purposes of Chapter 905 of the Statutes of 2004".³³ Lead agencies implementing CEQA are responsible to consult with California Native American tribes about tribal cultural resources within specific timeframes. If tribal cultural resources could be impacted by a CEQA project, lead agencies are to exhaust the consultation to points of agreement or termination.

CEQA also states that a project with an impact that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment.³⁴

b. Impact Assessment and Mitigation

1. Would the project cause a substantial adverse change in the significance of a historical resource pursuant to California Code of Regulations, title 14, section 15064.5?

A. Construction

None of the isolated artifacts are eligible for the CRHR under any criteria and no further consideration under the California Environmental Quality Act (CEQA) is necessary.

Of the 35 archaeological sites, nine were either not relocated, were confirmed to be outside the project boundary, or no longer exist. Ten archaeological sites are recommended as ineligible for listing on the CRHR and do not qualify as unique archaeological resources. Five archaeological sites are eligible for the CRHR, with another 11 being assumed eligible for this project and therefore being treated as historical resources.³⁵ For the archeological sites in the

³³ Pub. Resources Code, § 21073.

³⁴ Pub. Resources Code, § 21084.2; Ex. 2000, FSA, pp. 5.4-136—5.4-137.

³⁵ Ex. 2000, FSA, p. 5.4-131.

gen-tie route, if a route is chosen that would impact a site that is assumed eligible, additional cultural resources work will need to be conducted, including but not limited to additional survey, possible extended Phase II test excavations, and data recovery. As of the writing of this Decision, seven of the sites are in Willow Rock site and the Applicant's currently preferred alternative route for the gen-tie; the other nine will not be impacted by the project.³⁶

Conditions of Certification **CUL/TRI-3** requires the development and implementation of a Cultural and Tribal Resources Mitigation and Monitoring Plan (CTRMMP), with demonstrated support by representatives of Native American tribes who are participating in the project monitoring, that will include avoidance and minimization measures to prevent any significant impacts to these historical resources. If avoidance of eligible resources, including capping the sites, is not possible, data recovery prior to construction will be necessary to reduce impacts to those resources. These sites are considered historical resources pursuant to the Public Resources Code, section 15064.5, and potential impacts must be considered under CEQA.³⁷

The archaeological PAA has a moderate to high probability of containing buried archaeological resources, which could meet CEQA's criteria for historical resources. If such resources were damaged during construction, it would be considered significant because of the cultural loss to affiliated California Native American tribes or other local communities and the cultural and scientific data loss to all.³⁸ Conditions of Certification **CUL/TRI-1 through CUL/TRI-8** will put in place a rigorous construction monitoring program designed to reduce impacts to any historical resources of an archaeological nature to a less-than-significant level.

The 5 built environment historical resources identified above are within the PAA of the preferred and alternative gen-tie line routes. The impacts to these resources will primarily affect the resources' integrity of setting and feeling; however, only one of these resources, the Tropico Gold Mine Historic District, would suffer significantly and requires additional mitigation with the proposed gen-tie routes. To summarize the impacts on these 5 historical resources:

- The Willow Springs International Raceway is within the PAA of the preferred Gen-Tie route, and Alternative routes A, B, and C. The raceway will be approximately 0.3 mile from the nearest proposed alignment. Impacts to this resource will primarily be to the integrity of setting, however, this impact will be less than significant as it will not significantly impact the resource's ability to convey its historical significance.
- The Rosamond Palms Motel is within the PAA of Alternative Routes A and B. The motel is approximately 145 feet away from the closest portion of the proposed alignment for Alternative A. This will impact both the integrity of setting and feeling for the property; however, since the property is recommended eligible because of its architectural significance and because the potential transmission line route will not drastically alter

³⁶ Ex. 2000, FSA, pp. 5.4-131—5.4-132.

³⁷ Ex. 2000, FSA, p. 5.4-132.

³⁸ Ex. 2000, FSA, p. 5.4-138.

the setting or feeling of the area, the impacts from the potential transmission line route will be less than significant.

- The Chuck Yeager house is within the PAA of the preferred gen-tie route, and alternative routes A and B. The house is approximately 500 feet away from the nearest alignment and the transmission lines will be partially obscured by the mobile home park surrounding it. The impacts to both setting and feeling will be relatively minimal especially considering the existing impacts to these types of integrity because of the existence of the mobile home park. As such, the impacts to this resource will be less than significant.
- The Tropico Gold Mine Historic District is within the PAA of the preferred gen-tie route. The transmission line will be built entirely within the existing roadway so physical impacts to material elements of the historic district are not anticipated, however, the potential to impact the viewshed and integrity of setting and feeling of the resource, which is a character defining feature, are a concern. Together with the CTRMMP required under **CUL/TRI-3**, **CUL/TRI-9** and **CUL/TRI-10** require specific mitigation to offset any impacts to the District, including the creation of a Tropico Gold Mine Historic District History and Management Guidelines Document, and a rustic brown finish on the transmission line poles in the area of the District to lessen the visual obtrusiveness of them. The implementation of these Conditions of Certification ensure that impacts to the District will be less than significant.
- A segment of the Vincent 220 kV Transmission Line is within the PAA of all proposed gen-tie line routes. The Vincent 22 kV Transmission Line is listed as a contributing resource for the Big Creek Hydroelectric Historic District. While the transmission line will not physically impact any material elements of the resource, there will be some impacts to the resource's integrity of setting. The viewshed will be altered, however, these impacts are relatively minimal given the 224-mile length of the historic district and the addition of a transmission line in the vicinity of a portion of this transmission line does not rise to a level of significance that could interfere with the resource's ability to convey historical significance. As such, the impacts to this resource will be less than significant.³⁹

Thus, the construction impacts on historical resources will be less than significant with mitigation.

B. Operations

There are no historical resource impacts associated with operation of the Willow Rock Energy Storage Center.

³⁹ Ex. 2000, FSA, pp. 5.4-137—5.4-140.

2. Would the project cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Public Resources Code, section 15064.5?

A. Construction

Unique archaeological resources have been identified in the archaeological PAA. As noted in the discussion above, the archaeological PAA has a moderate probability of containing buried archaeological resources, which could meet CEQA's criteria for unique archaeological resources. If such resources were damaged during construction, it would be considered a significant impact because of the cultural loss to affiliated California Native American tribes or other local communities and the cultural and scientific data loss to all.⁴⁰

Conditions of Certification **CUL/TRI-1 through CUL/TRI-8** will put in place a rigorous construction monitoring program designed to reduce impacts to any unique archaeological resources to a less-than-significant level.

B. Operation

There are no unique archaeological resource impacts associated with operation of the proposed Willow Rock Energy Storage Center.⁴¹

3. Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

A. Construction

Ground disturbance associated with construction of the Willow Rock Energy Storage Center could damage human remains, with or without associated resources that meet CEQA's criteria for historical, unique archaeological, or tribal cultural resources. Inadvertent damage of human remains is a significant impact under CEQA. With the implementation of **CUL/TRI-1** through **CUL/TRI-6** any impacts to human remains would be reduced to a less than significant level. Specifically, **CUL/TRI-1** requires that Native American Monitors are part of the construction monitoring team, **CUL/TRI-4** requires a workers environmental awareness program (WEAP), and **CUL/TRI-3**, **CUL/TRI-5**, and **CUL/TRI-6** establish protocols to minimize or avoid impacts on inadvertently discovered human remains.⁴²

⁴⁰ Ex. 2000, FSA, p. 5.4-140.

⁴¹ Ex. 2000, FSA, p. 5.4-140.

⁴² Ex. 2000, FSA, p. 5.4-141.

B. Operation

There are no human remains impacts associated with operation of the Willow Rock Energy Storage Center.

4. Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code, section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

A. Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Public Resources Code, section 5020.1(k).

There are no identified tribal cultural resources that are listed or eligible for listing on the CRHR that would be impacted by construction or operation of the Willow Rock Energy Storage Center.⁴³

B. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code, section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code, section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

There are no identified tribal cultural resources that are determined to be significant that would be impacted by construction or operation of the Willow Rock Energy Storage Center.⁴⁴

c. Cumulative Impacts

This analysis addresses whether past, present, and probable future projects would produce related or cumulative impacts to cultural or tribal cultural resources. As documented above, the evidence in the record has identified several historic and Native American archaeological resources in the Willow Rock Energy Storage Center PAA, and demonstrates that any direct or indirect impacts to those resources will be mitigated to less than significant. For the reasons discussed here, the record demonstrates that with the implementation of Conditions of

⁴³ Ex. 2000, FSA, p. 5.4-141.

⁴⁴ Ex. 2000, FSA, p. 5.4-142.

Certification, any significant adverse cumulative impacts to cultural or tribal cultural resources will also be reduced to less than significant.

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects. A list and map of cumulative projects within the study area is provided in **Appendix E, Master Cumulative Projects List, Table 1** and **Figure 1**. These projects include:

- Energy Projects =11
- Residential/Housing Projects =12
- Commercial Projects =12
- Mining Projects =2

There is no evidence that impacts to cultural and tribal cultural resources from the proposed project are likely to combine with similar impacts from the list of cumulative projects. This is due to the location of these other projects from the Willow Rock Energy Storage Center, and the nature of the specific impacts at issue. Archaeological sites within the Willow Rock Energy Storage Center are eligible or assumed eligible under Criterion 4 for their data potential, so there would need to be direct ground disturbing impacts from the additional projects for there to be any cumulative effects to the data potential. Likewise, with the exception of the Tropic Gold Mine, which is both an archaeological and historic built environment resource, none of the sites are part of larger districts or identified cultural landscapes and therefore would not be cumulatively affected by these other projects. In this case, the relevant impact is to the integrity of setting and feeling which requires relatively close distance among the cultural resources, the Willow Rock Energy Storage Center, and the cumulative projects. Given the distance and nature of the projects on the list of cumulative projects, there is no evidence that any impacts on the cultural and tribal cultural resources from those projects combined with the Willow Rock Energy Storage Center's impacts will have cumulatively considerable impacts on the integrity of setting and feeling of the identified resources. To the extent there would be any type of impact combination, impacts from the Willow Rock Energy Storage Center will be further reduced with the implementation of mitigation in the Conditions of Certification for this project. As for other eligible historic built environment resources within the PAA, including the Tropic Gold Mine, cumulative impacts will likewise not rise to a significant level because of the distance and nature of projects on the cumulative projects list.⁴⁵

⁴⁵ Ex. 2000, FSA, p. 5.4-142—5.4-143.

As such, there is no evidence of cumulatively considerable impacts on these resources that will not already be reduced to less than significant by Conditions of Certification **CUL/TRI-1 through CUL/TRI-10**.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 7.C-2 demonstrates that, with implementation of Conditions of Certification **CUL/TRI-1 through CUL/TRI-10**, the Willow Rock Energy Storage Center will comply with all applicable LORS.

TABLE 7.C-2 Conformance With Applicable Lors For Cultural And Tribal Resources	
Applicable LORS	Conformance and Basis for Determination
Federal	
National Historic Preservation Act, Section 106 applies to among other things, a project, activity, or program funded in whole or in part by a federal agency, those carried out with federal financial assistance and those requiring a federal permit, license or approval that has the potential to cause adverse effect to historic properties listed on or eligible for the National Register of Historic Places. The lead federal agency must consider ways to avoid, minimize and mitigate these adverse effects and provide the Advisory Council on Historic Preservation an opportunity to comment, prior to the issuance of permits or funding of the undertaking.	Compliant. See CUL/TRI-3 through 8.
State	
Pub. Resources Code, § 5097.98, requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until they confer with the NAHC-identified MLDs to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to future disturbance.	Compliant. See CUL/TRI-3 through 7.
Pub. Resources Code, § 5097.99 prohibits the acquisition, possession, sale, or dissection with malice or wantonness of Native American remains or artifacts taken from a Native American grave or cairn.	
Health and Safety Code, § 7050.5, prohibits the disturbance or removal of human remains found outside a cemetery. It also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.	

TABLE 7.C-2 Conformance With Applicable LORS For Cultural And Tribal Resources	
Applicable LORS	Conformance and Basis for Determination
Local	
Kern County General Plan: Policy 25	
The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute heritage value to residents and visitors.	Compliant. See CUL/TRI-3 through 10.
Willow Springs Specific Plan: Cultural Resources Goal 1 Policy 1	
To preserve cultural resources contained on sensitive sites within the Willow Springs Specific Plan area.	Compliant. See CUL/TRI-3 through 10.
Abbreviations: MLD = Most Likely Descendant; NAHC = California Native American Heritage Commission	

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Cultural and Tribal Cultural Resources.

iv. Agency and Public Comment

The Final Staff Assessment (FSA) provides documentation of all the agency and public comment received on the Preliminary Staff Assessment and other communication received through tribal consultation, and of Staff's response to each comment as well as the reasoning for the manner in which the comments were addressed in the FSA.⁴⁶

There was no further comment on cultural or tribal cultural resources in the evidentiary phase of this Willow Rock Energy Storage Center proceeding.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Applicant conducted archival research and pedestrian surveys of the Willow Rock Energy Storage Center project area of analysis (PAA) to identify cultural resources and tribal cultural resources.
2. Energy Commission staff and the Applicant conducted a full cultural resource and tribal cultural resource inventory for the Willow Rock Energy Storage Center site and gen-tie preferred and alternative routes, including both archival research and field surveys of the area.

⁴⁶ Ex. 2000, FSA, pp. 5.4-144—5.4-150.

3. Of all of the historic and built environment resources identified during the Staff and Applicant research and inventory, five archaeological sites are eligible for the California Register of Historic Resources (CRHR), with another 11 being assumed eligible for this project and therefore being treated as historical resources. Seven of the sites are in the Willow Rock site proper and the Applicant's currently preferred alternative route for the gen-tie; the other nine will not be impacted by the preferred gen-tie route.
4. The CEC Staff initiated tribal consultation required by Assembly Bill 52 by sending letters requesting information about tribal cultural resources in the project area, and inviting consultation on the Willow Rock Energy Storage Center, to 21 individuals representing 14 California Native American tribes affiliated with the Willow Rock Energy Storage Center. The responses generated consultation with four tribes – the Coastal Band of Chumash Indians, Yuhaaviatam of San Manuel Nation, Tejon Indian Tribe, and Kern Valley Indian Community – on the development of the Phase II Plan and deference from the other tribes to the more local tribes choosing to participate in the ongoing consultation on the project.
5. Prior to the start of ground disturbance, the Cultural and Tribal Resource Mitigation and Monitoring Plan (CTRMMP) will be developed pursuant to **CUL/TRI-3** in coordination with the ongoing consulting tribes – Yuhaaviatam of San Manuel Nation, Tejon Indian Tribe, and Kern Valley Indian Community – and submitted for review and approval by the CPM, subject to written demonstration of support of the CTRMMP from the consulting tribes.
6. The CTRMMP will require the implementation of a research design that sets avoidance as the preferred strategy for any disturbance of all cultural or tribal cultural resources, whether previously identified or not, followed by mitigation for any unavoidable impacts to any historical resources, unique archaeological resources, or tribal cultural resources.
7. For any archeological sites in the gen-tie route, if a route is chosen that would impact a site that is assumed eligible due to lack of access during pre-certification surveys, the Conditions of Certification and CTRMMP developed pursuant to **CUL/TRI-3** and **CUL/TRI-8** require additional cultural resources work including additional surveys, possible extended Phase II test excavations, and data recovery, to be conducted prior to ground-disturbance, and avoidance or mitigation measures implemented.
8. The CTRMMP will include a description of how Native American observers or monitors will be included, the procedures to be used for selecting them, and their roles and responsibilities including monitoring of archaeological work.

9. Condition of Certification **CUL/TRI-5** requires the project owner to ensure that qualified cultural resource specialists and Native American Monitors are present for any ground disturbance associated with the construction of the project, to observe the active excavation of known cultural and tribal cultural resources, and also to respond to unidentified cultural resources encountered during ground disturbance and construction as specified.
10. Conditions of Certification **CUL/TRI-1 through CUL/TRI-8** ensure that unknown archaeological deposits will be properly identified and treated so that project related impacts thereto are reduced to insignificance.
11. Five built environment historical resources are within the PAA of the preferred and alternative gen-tie line routes. The impacts of the Willow Rock Energy site and gen-tie route will not significantly impact the integrity of the setting and feeling of four of them: the Willow Springs International Raceway, the Rosamond Palms Motel, the Chuck Yeager house within the Prudential Mobile Home Park, and a segment of the Vincent 220 kV Transmission Line/Big Creek Hydroelectric Historic District. Therefore, these four historical resources will not be significantly impacted by the Willow Rock Energy Storage Center.
12. One built environment historical resource, the Tropico Gold Mine Historic District, is within the PAA of the preferred gen-tie route, and the transmission poles and line have the potential to impact the viewshed and integrity of the setting and feeling of the resource. Impacts to this resource will be lessened below significant with specific mitigation provided in **CUL/TRI-9** and **CUL/TRI-10** requiring that the poles have a rustic brown finish near the Tropico Gold Mine Historic District and for the project owner to prepare and publish a history and management guidelines document for the District.
13. The CTRMMP will provide that the project owner will pay all curation fees for recovered artifacts and for related documentation produced during cultural and tribal cultural resource investigations conducted for the project.
14. The Willow Rock Energy Storage Center will not have any effect on any previously recorded archaeological resources that are located outside the project boundaries.
15. With the implementation of Conditions of Certification **CUL/TRI-1 through CUL/TRI-10**, there will be no construction- or operation-related significant impacts to any California Register of Historic Resources eligible historical built-environment resources qualifying as historical resources under the California Environmental Quality Act.

16. With the implementation of Conditions of Certification **CUL/TRI-1 through CUL/TRI-10**, Willow Rock will not have a significant direct, indirect, or cumulative impact on cultural or tribal cultural resources.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Cultural and Tribal Cultural Resources.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Cultural and Tribal Cultural Resources.

7 Environmental Analysis

D. Geological and Paleontological Resources

i. Introduction

This section of the Decision summarizes the Willow Rock Energy Storage Center project's potential exposure to geologic hazards as well as its potential impacts on geologic, mineralogical, and paleontological resources. The analysis includes whether the Willow Rock site and gen-tie are located in areas where geologic hazards, such as faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, or seiches, could damage project structures or injure occupants of the facility. It also evaluates whether project construction or operation could potentially result in adverse impacts on geologic or mineralogical resources in the area. Finally, the analysis examines whether paleontological resources, such as fossilized remains or trace remnants of prehistoric plants or animals, could be present at the site and, if so, whether Willow Rock's potential impacts on these resources will be adequately mitigated. It also evaluates Willow Rock's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to geological and paleontological resources.

Evidence on the topic of Geological and Paleontological Resources is contained in Exhibits 1025-1033, 1040-1041, 1046, 1051, 1053, 1060, 1112, 1135, 1155, 1192-1200, 1233-1234, 1323, 2000, and 2001, and in the Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be an advanced compressed air energy storage (A-CAES) system that will store power during off-peak electricity conditions by pumping compressed air via deep vertical shafts into an underground cavern. The injection of compressed air into the cavern will displace water upward, into the deep vertical shafts and a hydrostatic compensation reservoir. To recoup power, the compressed air will be released from the cavern.² The cool high-pressure air exiting the cavern through the shafts is reheated using the heat stored by the thermal management system and heat exchangers. The reheated compressed air is then used to drive air- expansion turbine generators, which convert the

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19—48:20 and 179:16 – 225:10.

² Ex. 2000, FSA, p. 5.16-1.

stored potential energy back into electricity for the grid. The deep vertical shafts will also be used for excavation, construction, and maintenance of the cavern.³

b. Regional and Local Geology

The Willow Rock Energy Storage Center project is in the western part of the Mojave Desert geomorphic province of California. The Mojave Desert geomorphic province contains vast desert plains with isolated mountain ranges. The Mojave Desert geomorphic province's western area is an east-west oriented wedge known as the "Mojave Block". The Garlock and San Andreas faults are the province's northwest and southwest boundaries, respectively. The project is in the Antelope Valley, a structural basin filled with hundreds to several thousand feet of Cenozoic alluvial sediment deposits. Surface deposits in the Antelope Valley are Quaternary alluvium and windblown sands. Underlying the Quaternary surficial sediments is a Mesozoic, potentially Cretaceous, quartz monzonite, a plutonic rock that primarily comprises the granitic batholith which underlies the Mojave Desert. The quartz monzonite dominated granitic batholith is the region's crystalline basement bedrock and may be 15 to 20 miles thick. In the western Rosamond Hills, approximately vertical dike swarms cut the quartz monzonite. Within the Antelope Valley, the project site is an isolated hill on the northeastern side of the Rosamond Hills, an east-west oriented trending uplifted area. The hill is comprised of exposed Mesozoic quartz monzonite. High-angle W-NW and E-NE-striking normal faults cut the Rosamond Hills.⁴

The Willow Rock site is on the northeastern part of the Rosamond Hills. The gen-tie line will span approximately 19 miles to the west-southwest, through the Rosamond Hills, into the Willow Springs area of the Antelope Valley. The geologic units within one mile of the Willow Rock site or 0.25 miles of the gen-tie line include:

- A thin 3.0 ft to 7.5 ft layer of alluvium and soil overlaying the project site.
- Quaternary deposits underlying most of the gen-tie line.
- The Tropico group, which is a series of Miocene and Pliocene volcanic, pyroclastic, and sedimentary rocks that outcrop in the Antelope Valley, with two formations briefly underlying the gen-tie line.
- Miocene Fiss fanglomerate – an alluvial fan deposit mostly composed of eroded volcanic rock – briefly underlying the gen-tie line west of the project site.
- Miocene Gem Hill formation briefly underlying the gen-tie line west of the project site, composed of mostly light-colored volcanic rocks, especially lithic tuffs.
- Mesozoic quartz monzonite underlying an eastern portion of the gen-tie line.⁵

A deep subsurface geotechnical investigation bored three core holes at the project site to assess the lithology of the A-CAES cavern target horizon. From the ground surface, the core

³ Ex. 2000, FSA, p. 5.6-1.

⁴ Ex. 2000, FSA, p. 5.6-2.

⁵ Ex. 2000, FSA, pp. 5.6-2—5.6-4.

holes drilled 3,015 ft and 3,167 ft down to elevations between 445 ft and 607 ft below mean sea level. The target horizon is nearly entirely quartz monzonite. In all three core holes, the quartz monzonite showed varying amounts of hydrothermal alteration. Hydrothermal alteration occurs when hot and mineral-rich fluids interact with rocks and minerals, changing mineral compositions, textures, and structure.⁶

At the Willow Rock site, groundwater depth is 40 ft and is anticipated to vary with seasonal hydrology and nearby groundwater pumping.⁷

1. Faulting and Seismicity

The western Mojave Block is in one of the most seismically active areas in the United States. The active NE-striking Garlock fault and NW-striking San Andreas fault bound the Mojave Block on the northwest and southwest, respectively. Faults within, bounding, and beyond the Mojave Block may produce high-magnitude earthquakes that could impact Kern County, including the project site. The project could be subject to seismic hazards of varying degrees, depending on the proximity to and length of nearby active faults, the local geologic and topographic conditions, and the magnitude of the seismic events. Seismic hazards primarily include ground rupture along fault traces, ground shaking, and possibly liquefaction induced by strong ground shaking.⁸

Under the 1972 Alquist-Priolo Earthquake Fault Zone Act, the California Geological Survey (CGS) delineates Earthquake Fault Zones to prevent the construction of buildings for human occupancy on Holocene-active faults and fault zones. Holocene-active faults are those that have ruptured in the past 11,700 years and are referred to as “active faults”. Pre-Holocene faults have not ruptured in the past 11,700 years but have evidence of rupture in the past 1.6 million years; thus, they are termed “potentially active faults”.

Under the 1990 Seismic Hazards Mapping Act, the Zones of Required Investigation are delineated to mitigate human and property losses from liquefaction and earthquake-induced landslides. There are no Zones of Required Investigation intersecting the project site. The closest Zone of Required Investigation to the project is a liquefaction hazard zone approximately seven miles south of the project site, near Lancaster, California.

According to the United States Geological Survey (USGS) Quaternary Fault and Fold Database of the United States and the CGS Fault Activity Map of California, there are no active nor potentially active faults intersecting the project site. Numerous active and potentially active faults exist within 40 miles of the project site (CDOC 2015; USGS 2017). About 8.5 miles to the southwest, the Willow Springs fault is the closest potentially active fault to the project site.

⁶ Ex. 2000, FSA, p. 5.6-4.

⁷ Ex. 2000, FSA, p. 5.6-5.

⁸ Ex. 2000, FSA, p. 5.6-5.

Several significant active faults are within 25 miles of the project site. There are comparatively minor, potentially active, unnamed faults within 40 miles of the project.⁹

The Rosamond Hills is an E-W trending uplifted area, potentially an upwarp, of Mesozoic quartz monzonite. The potentially largest fault in the Rosamond Hills is about 3,000 ft northeast of the Willow Rock site. The fault is a NW-striking, presumably SW-dipping, normal fault with about 6 miles of surface exposure. This and other faults in the Rosamond Hills do not show evidence of recent activity.¹⁰

As one of the most seismically active regions in both California and the United States, faults in the western Mojave Block have a high likelihood of producing earthquakes and intense ground shaking. Although the project site is not within an active Earthquake Fault Zone as defined by the Alquist-Priolo Act, the project site is in an area with the potential for ground shaking that may cause structural or property damage in the event of an earthquake.¹¹ The CGS's Earthquake Shaking Potential Map categorizes the project site as having medium to low shaking potential. Using the USGS Earthquake Survey Hazard Tool, results indicate a peak ground acceleration (PGA) of 0.40g, the acceleration due to gravity, and a mean earthquake magnitude of 7.09 can be expected at the project site. Using the Applied Technology Council software for the ASCE7-16 Design Standard, results indicate a PGA of 0.39g and a Richter earthquake magnitude of 7.5 can be expected at the project site. Studies relied upon by Staff and Applicant indicate that where PGA is 0.19 g to 0.50 g, minor damage can occur in underground tunnels. The studies also concluded that if a rupturing fault does not intersect an underground opening, an underground opening that is deeper than 200 ft to 300 ft would sustain little damage during an earthquake.¹²

2. Geologic and Mineral Resources of Recreational, Commercial, and Scientific Value

Production of mineral and fossil fuels resources play an important role in Kern County's economy. Major economic mineral resources include minerals used in construction or industrial applications (borax), cement production, construction aggregate products (sand and gravel), and fossil fuels (oil). The Land Use, Open Space, and Conservation Element of the Kern County General Plan includes policy goals and implementation measures that seek to preserve and protect the future availability of mineral resources without impairing the economic opportunity of petroleum, agriculture, and rangeland in Kern County. It also promotes the preservation of Kern County's historical, archeological, paleontological, cultural, and historical resources that connect residents and visitors to the past and heritage values. The Willow Springs Specific Plan contains related local goals, policies, and implementation measures for

⁹ Ex. 2000, FSA, pp. 5.6-5—5.6-6.

¹⁰ Ex. 2000, FSA, p. 5.6-6.

¹¹ Ex. 2000, FSA, pp. 5.6-6—5.6-7.

¹² Ex. 2000, FSA, p. 5.6-7.

geologic, mineral, and paleontological resources of commercial, scientific, or recreational value.

The State Mining and Geology Board (SMGB) is responsible for administration of a mineral lands inventory process termed classification designation. The California Department of Conservation (CDOC) Mineral Land Classification of Southeastern Kern County and the region surrounding the Willow Rock site and gen-tie line include mineral resource zones, mines, and prospects mapped to the north, south, and west, but do not intersect the project site and gen-tie line.

According to the USGS Mineral Resources online mapping application, one open pit mine or quarry and eight prospect pits are mapped at the project site; these mines are not active. The closest active mines to the project site are two open-pit mines that produce sand and gravel or decomposed granite, about 1.5 miles to the south.

The 1975 Surface Mining and Reclamation Act (SMARA) provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. The administering agency for SMARA for Kern County is the Kern County Planning and Natural Resources Department.

According to the CDOC Geologic Energy Management Division (CalGEM) Well Finder online mapping application, there are no energy production related wells at the project site, in the Antelope Hills, nor in Rosamond.¹³

c. Paleontological Resources

The paleontological potential of a geologic unit exposed in a project area is inferred from the abundance of fossil specimens and previously recorded fossil sites in exposures of the unit, or of similar units in similar geological settings. The paleontological potential of a geologic unit reflects the potential for yielding abundant or significant vertebrate fossils or for yielding a few significant vertebrate, invertebrate, plant, or trace fossils, or the importance of recovered evidence for proper stratigraphic interpretation, age determination of a geologic unit, paleoenvironmental and paleoclimatic reconstructions, or for understanding evolutionary processes. Determining the paleontological potential of a geologic unit helps to determine which units may require mitigation to reduce potential impacts to paleontological resources during the development of the project.

The Society of Vertebrate Paleontology (SVP) has established the following four categories of paleontological potential of geologic units: high, low, undetermined, and none. The Bureau of Land Management's Potential Fossil Yield Classification (PFYC) system considers mapped geologic units to evaluate the potential for paleontological resources and potential impacts.

¹³ Ex. 2000, FSA, pp. 5.6-7—5.6-9 and 5.6-16—5.6-18.

The PFYC system serves as preliminary guidance to determine where further evaluation of potential paleontological resources and impacts may be needed. The PFYC system uses the following categories: class 1 – very low, class 2 – low, class 3 – moderate, class 4 – high, and class 5 – very high.¹⁴

ii. Environmental Analysis of Geological and Paleontological Resources

The evaluation of environmental impacts to geological, mineral, and paleontological resources from the Willow Rock Energy Storage Center considers whether the project would cause or exacerbate an existing geological hazard causing a significant environmental impact. The evaluation also analyzed the potential impacts from potential geologic hazards on the project, including on human life, property, and grid reliability. There are potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 7.D-1**, and applicable federal, state, and local rules and regulations.

The criterion used to assess impact significance includes evaluating both whether geological hazards impact the project and whether the project causes or exacerbates existing geological hazards. Geologic hazards include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis, seiches, and others as may be dictated by site-specific conditions.

The record documents the methodology of Staff's review of regional geologic, soil, and mineral resource mapping and site-specific investigations to identify and assess geologic hazards and potential impacts on paleontological resources, unique geologic features, and mineral resources. Staff conducted a geologic and map review of the region, project-specific preliminary shallow subsurface, deep subsurface geotechnical investigations, and the applicant's interpretations of geologic hazards. Applicant's deep subsurface geotechnical investigation evaluated the suitability of the A-CAES cavern target horizon at the Willow Rock site for seismic hazards, especially fault rupture, ground failure, and seismic shaking, and evaluated the results of core hole drilling advanced to depths of 3,015 ft to 3,167 ft bgs, core logging, packer testing and geophysical logging, and structural defect and orientation analysis. Staff reviewed regional geologic mapping, a site-specific paleontological investigation, and observations from a pedestrian and windshield field survey of the Willow Rock site, to develop a baseline paleontological resources inventory of the project study area, assess the paleontological sensitivity of the project, and evaluate potential impacts on paleontological resources.¹⁵

For purposes of assessing geological hazards and consistent with CEQA Guidelines section 15126.2, this analysis summarizes existing geological hazards identified in the record and then assesses whether the project would cause or exacerbate an existing geological hazard causing

¹⁴ Ex. 2000, FSA, pp. 5.6-9—5.6-13.

¹⁵ Ex. 2000, FSA, pp. 5.6-21—5.6-22.

a significant environmental impact. As discussed below, even though the project will not exacerbate existing geological hazards or impact paleontological resources, and thus there is no significant impact under CEQA, Conditions of Certification are included to ensure the project's design, grading, and construction complies with applicable LORS to protect human life, property, and grid reliability.

TABLE 7.D-1 Geology, Paleontology, And Minerals Checklist¹⁶				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☒	☐	☐
i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
ii. Strong seismic ground shaking?	☐	☒	☐	☐
iii. Seismic-related ground failure, including liquefaction?	☐	☒	☐	☐
iv. Landslides?	☐	☒	☐	☐
b. Result in substantial soil erosion or the loss of topsoil?	☐	☒	☐	☐
c. Be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☒	☐	☐
d. Be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?*	☐	☒	☐	☐

¹⁶ Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, geology and soils and minerals. *Geology and Soils question (d) reflects the current 2022 California Building Code (Building Code), effective January 1, 2023, which is based on the International Building Code (2021).

TABLE 7.D-1 Geology, Paleontology, And Minerals Checklist¹⁶				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
e. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☒	☐
f. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐
g. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?	☐	☐	☒	☐
h. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☒	☐

a. Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

1. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?

The record establishes that the project does not intersect known active nor potentially active faults as defined by the Alquist-Priolo Earthquake Fault Zoning Act, nor are there any Zones of Required Investigation within the project site. That said, Kern County is an area of high seismic activity. The Willow Springs fault is about 8.5 miles from the project site and is the closest potentially active fault. There are at least seventeen known active and potentially active faults systems within forty miles of the project site. Many of these faults have the potential to produce high-magnitude earthquakes throughout Kern County.

Due to the distance to known and mapped active and potentially active faults, the construction, operation, and maintenance of the project will not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a fault in an earthquake hazard zone. During project construction and operation, the impacts from

rupture of a known active or potentially active fault on the project, including on human life, property, and grid reliability, will be less than significant.¹⁷

2. Strong seismic ground shaking?

Even though the project is not within a mapped active Earthquake Hazard Zone, regional earthquakes including those from the seventeen known active and potentially active faults systems within forty miles of the project may subject the project to strong seismic ground shaking that could result in structural damage and trigger other geologic hazards, such as liquefaction and landslides. Preliminary evaluations estimate that the project could anticipate peak ground accelerations of PGA of 0.40g and a mean earthquake magnitude of 7.09.

To inform the project's final design, Condition of Certification **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report will include final grading and facility design refinements to mitigate, to the extent feasible, hazards from strong seismic ground shaking.

A geotechnical evaluation of the A-CAES cavern found that the quartz monzonite bedrock is expected to be seismically stable and is based on research concluding that deep underground openings are seismically stable if a rupturing fault does not intersect the opening. **GEO-2** requires the underground structures, the cavern and vertical shafts, to be designed and constructed with appropriate civil and structural design criteria provided, including the LORS referenced in the Engineering Design Criteria in Appendix 2A of the Applicant's Supplemental AFC.¹⁸ **GEO-3** requires inspections and maintenance of the underground structures.¹⁹

During project construction and operation, compliance with **GEO-1 through GEO-3**, and **Facility Design** Conditions of Certification **GEN-1**, **CIVIL-1**, and **STRUC-1** will ensure the project's design, grading, and construction will mitigate potential impacts from strong seismic ground shaking on the project, including on human life, property, and grid, to less than significant.

3. Seismic-related ground failure, including liquefaction?

Liquefaction is a phenomenon in which saturated, cohesionless soils, such as sand, silt, and gravel, temporarily lose their strength and liquefy when subjected to dynamic forces, such as intense and prolonged ground shaking. To be susceptible to liquefaction, potentially liquefiable soils must be saturated or nearly saturated. In general, liquefaction hazards are most severe in saturated soils up to 50 feet to 60 feet bgs. The potential for liquefaction increases if

¹⁷ Ex. 2000, FSA, p. 5.6-23.

¹⁸ Ex. 1039, SAFC, Appendix 2A, pp.12—67.

¹⁹ Ex. 2000, FSA, p. 5.6-24.

groundwater levels are shallower than 60 feet bgs. Potential hazards associated with liquefaction include ground deformation and lateral spreading.

Seismic-related ground failure, including liquefaction, is a potential risk to the project. According to the CGS Seismic Hazards Program Liquefaction Zones online mapping application, the CGS has not performed liquefaction hazard mapping for the project areas. There is evidence of liquefaction potential at the Willow Rock site. National Resource Conservation Service soil mapping shows that three potentially liquefiable soil types may exist at the Willow Rock site, the architectural berm, and the temporary laydown site, including alluvium and soil and the decomposed quartz monzonite. Additionally, Quaternary alluvium and windblown deposits underlying most of the gen-tie routes make these routes susceptible to liquefaction.

Liquefaction potential also depends on groundwater levels. When the shallow subsurface geotechnical investigation was performed, the depth to groundwater at the Willow Rock site was 30 feet bgs, which is within the decomposed quartz monzonite. The highest historical groundwater levels for the Willow Rock site, architectural berm and temporary laydown, and gen-tie sites are unknown. Since groundwater elevations fluctuate, Staff conservatively assumes that elevated groundwater levels that could saturate liquefiable materials may occur at the project sites.

To inform the project's final design, **GEO-1** requires the project owner to complete and submit a geotechnical and geohazard report to the CEC for review and approval. The report will include final grading and facility design refinements to-mitigate, to the extent feasible, hazards from seismically induced ground failure, including liquefaction.²⁰

During project construction and operation, compliance with **GEO-1 through GEO-3**, and **Facility Design** Conditions of Certification **GEN-1**, **CIVIL-1**, and **STRUC-1** will ensure the project's design, grading, and construction will mitigate potential impacts from seismically induced ground failure on the project, including on human life, property, and grid, to less than significant.

4. Landslides?

A landslide, or mass wasting, is a mass of rock, soil, or debris that has been displaced downslope by sliding, flowing, or falling. The CGS Map Sheet 58: Deep-Seated Landslide Susceptibility online mapping application classifies the landslide susceptibility of areas, from 0 to 10, low to very high.

The Willow Rock Energy Storage Center site including the architectural berm and temporary laydown site are in a class 0 area. The potential impacts of landslides on the safety of people

²⁰ Ex. 2000, FSA, pp. 5.6-24—5.6-26.

or structures during construction and operation of the Willow Rock facility and temporary laydown sites will be less than significant.

An evaluation of the gen-tie line's landslide susceptibility was not performed. The gen-tie line's preferred and alternative routes include a section that runs parallel to the Mojave Tropic Road, west and northwest of Rosamond, CA. Within this section of Mojave Tropic Road, the CGS Map Sheet 58: Deep-Seated Landslide Susceptibility online mapping application classifies two areas as classes 5 to 9. The remainder of the proposed gen-tie line routes are in class 0 areas. As with the conservative assumptions for the risk of potential seismic-related ground failure discussed above, the implementation of the **GEO-1** to inform the final design of the Willow Rock site and gen-tie will reduce any potential significant impacts from landslide to less than significant.²¹

During project construction and operation, compliance with **GEO-1**, and **Facility Design** Conditions of Certification **GEN-1**, **CIVIL-1**, and **STRUC-1** will ensure the project's design, grading, and construction will mitigate potential impacts from landslides on the project, including on human life, property, and grid, to less than significant.

b. Would the project result in substantial soil erosion or the loss of topsoil?

Project construction can increase the potential for water and wind to erode soil. The impact of construction on soil resources depends on soil erodibility, construction methods, and schedule. As discussed earlier, alluvium and soil are known or interpreted at the Willow Rock site including the optional architectural berm and temporary laydown sites. Quaternary alluvium and windblown deposits, which may have a surficial soil layer, are mapped under most of the gen-tie line preferred and alternative routes.

For the project's final design, grading, construction, and operation, Condition of Certification **WATER-1** discussed in the **Soil and Water Resources** Section 7(B) requires the project owner to obtain approval from the CPM and the Lahontan Regional Water Quality Control Board of the Drainage Erosion and Sedimentation Control Plan for managing stormwater during project construction and operations. Compliance with **WATER-1** will mitigate potential impacts from substantial soil erosion or loss of topsoil to less than significant.²²

²¹ Ex. 2000, FSA, pp. 5.6-25—5.6-27.

²² Ex. 2000, FSA, p. 5.6-27.

c. Would the project be located on geologic units or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

The potential for soil settlement depends on soil thickness, soil characteristics, including stiffness modulus and compression indices, and loading. The 3.0 feet to 7.5 feet thick layer of surficial alluvium and soil at the Willow Rock site is likely susceptible to minor settlement. A shallow subsurface geotechnical investigation of the architectural berm, temporary laydown site and gen-tie's preferred and alternative routes was not performed. In its analysis, Staff assumes similar thin soil thickness under the architectural berm and temporary laydown site, and Quaternary alluvium and windblown deposits under the gen-tie routes, and conservatively assumes these soils have settlement potential.²³

For the potential for landslides, the gen-tie line's preferred and alternative routes include two areas that are categorized as moderately to highly susceptible to landslides. Additionally, the Willow Rock site will include permanent embankments for the hydrostatic compensation surface reservoir and, potentially, a permanent architectural berm to store excavated rock and soil. New permanent slopes associated with these features will be designed, graded, and constructed for slope stability, including appropriate minimum safety factors during static and seismic conditions.

These same conditions suggest that potentially liquefiable materials are known or interpreted to exist at the Willow Rock site, architectural berm and temporary laydown, and gen-tie line sites.

Subsidence is the gradual settling of the ground surface in response to the movement of material belowground. Artificial activities that may cause subsidence include removal or addition of material belowground, such as groundwater pumping, hydraulic fracturing, oil extraction, and mining. During construction of the hydrostatic compensation reservoir at the Willow Rock site, temporary and localized dewatering may be needed for excavation. Even so, during project construction and operation, potential impacts on subsidence hazards will be less than significant.²⁴

During project construction and operation, compliance with **GEO-1** and **Facility Design** Conditions of Certification **GEN-1**, **CIVIL-1**, and **STRUC-1**, will ensure the project's design, grading, and construction methods will mitigate potential impacts from, and on, soil settlement hazards, landslides, liquefaction, and subsidence to less than significant.

²³ Ex. 2000, FSA, pp. 5.6-27—5.6-28.

²⁴ Ex. 2000, FSA, pp. 5.6-27—5.6-30.

Construction of the Willow Rock project will require excavation of a hydrostatic compensation reservoir, deep vertical shafts, and a cavern. If any of these excavations and underground openings were to collapse during project construction or operation, potential settlement and subsidence impacts may occur at the surface. Compliance with Condition of Certification **GEO-2** requires the underground structures, the cavern, and vertical shafts to be designed and constructed with appropriate civil and structural design criteria provided, including the LORS referenced in the Engineering Design Criteria in Appendix 2A of the Applicant's Supplemental AFC.²⁵ **GEO-3** requires inspections and maintenance of the underground structures.

During project construction and operation, compliance with **GEO-2 and GEO-3** will ensure the project's design, excavation, and construction will mitigate potential impacts on collapse hazards to less than significant.

d. Would the project be located on expansive soil, as defined in Section 1803.5.3 of the California Building Code (2022), creating substantial direct or indirect risks to life or property?

Expansive soils swell with wetting and shrink with drying. Untreated expansive soils could damage future buildings and pavements on the project site. Expansive soils, if present, can be readily mitigated by either soil amendments or by removal and replacement with non-expansive soils, among other methods. While the soil and rock evaluated at the Willow Rock site have negligible shrink-swell potential, an investigation of the architectural berm, temporary laydown site, and gen-tie routes was not performed, so it is conservatively assumed that these soils and other deposits contain expansive soils that require mitigation.²⁶

During project construction and operation, compliance with **GEO-1** and Facility Design Conditions of Certification **GEN-1, CIVIL-1, and STRUC-1**, will ensure the project's design, grading, and construction will mitigate potential impacts from expansive soils on the project, including on human life, property, and grid reliability, to less than significant.

e. Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

During project construction, septic wastewater production will be limited to temporary toilet and sanitary facilities, which will be serviced by a third-party contractor. Septic wastewater will be disposed of offsite. No septic wastewater will be discharged at or near the project site. During project operation, septic waste from the administration and control building will be directed to an underground septic tank. The septic tank will be periodically emptied and

²⁵ Ex. 1039, SAFC, Appendix 2A, pp.12—67.

²⁶ Ex. 2000, FSA, p. 5.6-31.

trucked to an offsite approved disposal facility. Alternatively, the septic tank may dispose of wastewater via a lateral septic system.²⁷

During project construction and operation, compliance with Condition of Certification **WATER-4** discussed in the **Soil and Water Resources** section 7(B) will mitigate potential impacts from wastewater disposal and septic tanks on soils. With mitigation incorporated, the potential impacts related to septic wastewater disposal during project construction and operation will be considered less than significant.

f. Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

The thin layer of alluvium and soil at the Willow Rock site is 3 feet to 7.5 feet thick and has an undetermined paleontological potential. Underlying the soil is Mesozoic quartz monzonite, a plutonic igneous rock with no paleontological potential. Research including online paleontological collection databases, primary literature review, and field surveys did not identify any fossil localities in the PAA and confirmed that the outcrops and soils in the project area have low to no potential for paleontological sensitivity. Additionally, there are no unique geologic features mapped or identified within the site footprint.²⁸

During construction and operation of the project, implementation of Conditions of Certification **PAL-1 through PAL-8** will address the potential for the discovery of paleontological resources during excavation in native materials. With mitigation incorporated, potential impacts from construction and operation on paleontological resources will be considered less than significant.

g. Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State?

As described above, mineral and fossil fuels resources play an important role in Kern County's economy. However, mineral resource zones, mines, and prospects mapped by CDOC are north, south, and west of, but do not intersect, the Willow Rock site and gen-tie line. Further, the geologic units underlying the project site are not unique in terms of commercial, scientific, and recreational value. Thus, the impacts from project construction and operation on mineral resources of commercial, scientific, or recreational value will be considered less than significant.²⁹

²⁷ Ex. 2000, FSA, pp. 5.6-31—5.6-32.

²⁸ Ex. 2000, FSA, pp. 5.6-32—5.6-33.

²⁹ Ex. 2000, FSA, p. 5.6-34.

h. Would the project result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

According to the USGS Mineral Resources online mapping application, one open pit mine or quarry and eight prospect pits are mapped at the project site. However, the mines at the project site are not active. The sedimentary, volcanic, and plutonic rock formations underlying the project site are widespread in southeastern Kern County. The geologic units are not unique in terms of commercial, scientific, and recreational value. The impacts of project construction and operation on locally important mineral recovery sites will be considered less than significant.³⁰

i. Cumulative Impacts

As discussed above, Compliance with Conditions of Certification **GEO-1 through GEO-3, Facility Design** Conditions of Certification **GEN-1, CIVIL-1, and STRUC-1**, and **Soil and Water Resources** Condition of Certification **WATER-1**, the California Building Code and all other applicable federal, state, and local LORS, will mitigate the impacts from geologic hazards on the project, including on human life, property, and grid reliability, and the project's impacts on geologic hazards, to less than significant. With this mitigation, this project's cumulative impacts will not be considerable.

Additionally, compliance with **Soil and Water Resources** Condition of Certification **WATER-4**, and all applicable federal, state, and local LORS, will mitigate potential impacts from wastewater disposal and septic tanks on soils. With mitigation, this project's cumulative impacts will not be considerable.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 7.D-2 demonstrates that, with implementation of specific Conditions of Certification, the Willow Rock Energy Storage Center will comply with all LORS applicable to impacts to and from geological resources in the project area, and impacts to mineral and paleontological resources.

TABLE 7.D-2 Conformance With Applicable LORS ³¹	
Applicable LORS	Conformance and Basis For Determination
Federal	
The 1906 Antiquities Act federal agencies to permit the collection of objects of historic and	Compliant. Compliance with the following Conditions of Certification shall ensure the project

³⁰ Ex. 2000, FSA, pp. 5.6-34—5.6-35.

³¹ Ex. 2000, FSA, pp. 5.6-36—5.6-50.

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
scientific interest. Collected objects must be stored in a public museum. (CFR 1954)	complies with the Antiquities Act's laws and regulations. PAL-1 through PAL-8 were developed based upon the guidance provided by the SVP and Bureau of Land Management (BLM) standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. PAL-1 through PAL-8 require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.
The 1977 Federal Mine Safety and Health Act requires standards for underground metal and non-metal mines to protect life, promote health and safety, and prevent accidents. (CFR 1985)	Compliant. Compliance with GEO-1 through GEO-3, CIVIL-1, and STRUC-1 shall ensure the project complies with the Federal Mine Safety and Health Act's laws and regulations.
The Occupational Safety and Health Administration developed regulations for the construction of underground tunnels, shafts, chambers, and passageways, including compressed air projects. (CFR 2019)	Compliant. Compliance with GEO-1 through GEO-3, CIVIL-1, and STRUC-1 shall ensure the project complies with these Occupational Safety and Health Administration regulations.
The 2009 Paleontological Resources Preservation Act requires the U.S. Department of the Interior to permit collection of paleontological resources on federal lands. The U.S. Department of the Interior to owns collected paleontological resources and may transfer ownership or administration to federal or non-federal educational institutions (CFR 2025a)	Compliant. Compliance with the following Conditions of Certification shall ensure the project complies with the Paleontological Resources Preservation Act's laws and regulations. PAL-1 through PAL-8 were developed based upon the guidance provided by the SVP and Bureau of Land Management (BLM) standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. PAL-1 through PAL-8 require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.

TABLE 7.D-2 Conformance With Applicable LORS ³¹	
Applicable LORS	Conformance and Basis For Determination
The Pipeline and Hazardous Materials Safety Administration developed regulations requiring integrity management programs for underground natural gas storage facilities. (CFR 2025c)	Not applicable. The project is not an underground natural gas storage facility and is not subject to this regulation. However, this regulation informed the development of GEO-3 .
U.S. Army Corps of Engineers	
Engineering Manual 1110-1-1804: Engineering and Design, Geotechnical Investigations recommends guidance for geotechnical investigations for civil engineering projects. (USACE 2001)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this USACE guidance.
Engineering Manual 1110-2-2901: Tunnels and Shafts in Rock recommends guidance for planning, design, and construction of tunnels and shafts in rock for civil engineering projects. (USACE 1997)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this USACE guidance.
Engineering Manual 1110-1-3500: Chemical Grouting Technology recommends guidance for chemical grouting. (USACE 1995a)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this USACE guidance.
Guide Specifications for Civil Works Construction: Section 02330: Tunnel and Shaft Grouting recommends methodologies for lining excavated tunnels with grout. (USACE 1995b)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this USACE guidance.
United States Bureau of Reclamation	
Engineering Geology Field Manual, Volumes I and II , provide field-oriented geotechnical engineering guidance. (USBR 2001ab)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this USBR guidance.
State	
The 1972 Alquist-Priolo Earthquake Fault Zoning Act requires the California Geological Survey to designate Alquist-Priolo Fault Zones, which are active faults that have evidence of surface rupture in the past 11,000 years. The act mitigates against surface fault rupture of known active faults beneath occupied structures. The act requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. Portions of the site and ancillary facilities are located within designated Alquist-Priolo Fault Zones. The site layout places occupied structures outside of the 50-foot setback zone. (CPRC 2024b)	Compliant. Compliance with GEO-1, CIVIL-1, and STRUC-1 , shall ensure the project complies with the Alquist-Priolo Earthquake Fault Zoning Act's laws and regulations.

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
The 2022 California Building Code includes a series of standards that are used in project investigation, design, and construction (including seismicity, grading and erosion control). The CBC has adopted provisions in the International Building Code and has been amended by Kern County. (CBC 2022)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1, WATER-1, and WATER-4 shall ensure the project complies with the California Building Code's standards and provisions.
The 1990 Seismic Hazards Mapping Act requires the California Geological Survey to identify areas (zones) that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches. Requires a geotechnical report be prepared that defines and delineates any seismic hazard prior to approval of a project in a seismic hazard zone. (CPRC 2017)	Compliant. Compliance with GEO-1 through GEO-3, CIVIL-1, and STRUC-1, shall ensure the project complies with the Seismic Hazards Mapping Act's laws and regulations.
The 1975 Surface Mining and Reclamation Act provides a comprehensive surface mining and reclamation policy for the regulation of surface mining operations to assure that adverse environmental impacts are minimized and mined lands are reclaimed to a usable condition. (CPRC 2022)	Not applicable. The project is exempt from SMARA pursuant to PRC section 2714 (b) because onsite excavation and onsite earthmoving activities are integral and necessary for the construction of structures and will be undertaken to prepare a site for the construction of those structures, compliance with GEN-1 and CIVIL-1, the project was rezoned consistent with general plan designation of resources management and the surplus materials will not be exported until actual construction work has commenced and shall cease if construction activities have terminated or are no longer being actively pursued.
Local	
Kern County Municipal Code (2025)	
Title 17. Identifies building and construction requirements to reduce hazard potential that are applicable to all new construction, including the project.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1, WATER-1, and WATER-4 shall ensure the project complies with the Kern County Municipal Code's ordinances and standards.
Kern County General Plan (2009): Chapter 1 - Land Use, Open Space, and Conservation Element: Section 1.3 - Physical and Environmental Constraint	
Goal: To strive to prevent loss of life, reduce personal injuries, and property damage, minimize economic and social diseconomies resulting from natural disaster by directing development to areas which are not hazardous. Policy 1.3-1: Kern County will ensure that new developments will not be sited on land that is physically or environmentally constrained ((Map Code 2.1 (Seismic Hazard), Map Code 2.2	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1, WATER-1, and WATER-4 shall ensure the project complies with the goal, policies, and implementation measures in the Physical and Environmental Constraint section in the Land Use, Open Space, and Conservation Element of the Kern County General Plan.

TABLE 7.D-2 Conformance With Applicable LORS ³¹	
Applicable LORS	Conformance and Basis For Determination
(Landslide), Map Code 2.3 (Shallow Groundwater), Map Code 2.5 (Flood Hazard), Map Codes from 2.6 – 2.9, Map Code 2.10 (Nearby Waste Facility), and Map Code 2.11 (Burn Dump Hazard)) to support such development unless appropriate studies establish that such development will not result in unmitigated significant impact.	
Policy 1.3-2: In order to minimize risk to Kern County residents and their property, new development will not be permitted in hazard areas in the absence of implementing ordinances and programs. These ordinances will establish conditions, criteria, and standards for the approval of development in hazard areas.	
Policy 1.3-3: Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas.	
Policy 1.3-4: Special requirements will be applied to new housing within recently active fault zones.	
Policy 1.3-5: New residential uses in fault zones should be limited to single-family housing units.	
Policy 1.3-6: Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby, minimizing the extent of topographic alteration required and reducing soil erosion while maintaining soil stability.	
Policy 1.3-7: Ensure effective slope stability, wastewater drainage, and sewage treatments in areas with steep slopes are adequate for development.	
Implementation Measure 1.3-A: Adopt requirements and procedures in zoning, subdivision, and site development regulations and building criteria for Seismic Hazard designated areas. Include the following in these requirements and procedures: (1) The preparation of special geologic and seismic studies consistent with the requirements of the Safety Element (Chapter 4) of this General Plan.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
(2) The following specific and detailed criteria shall apply within special studies zones and shall be included in any planning program, ordinances, rules and regulations adopted by the County pursuant to said SPECIAL STUDIES ZONES ACT (PRC Division 4, Part 2). If the precise location of a fault trace cannot be established, or if a portion of an active fault trace is depicted as "inferred" on the Kern County Seismic Hazard Atlas, require a setback of 100 feet from the appropriate location depicted: (a) No structure for human occupancy, public or private, shall be permitted to be placed across the trace of an active fault. Furthermore, the area within 50 feet of an active fault shall be assumed to be underlain by active branches of that fault unless and until proven otherwise by an appropriate geologic investigation and submission of a report by a geologist registered in the State of California. This 50-foot standard is intended to represent minimum criteria only for all structures. Certain essential or critical structures, such as high-rise buildings, hospitals, and schools should be subject to more restrictive criteria at the discretion of the Board of Supervisors. (b) Application for a development permit for any project (as defined in the Public Resources Code Section 2621.6) within a special studies zone 14 shall be accompanied by a geologic report prepared by a geologist registered in the State of California and directed to the problem of potential surface fault displacement through the project site, unless such report is waived pursuant to PRC Section 2623. (c) Geologic reports shall be filed with the State Geologist. (d) A geologist registered in the State of California, within or retained by the County, must evaluate the geologic reports required herein and advise the Kern County Planning Department of the findings.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
(e) Comprehensive geologic and engineering studies should be required for any critical or essential structure as previously defined whether or not it is located within a special studies zone. (f) In accordance with Section 2625 of the Public Resources Code, each application for approval of a project within a delineated special studies zone may be charged a reasonable fee by the County. (g) As used herein, the following definitions apply: (1) A "project" includes any structure for human occupancy or new real estate development as defined under Section 2621.6 of the Public Resource Code. (2) A "structure for human occupancy" is one that is regularly, habitually, or primarily occupied by humans; excluding there from freeways, roadways, bridges, railways, airport runways, and tunnels. The excluded transportation structures should be sited and designed with due consideration to the hazard of surface faulting. Mobile homes, whose body width exceeds eight (8) feet, are considered structures for human occupancy. (3) A "new real estate development" is defined as any new development of real property which contemplates the eventual construction of "structures for human occupancy."	
Implementation Measure 1.3-B: A seismic analysis may be required for those areas in Kern County which are susceptible to landslides.	
Implementation Measure 1.3-C: Cooperate with the Kern County Water Agency to classify lands in the County overlying groundwater according to groundwater quantity and quality limitations.	
Implementation Measure 1.3-D: Review and revise the County's current Grading Ordinance as needed to ensure that its standards minimize permitted topographic alteration and soil erosion while maintaining soil stability.	

TABLE 7.D-2 Conformance With Applicable LORS³¹	
Applicable LORS	Conformance and Basis For Determination
Implementation Measure 1.3-E: Development proposed in areas with steep slopes (Map Code 2.4) will be reviewed for conformity to Chapter 19.88 Hillside Development Ordinance or Chapter 19.52 Special Planning (SP) District to ensure that appropriate soil stability, drainage, and sewage treatment will result.	
Kern County General Plan (2009): Chapter 1 - Land Use, Open Space, and Conservation Element: Section 1.9 – Resource	
Goal: To contain new development within an area large enough to meet generous projections of foreseeable need, but in locations which will not impair the economic strength derived from the petroleum, agriculture, rangeland, or mineral resources, or diminish the other amenities which exist in the County. Protect areas of important mineral, petroleum, and agricultural resource potential for future use. Ensure the development of resource areas minimize effects on neighboring resource lands.	Compliant. The project complies with the goal, policies, and implementation measures in the Resource section in the Land Use, Open Space, and Conservation Element of the Kern County General Plan.
Policy 1.8-1: Appropriate resource uses of all types will be encouraged as desirable and consistent interim uses in undeveloped portions of the County regardless of General Plan designation.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Policy 1.8-2: In areas with a resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this General Plan.	
Policy 1.8-14: Emphasize conservation and development of identified mineral deposits.	
Policy 1.8-16: Lands classified as MRZ-2, as designated by the State of California, should be protected from encroachment of incompatible land uses.	
Implementation Measure 1.8-H: Use the California Geological Survey’s latest maps to locate mineral deposits until the regional and Statewide importance mineral deposits map has been completed, as required by the Surface Mining and Reclamation Act.	
Implementation Measure 1.8-K: Protect oilfields and mineral extraction areas through the use of appropriate implementing zone districts: A (Exclusive Agriculture), DI (Drilling Island), NR (Natural Resource), or PE (Petroleum Extraction).	
Kern County General Plan (2009): Chapter 1 - Land Use, Open Space, and Conservation Element: Section 1.10.3 – Archaeological, Paleontological, Cultural, and Historical Preservation	
Policy 1.10-25: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.	Compliant. Compliance with the following Conditions of Certification shall satisfy the policy and implementation measures in the Archeological, Paleontological, Cultural, and Historical Preservation section in the Land Use, Open Space, and Conservation Element of the Kern County General Plan.
Implementation Measure 1.10-K: Coordinate with the California State University, Bakersfield’s Archaeology Inventory Center.	
Implementation Measure 1.10-L: The County shall address archaeological and historical resources for discretionary projects in accordance with the California Environmental Quality Act (CEQA).	
	PAL-1 through PAL-8 were developed based upon the guidance provided by the SVP and Bureau of Land Management (BLM) standards to ensure that, if present, paleontological resources

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Implementation Measure 1.10-M: In areas of known paleontological resources, the County should address the preservation of these resources where feasible.	would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. PAL-1 through PAL-8 require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.
Kern County General Plan (2009): Chapter 4 – Safety Element: Section 4.2 – General Policies and Implementation Measure, Which Apply to More Than One Safety Constraint	
Policy 4.2-1: That the County’s program of identification, mapping, and evaluating the geologic, fire, flood safety hazard areas, and significant concentrations of hydrogen sulfide in oilfield areas, presently under way by various County departments, be continued.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1 and WATER-1 shall ensure the project complies with the policies and implementation measures in the General Policies and Implementation Measure, Which Apply to More Than One Safety Constraint section in the Safety Element of the Kern County General Plan.
Policy 4.2-3: That the County government encourage public support of local, State, and federal research programs on geologic, fire, flood hazards, valley fever, plague, and other studies so that acceptable risk may be continually reevaluated and kept current with contemporary values.	
Policy 4.2-4: The County shall encourage extra precautions be taken for the design of significant lifeline installations, such as highways, utilities, and petrochemical pipelines.	
Policy 4.2-5: The adopted Kern County, California Multi-Hazard Mitigation Plan is incorporated by reference. This multi-jurisdictional plan, approved in compliance with the Disaster Mitigation Act of 2000, provides long-term planning to reduce the impacts of future disasters.	
Implementation Measure 4.2-A: All hazards (geologic, fire, and flood) should be considered whenever a Planning Commission or Board of Supervisor’s action could involve the establishment of a land use activity susceptible to such hazards.	
Implementation Measure 4.2-B: The Safety Element should be reviewed and comprehensively revised every five years, or whenever substantially new scientific evidence becomes available.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Implementation Measure 4.2-C: Require detailed site studies for ground shaking characteristics, liquefaction potential, dam failure inundation, flooding potential, and fault rupture potential as background to the design process for critical facilities under County discretionary approval.	
Implementation Measure 4.2-D: Require seismic review prior to major addition, renovation, or increase in occupancy of buildings.	
Implementation Measure 4.2-F: The adopted multi-jurisdictional Kern County, California Multi-Hazard Mitigation Plan, as approved by FEMA, shall be used as a source document for preparation of environmental documents pursuant to CEQA, evaluation of project proposals, formulation of potential mitigation, and identification of specific actions that could, if implemented, mitigate impacts from future disasters and other threats to public safety.	
Kern County General Plan (2009): Chapter 4 – Safety Element: Section 4.3 – Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure	
Policy 4.3-1: The County shall require development for human occupancy to be placed in a location away from an active earthquake fault in order to minimize safety concerns.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the policy and implementation measures in the Seismically Induced Surface Rupture, Ground Shaking, and Ground Failure section in the Safety Element of the Kern County General Plan.
Implementation Measure 4.3-B: Require geological and soils engineering investigations in identified significant geologic hazard areas in accordance with the Kern County Code of Building Regulations.	
Implementation Measure 4.2-C: The fault zones designated in the Kern County Seismic Hazard Atlas should be considered significant geologic hazard areas. Proper precautions should be instituted to reduce seismic hazard, whenever possible in accordance with State and County regulations.	
Implementation Measure 4.2-D: Detailed geologic investigations shall be conducted in conformance with guidelines of the California Geological Survey for all discretionary permits and construction designed for human occupancy in an Alquist-Priolo Earthquake Fault Zone.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Implementation Measure 4.2-G: Route major lifeline components such as highways, utilities, petroleum or chemical pipelines around areas of high groundwater whenever possible. Where they must cross an area of high groundwater, plans, and permits shall require design features to accommodate extensive ground rupture without prolonged disruption of an essential service or threat to health and safety.	
Implementation Measure 4.3-H: Require that plans and permits for installation of major lifeline components such as highways, utilities, petroleum or chemical pipelines to incorporate design features to accommodate potential fault movement in areas of active faults without prolonged disruption of essential service or threat to health and safety.	
Implementation Measure 4.3-I: Design significant lifeline installations, such as highways, utilities, and petrochemical pipelines which cross an active fault, to accommodate potential fault movement without prolonged disruption of essential service or creating threat to health and safety.	
Implementation Measure 4.3-K: Encourage and support local, State, and federal research programs for delineation of geologic and seismic hazards so that acceptable risk may be continually re-evaluated and kept current with state-of-the-art information and contemporary values.	
Implementation Measure 4.3-L: Require seismic review prior to major addition, renovation, or increase in occupancy of buildings.	
Kern County General Plan (2009): Chapter 4 – Safety Element: Section 4.5 – Landslides, Subsidence, Seiche, and Liquefaction	
Policy 4.5-1: Determine the liquefaction potential at sites in areas of shallow groundwater (Map Code 2.3) prior to discretionary development and determine specific mitigation to be incorporated into the foundation design, as necessary, to prevent or reduce damage from liquefaction in an earthquake.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1, and WATER-1 shall ensure the project complies with the policies and implementation measures in the Landslides, Subsidence, Seiche, and Liquefaction section in the Safety Element of the Kern County General Plan.

TABLE 7.D-2 Conformance With Applicable LORS ³¹	
Applicable LORS	Conformance and Basis For Determination
Policy 4.5-2: Route major lifeline installations around potential areas of liquefaction or otherwise protect them against significant damage from liquefaction in an earthquake.	
Policy 4.5-3: Reduce potential for exposure of residential, commercial, and industrial development to hazards of landslide, land subsidence, liquefaction, and erosion.	
Implementation Measure 4.5-B: Require liquefaction investigations in all areas of high groundwater potential and appropriate foundation design to mitigate potential damage to buildings on sites with liquefaction potential.	
Implementation Measure 4.5-C: Develop and maintain maps, at an appropriate scale, showing the location of all geologic hazards, including active faults, Alquist-Priolo Earthquake Fault Zones, 100-year flood hazard boundary, the extent of projected dam failure inundation and time arcs, depth of inundation, land subsidence, slope failure and earthquake-induced landslides, high groundwater, and liquefaction potential.	
Implementation Measure 4.5-D: Discretionary actions will be required to address and mitigate impacts from inundation, land subsidence, landslides, high groundwater areas, liquefaction and seismic events through the CEQA process.	
Willow Springs Specific Plan (2008): Resource	
Goal 3: Encourage retention of productive agricultural and dormant mineral resources by imposing a restriction on allowing urban type land uses on nearby adjacent lands.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the goal, policy, and mitigation/implementation measures in the Resource element of the Willow Springs Specific Plan.
Policy 2: Require review of discretionary projects in those areas designated for Resource use by the appropriate agency to determine potential resource loss.	
Mitigation/Implementation Measure 1: Amendments to the plan within areas presently designated Map Code 8.4, which allow uses other than mineral production, may be permitted upon certification by a State of California certified geologist or mining engineer that significant mineral deposits are not present, and the proposed use would not hinder potential development of any adjacent mineral resources.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Mitigation/Implementation Measure 5: All grading and landform modifications shall be conducted in conformance with state-of-the-practice design and construction parameters. Typical standard minimum guidelines are set forth in Chapter 70 of the Uniform Building Code. All graded slopes shall be constructed so that the entire slope is stable.	
Mitigation/Implementation Measure 7: Remedial grading shall be required within the southern half of Section 35, T9N, R14W, SBB&M, to remove and recompact the upper approximate four feet of native materials which are subject to collapse/hydroconsolidation.	
Mitigation/Implementation Measure 8: Prior to grading permit issuance, evaluation of the collapse/hydroconsolidation potential and other engineering parameters of the various alluvial and lacustrine sediments and to provide appropriate remedial grading recommendations, a comprehensive geotechnical investigation, including exploratory drilling/trenching, sampling, and laboratory testing shall be required. Page 10 of Appendix B of the Environmental Impact Report provides recommended remedial measures that may be considered on an individual project basis.	
Mitigation/Implementation Measure 10: Due to the potential of radioactivity associated with possible uranium-bearing alluvial deposits to affect inhabitants in the eastern portion of the project area, a complete evaluation shall be required on an individual project basis prior to grading permit issuance.	
Mitigation/Implementation Measure 11: Remedial grading and removal shall be performed on the sites which consist of erodible and collapsible soils prior to site development.	
Mitigation/Implementation Measure 12: As the lateral and vertical extent of expansive and corrosive Mojave, Pond-Oban, Rosamond, and Sunrise series soils are not accurately known, geotechnical studies by qualified civil engineering firms shall be performed prior to final design and construction of proposed developments.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Mitigation/Implementation Measure 13: To minimize expansive soil conditions, complete avoidance or engineering design for correction of adverse conditions shall be required prior to building permit issuance on an individual project basis. Contained in Appendix B of the Environmental Impact Report "Soils and Geology Report" on page 12, provisions are recommended as remedial measures to lessen adverse conditions.	
Willow Springs Specific Plan (2008): Seismic/Safety Element	
Goal 1: To promote a safe and healthful living environment.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, STRUC-1, and WATER-1 shall ensure the project complies with the goals, policies, and mitigation/implementation measures in the Seismic/Safety element of the Willow Springs Specific Plan.
Goal 2: Reduce the potential for property damage and injury by requiring development standards that adequately mitigate these environmental constraints where feasible to do so.	
Goal 3: Protect human life and health.	
Goal 6: Minimize prolonged business interruptions.	
Goal 12: To reduce economic and social disruption resulting from earthquakes and various other geological hazards by assuring the continuity of vital services and functions.	
Goal 13: To create an awareness in the population of the Specific Plan Update area of areas of possible earthquake damage.	
Goal 14: To preserve from development those areas having steep slope so as to protect the natural landscape from loss of vegetative cover and subsequent erosion and sedimentation.	
Goal 15: To protect community residents from undue hazards and costs associated with road maintenance, slope instability, improper drainage, and inadequate sewage treatment.	
Policy 2: Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby minimizing the extent of topographic alteration required.	
Policy 3: Development proposed in areas with steep slopes will be reviewed for conformity to the adopted Hillside Development Ordinance to ensure that appropriate soil stability, drainage, and sewage treatment will result in a satisfactory manner.	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
Policy 4: Compliance with site-specific issues, goals, policies, and implementation measures contained in the Seismic/Safety Element of the Kern County General Plan.	
Policy 8: The residents of the plan area shall be made aware, through this document, of the relative earthquake hazards associated with living in the various portions of the plan area.	
Policy 9: All new construction in the plan area shall comply with Chapter 23 of the Uniform Building Code (UBC), which includes building pad and foundation design standards for structures in UBC Seismic Zone IV.	
Policy 10: No new Map Codes 5.1 or 5.2 designations will be permitted for property having a Map Code 2.1 constraint overlay unless an approved, site-specific geologic report indicates that no fault hazard exists.	
Policy 11: Construction of dwellings or other structures shall not be allowed on slopes of over 30 percent, except as provided by the Kern County Zoning Ordinance.	
Mitigation/Implementation Measure 1: Application for discretionary projects within areas designated Map Code 2.1 shall be subject to requirements of the current Kern County Zoning Ordinance.	
Mitigation/Implementation Measure 16: All areas designated with the physical constraint overlay Map Code 2.1 shall permit development only in accordance with the Kern County Safety Element.	
Mitigation/Implementation Measure 17: All developments on slopes 30 percent or less and designated Map Code 2.4 are required to be developed in accordance with requirements of the Kern County Zoning Ordinance and the Open Space and Conservation Element of this Specific Plan.	
Mitigation/Implementation Measure 18: Any projects identified with problems relating to shallow groundwater or landslide prone are required to be evaluated in a report and certified in writing by a qualified professional (in the field). The report shall be submitted to the Department of Planning and Development Services for review and approval.	

TABLE 7.D-2 Conformance With Applicable LORS ³¹	
Applicable LORS	Conformance and Basis For Determination
Mitigation/Implementation Measure 19: All final map subdivisions are required to prepare a geologic hazards analysis to determine what mitigation measures may be necessary to ensure the project is suitable for its intended use.	
Mitigation/Implementation Measure 25: Soils on graded slopes shall be strengthened by planting to reduce the potential of erosion. During the interim period before the ground cover takes hold, straw, wood chips, and plastic (visqueen) shall be used as stabilizing agents.	
Willow Springs Specific Plan (2008): Open Space/Conservation Element	
Mitigation/Implementation Measure 1: Grading shall be restricted to slopes of less than 30 percent.	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the mitigation/implementation measure in the Open Space/Conservation Element of the Willow Springs Specific Plan.
Professional Standards	
American Concrete Institute	
ACI 506.2-13: Specification for Shotcrete recommends standards for shotcrete application. (ACI 2014)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this ACI standard.
ACI PRC-506-22: Shotcrete-Guide , is a guide for shotcrete construction. (ACI 2022)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this ACI standard.
ASTM International	
ASTM International published ASTM 4879-08: Standard Guide for Geotechnical Mapping of Large Underground Openings in Rock to recommend standards for characterizing and documenting rock surface conditions in large civil or mining excavations. Note, ASTM International withdrew this standard in 2017 and did not replace it. (ASTM 2017)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this ASTM International standard.
ASTM International published ASTM F432-19: Standard Specification for Roof and Rock Bolts and Accessories to recommend standards for chemical, mechanical, and dimensional requirements for roof and rock bolts and accessories. This standard was most recently updated in 2020. (ASTM 2020)	Compliant. Compliance with GEO-1 through GEO-3, GEN-1, CIVIL-1, and STRUC-1 shall ensure the project complies with the relevant and appropriate components of this ASTM International standard.
Society for Vertebrate Paleontology (2010)	

TABLE 7.D-2 Conformance With Applicable LORS³¹

Applicable LORS	Conformance and Basis For Determination
The Society for Vertebrate Paleontology (SVP) published Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources to recommend a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 and revised in 2010 following adoption of the Paleontological Resources Preservation Act (PRPA) of 2009. The SVP impact mitigation guidelines establish criteria for identifying and assessing significant paleontological resources. Additionally, these guidelines include standards and procedures to be employed prior to site disturbance, monitoring during disturbance, and preservation/mitigation of identified resources.	Compliant. Compliance with the following Conditions of Certification shall ensure compliance with Society for Vertebrate Paleontology standards. PAL-1 through PAL-8 were developed based upon the guidance provided by the SVP and Bureau of Land Management (BLM) standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. PAL-1 through PAL-8 require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Geological and Paleontological Resources.

iv. Agency and Public Comment

At the Evidentiary Hearing, beyond the written and oral testimony provided by Applicant at the Evidentiary Hearing regarding geotechnical investigations and the geological characteristics of the Willow Rock Energy Storage Center site and gen-tie routes and considered in the discussion above, there was no further agency or public comment on **Geological or Paleontological Resources** in the evidentiary proceeding.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Willow Rock Energy Storage Center project and linear facilities will be located in Antelope Valley in the western part of the Mojave Desert geomorphic province of California known as the "Mojave Block".
2. Surface deposits in the Antelope Valley are Quaternary alluvium and windblown sands. Underlying the Quaternary surficial sediments is a Mesozoic, potentially Cretaceous, quartz monzonite, a plutonic rock that primarily comprises granitic batholith which

underlies the Mojave Desert.

3. The project owner conducted a deep subsurface geotechnical investigation including the boring of three core holes at the project site to assess the lithology of the A-CAES cavern target horizon. From the ground surface, the core holes drilled 3,015 ft and 3,167 ft down to elevations between 445 ft and 607 ft below mean sea level.
4. According to the United States Geological Survey (USGS) Quaternary Fault and Fold Database of the United States and the CGS Fault Activity Map of California, there are no active nor potentially active faults intersecting the project site, however numerous active and potentially active faults exist within 40 miles of the project site.
5. Although the project site is not within an active Earthquake Fault Zone as defined by the Alquist-Priolo Act, the project site is in an area with the potential for ground shaking that may cause structural or property damage in the event of an earthquake.
6. The potential for and mitigation of the effects of strong seismic shaking during an earthquake, liquefaction, landslides, subsidence must be addressed in a project-specific geotechnical and geohazard report, as required by the most current version of the California Building Standards Code (California Code of Regulation title 24) and by Condition of Certification GEO-1 and the Facility Design Conditions of Certification GEN-1, CIVIL-1, and STRUC-1.
7. The California Department of Conservation (CDOC) Mineral Land Classification of Southeastern Kern County and the region surrounding the Willow Rock site and gen-tie line include mineral resource zones, mines, and prospects mapped to the north, south, and west, but do not intersect the project site and gen-tie line.
8. There are no fossil localities in the PAA, and the outcrops and soils in the project area have low to no potential for paleontological sensitivity.
9. The potential for collapse associated with the excavation of the hydrostatic compensation reservoir, deep vertical shafts, and a cavern will be mitigated by compliance with Condition of Certification **GEO-2** which requires the underground structures, the cavern, and vertical shafts to be designed and constructed with specific civil and structural design criteria and the LORS referenced in the Engineering Design Criteria in Appendix 2A of the Applicant's Supplemental AFC.
10. Compliance with Condition of Certification **GEO-3** requires inspections and maintenance of the underground structures that will mitigate against any risk of collapse during operations of the project to less than significant.

11. Conditions of Certification **PAL-1 through PAL-8** require the project owner to employ a qualified paleontological resource specialist and paleontological resource monitors to develop and implement a monitoring and mitigation plan for construction and earthwork activities and a worker education program.
12. Conditions of Certification **PAL-1 through PAL-8** will mitigate any potential direct, indirect, or cumulative paleontological resource impacts to a less than significant level.
13. During project construction and operation, compliance with Condition of Certification **WATER-4** discussed in the **Soil and Water Resources** section 7(B) will mitigate potential impacts from wastewater, septic wastewater disposal, and septic tanks on soils to a less than significant level.
14. Compliance with Conditions of Certification **GEO-1 through GEO-3, Facility Design Conditions of Certification GEN-1, CIVIL-1, and STRUC-1, and Soil and Water Resources** Condition of Certification **WATER-1**, the California Building Code and all other applicable federal, state, and local LORS, will mitigate the impacts from geologic hazards on the project, including on human life, property, and grid reliability, and the project's impacts on geologic hazards, to less than significant. With this mitigation, this project's cumulative impacts will not be considerable.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Geological and Paleontological Resources.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Geological and Paleontological Resources, and will mitigate the impacts from geologic hazards on the project, including on human life, property, and grid reliability to less than significant.

8 Local Impact Assessment

A. Land Use, Agriculture, and Forestry

i. Introduction

This **Land Use, Agriculture, and Forestry** analysis addresses the Willow Rock Energy Storage Center's compatibility with existing or reasonably foreseeable land uses; consistency with applicable laws, ordinances, regulations, and standards (LORS); and potential project related direct, indirect, and cumulative environmental effects.

Evidence on the topic of **Land Use, Agriculture, and Forestry** is contained in Exhibits 1004, 1025, 1032-1034, 1039-1041, 1053, 1058-1059, 1074, 1111, 1138, 1155, 1233, 1323, 2000, and 2001 and in the Reporter's Transcript of the Evidentiary Hearing.¹ The Committee also hereby takes official notice, pursuant to California Code of Regulations, title 20, section 1212(b)(1)(B) of public records of Kern County cited by the Applicant in its opening brief, specifically: 1) Attachment LU-1 Kern County Planning and Natural Resources Department Staff Report, Amendment of Zoning Map 213, Case No. 66, February 11, 2025; and 2) Attachment LU-2 County of Kern – Board of Supervisors, Summary of Proceedings, Regular Meeting, February 11, 2025, Item CA-6, Request of Gem A-CAES LLC by Victor Grille for a change in zone classification from Limited Agriculture to Exclusive Agriculture on an approximate 108.5-acre parcel located on the north side of Dawn Road.

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be a 520-megawatt (MW) gross facility that would use advanced compressed air energy storage technology. The Willow Rock site is in the unincorporated area of Kern County, approximately four miles north of the community of Rosamond, on the western portion of Assessor's Parcel Number (APN) 431-022-13. The property is an approximately 112-acre undeveloped site bounded on the north and west by vacant, undeveloped property, on the east by Sierra Highway, and on the south by Dawn Road. Additional parcels adjacent to the Willow Rock site on the north and west sides may be used for project activities including temporary parking, construction laydown, or construction of an optional architectural berm. See **Figure 8.A-1** for a depiction of these parcels. The area surrounding the project site is mostly undeveloped, with a few sparsely scattered residences, the closest one being approximately 0.8 miles northwest of the Willow Rock site.

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20.

A new approximately 19-mile-long generation tie (gen-tie) line would connect the Willow Rock site to the Southern California Edison (SCE) Whirlwind Substation at the intersection of 170th Street West and Rosamond Boulevard, southwest of the Willow Rock site. Energy stored at the Willow Rock site would be delivered to the SCE Whirlwind Substation via this gen-tie line. The applicant has proposed eight gen-tie route options that would either be within County-designated roadway easements or would cross existing roadways, privately owned vacant lands, or lands managed by the federal Bureau of Land Management.²

b. Existing Setting

Maps from the California Department of Conservation (CDOC) show that there is no Important Farmland in the project area. Most of the land in the project area is categorized as “Other Land”, specifically “Nonagricultural or Natural Vegetation” defined as “heavily wooded, rocky/barren areas, riparian and wetland areas, grassland areas which do not qualify as Grazing Land due to their size or land management restrictions.” There are very few active Williamson Act contracts, which preserve agricultural land, in the project area. There are a few parcels under a Williamson Act contract south of the gen-tie line along Rosamond Boulevard, and one just west of the Whirlwind Substation with which the gen-tie line connects, but project construction and operation would not cross any of these parcels. See **Figure 8.A-2** for CDOC land use classifications and the location of Williamson Act parcels.³

A privately-owned, public use airport, Rosamond Skypark, is approximately 3.75 miles southwest of the Willow Rock site at 4000 Knox Avenue in Rosamond, and a portion of the proposed gen-tie line passes along Mojave-Tropico Road approximately 0.9 miles west of the nearest runway at the airport. This portion of the gen-tie line is within safety zones of Rosamond Skypark called Zone B2 and Zone C, as designated by the Kern County Airport Land Use Compatibility Plan (ALUCP). See **Figure 8.A-3** for details.

The project site is within military special use airspace areas, and within 4,000 feet of a military installation, Edwards Air Force Base (EAFB). The closest boundary of EAFB is approximately 0.5 miles east of the proposed Willow Rock site, although most of EAFB’s facilities and runways are 14 miles east of the project.⁴

c. Regulatory Setting

Projects proposed before the California Energy Commission (CEC) are reviewed to ensure that the proposed facilities will comply with all applicable laws, ordinances, regulations, and standards (LORS) (Pub. Resources Code, § 25525; Cal. Code Regs., tit. 20, §§ 1201(r),

² Ex. 2000, FSA, p. 5.8-1.

³ Ex. 2000, FSA, p. 5.1-3.

⁴ Ex. 2000, FSA, p. 5.1-3.

1744(b)). See **Table 8.A-2** for the LORS applicable to the evaluation of project impacts on land use, agriculture, and forestry.

ii. Environmental Analysis of Land Use, Agriculture, and Forestry

The evaluation of impacts from the Willow Rock project to land use, agriculture and forestry considers potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 8.A-1**, and applicable federal, state, and local rules and regulations.

The thresholds of significance applied to this analysis follow the provisions in CEQA (Pub. Resources Code, §§ 21000 *et. seq.*), and the CEQA Guidelines (Cal. Code Regs., tit. 14, §§ 15000 *et. seq.*). In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the CDOC as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection (CAL FIRE) regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board (CARB). There are no other applicable methodologies or thresholds of significance applicable to this project.⁵

TABLE 8.A-1 Land Use, Agriculture, And Forestry⁶				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Physically divide an established community?	☐	☐	☐	☒
b. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐
c. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on	☐	☐	☐	☒

⁵ Ex. 2000, FSA, p. 5.8-7.

⁶ Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, Land Use and Planning and Agriculture and Forestry Resources.

TABLE 8.A-1 Land Use, Agriculture, And Forestry⁶

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				
d. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☒	☐
e. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))?	☐	☐	☐	☒
f. Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
g. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

a. Would the project physically divide an established community?

1. Construction

Construction activities would not physically divide an established community. Construction activities, including development and use of temporary parking and laydown areas, the optional architectural berm construction, and construction of the project would occur on a maximum of 24 parcels, with 23 of these parcels, including the project parcel, adjacent to one another. The remaining parcel is west of the project across SR-14 and would be used for temporary laydown and parking. These parcels do not serve as links between communities or parts of a community.

Construction of gen-tie lines would often occur along or across roads, including SR-14, but Condition of Certification **TRANS-1** will ensure that road access is maintained. As

discussed below in Section 8(B) **Traffic and Transportation, TRANS-1** will require the project owner to submit and implement a Construction Traffic Management Plan addressing any road or lane closures, maintenance of emergency access, and access to nearby residential and commercial properties, and ensure that construction activities will not block pedestrian, bicycle, transit, or vehicular movement.⁷

For these reasons, construction activities will not physically divide an established community, and there will be no impact.

2. Operation

The permanent, operational project structures will not physically divide an existing community. The power plant and potential architectural berm will occupy vacant parcels that do not serve as a link between communities or parts of a community. The off-site gen-tie line will mainly parallel roadways such as Dawn Road, Mojave Tropico Road, and Rosamond Boulevard and will not obstruct any roadways, sidewalks, or bikeways.⁸ Thus, there will be no impact.

b. Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

1. Construction

The parcels proposed for temporary laydown and parking during construction are adjacent to or near the main project site and zoned Limited Agriculture and General Commercial. In the Kern County Planning and Natural Resources Department's comment letters on the project, Kern County does not indicate any General Plan or Zoning Code inconsistencies resulting from the temporary laydown and parking areas. To ensure that the offsite Villa Haines temporary laydown and parking areas are consistent with Kern County's regulations, Condition of Certification **LAND-1** will require the project owner to obtain any necessary permits from the Kern County Planning and Natural Resources Department, or other relevant departments, for development of temporary laydown and parking areas within the Villa Haines site, and to comply with the applicable Kern County regulations. **LAND-1** also requires, per the request of the Kern County Planning and Natural Resources Department, that the project owner provide them with the location of all properties in unincorporated Kern County accepting excavated rock from the project.

During construction, temporary concrete batch plants and rock crushing facilities will be used at the project site, which was recently rezoned by the Kern County Board of Supervisors to Exclusive Agriculture, as shown on **Figure 8.A-4**. If not for the CEC's jurisdiction over the

⁷ Ex. 2000, FSA, p. 5.8-8.

⁸ Ex. 2000, FSA, p. 5.8-9.

project, these uses would be allowed by Kern County with a Conditional Use Permit (CUP) in the Exclusive Agriculture zoning district under Section 19.12.030G of the Kern County Zoning Code as “concrete or asphalt batch plant” and “rock, gravel, sand, concrete, aggregate, or soils crushing, processing, or distribution”. As discussed below, we find that the Willow Rock project will meet Kern County’s required CUP findings for approval and will therefore be consistent with Kern County’s permitting requirements. To ensure that the temporary rock crushing facilities and concrete batch plants will comply with the Kern County Zoning Code, **LAND-2** requires the project owner to submit construction site plans to the Kern County Planning and Natural Resources Department for review and comment.⁹

We find that implementation of **LAND-1** and **LAND-2** will ensure project conformance with Kern County’s regulations. Therefore, there will be less than significant environmental impacts from project construction due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

2. Operations

There are no identified impacts resulting from project operations possibly conflicting with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, as discussed below. In regard to Public Resources Code, section 25519.5, the Department of Defense (DOD) has not provided any comments on the project.¹⁰ With no evidence in the record to suggest otherwise, we find the project to be compatible with nearby military facility plans and operations.

c. Consistency with land use plans, policies, or regulations potentially implicated by the construction or operation of the project.

For completeness, we consider each of the land use plans, policies, or regulations that could be implicated by the construction or operation of the project:

Bureau of Land Management (BLM) Right of Way (ROW) Grant Requirement. The preferred gen-tie line route crosses two federally owned parcels (APN 252-060-04 and APN 252-080-02) managed by BLM, and therefore the applicant must obtain BLM permission in the form of a ROW grant for building on these parcels. BLM received the Applicant’s grant application form on August 28, 2024. **LAND-3** will ensure that the project owner obtains the ROW grant or similar authorization from BLM before proceeding with construction, that the project will conform with BLM regulations and plans, and that no impacts from conflicts with BLM-managed public lands will occur.¹¹

⁹ Ex. 2000, FSA, pp. 5.8-9—5.8-10.

¹⁰ Ex. 2000, FSA, p. 5.8-12.

¹¹ Ex. 2000, FSA, p. 5.8-12.

Code of Federal Regulations (CFR), Title 14, Part 77.9(b). These regulations provide requirements for when an applicant must notify the Federal Aviation Administration (FAA) of any proposed construction or alteration of structures near an airport. The public use airport nearest to the project is Rosamond Skypark. Because the project is approximately 18,400 feet northeast of the closest edge of Rosamond Skypark's nearest runway, any project structures exceeding 184 feet in height, relative to the airport's elevation, will require FAA notification. Based on the higher elevation of the Willow Rock site relative to the airport, the planned structures of the facility and transmission poles that will measure approximately 100 feet in height will require notification to the FAA. The FAA has determined that none of the project's transmission poles will result in airspace obstruction hazards and requires the project owner notify the FAA within five days after each pole reaches its greatest height. **LAND-4** will require the project owner to submit notifications to the FAA for the structures and transmission poles, in compliance with CFR, Title 14, Part 77.9(b).¹²

Public Resources Code, section 25519.5. This provision of the Warren-Alquist Act requires an applicant to notify DOD if a proposed project site is within 1,000 feet of a military installation, within military special use airspace, or beneath a military low-level flight path. The Applicant submitted its project notification package on May 23, 2024, and the DOD has not provided any comment in response.¹³ Therefore, there is no evidence that the project is not in conformance with military plans and operations.

Kern County General Plan (Kern County 2009). Kern County's General Plan includes policies for the Resource Management 8.5 designation for the Willow Rock site, including safe and orderly energy development, and the development of alternative sources of energy while protecting the environment. In a report to its Planning Commission, Kern County staff stated that the Willow Rock Energy Storage Center is compatible with the General Plan land use designation of 8.5 Resource Management.¹⁴

Kern County Zoning Ordinance (Kern County 2022). The proposed gen-tie line passes through a variety of base zoning designations and their zoning overlays, including the general base zoning designations of: Estate, Exclusive Agriculture, Limited Agriculture, General Commercial, Neighborhood Commercial, Light Industrial, Open space, Low Density Residential, Platted lands, and Recreation forestry. The record establishes that the gen-tie line is permitted under all these zoning designations as transmission lines and supporting infrastructure.

With the rezoning of the main Willow Rock site from Limited Agriculture to Exclusive Agriculture on February 11, 2025, as recommended by the Kern County Planning and Natural Resources Department and approved by the Board of Supervisors to make the zoning district compatible with the project's General Plan land use designation of 8.5 Resource Management

¹² Ex. 2000, FSA, pp. 5.8-12—5.8-13.

¹³ Ex. 2000, FSA, p. 5.8-13.

¹⁴ Ex. 2000, FSA, pp. 5.8-13—5.8-14.

which supports energy storage, and with the approval of a CUP, the project would be compatible with the Exclusive Agriculture zoning district. After review of the record and the requirements for findings for an issuance of a CUP, we find:

- The Willow Rock Energy Storage Center is consistent with the goals and policies of the General Plan, and the transmission poles in the Rosamond Specific Plan and Willow Springs Specific Plan areas do not conflict with any specific plan policies.
- The project, a new advanced compressed air energy storage technology, will provide supplemental power to the grid without using fossil fuels or emitting greenhouse gases. Thus, the project is consistent with the General Plan Resource Management policies supporting safe and orderly energy development, demonstration projects, and alternative sources of energy.
- Uses in the Exclusive Agriculture designation are “limited primarily to agricultural uses and other activities compatible with agricultural uses”. The Willow Rock site is not Important Farmland and there are no agricultural uses on or near the property. In supporting the rezone of the site to Exclusive Agriculture in order to support the Willow Rock Energy Storage Center, the County has deemed the proposed alternative energy use of the site as consistent and compatible with the purpose of the applicable district. Additionally, the Exclusive Agriculture zoning district allows “electrical power generating plants”, the listed use closest to the Willow Rock Energy Center use, with approval of a CUP.
- During construction, concrete batch plants and temporary rock crushing facilities will be used at the project site. For non-CEC projects, these uses are allowed with a County-issued CUP in the Exclusive Agriculture zoning district under Section 19.12.030(G) of the Kern County Zoning Code as “concrete or asphalt batch plant” and “rock, gravel, sand, concrete, aggregate, or soils crushing, processing, or distribution”.
- Project review by the Kern County Planning and Natural Resources Department, as required by **LAND-2**, will ensure that the project will meet the required setbacks for the Exclusive Agriculture zoning district which are: 55, 70, or 80 feet for the front yard setback depending on the type of road; 5 or 10 feet for the side yard setback, depending on the type of road; and 5 feet for the rear yard setback.
- A potential architectural berm would be on the north and west sides of the project on parcels zoned Limited Agriculture. (See **Figure 8.A-4.**) The Limited Agriculture zoning district does not address architectural berm land uses. However, the Kern County Planning and Natural Resources Department has stated that they do not support the architectural berm, comprised of excavated materials from the project site, due to flood and potential drainage issues. With the removal of the proposed architectural berm, the proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity, nor will the project generate any significant nuisances or hazards. Alternatively, if the Applicant elects to construct the architectural berm, it will need to obtain review and comment from Kern County Planning and Natural Resources Department as required by **LAND-2** to ensure that the project design will mitigate flood and drainage issues.

- With approval of the hydrostatic compensation reservoir berm design by the DWR-DSOD) (as required by Conditions of Certification **WATER-5** and **WATER-6**), the proposed use will not be detrimental to the health, safety, and welfare of the public or to the property and residents in the vicinity of the Willow Rock Energy Storage Center.¹⁵

Based on the above discussion of CUP findings, we find that the project will meet the required CUP findings for location in the Exclusive Agriculture zoning district. **LAND-2** will further ensure project compliance with the Kern County Zoning Code through review and comment on all project site plans, including those in the Limited Agriculture zoning district, by the Kern County Planning and Natural Resources Development Department.

Kern County Airport Land Use Compatibility Plan (Kern County 2012). A portion of the proposed gen-tie line passes along Mojave-Tropico Road approximately 0.9 miles west of the nearest runway at the airport. This portion of the gen-tie line is within safety zones of Rosamond Skypark called Zone B2 and Zone C, as designated by the Kern County ALUCP. The transmission infrastructure would not be a hazard to flight unless it was sufficiently tall to obstruct airspace, and the FAA has determined that none of the project's transmission poles will result in airspace obstruction hazards. The FAA issued Determinations of No Hazard for each pole, with a requirement that the project owner notify the FAA within five days after each pole reaches its greatest height. **LAND-4** will ensure the project owner complies with this requirement and submits new FAA notifications for any new or relocated transmission poles, and for the project itself. **LAND-4** will also ensure compliance with the same notification requirement in the ALUCP.

ALUCP Policy Section 3.3 will apply to the gen-tie line in Zone B2 and may require an aviation easement dedicated to Kern County in the name of Rosamond Skypark to provide the right-of-flight, restrict the height of structures, and allow access for marking structures in accordance with FAA regulations if necessary. **LAND-2** will ensure project compliance with this condition.¹⁶

Rosamond Specific Plan (Kern County 2010). Portions of the preferred transmission line and alternative route options are within the boundaries of the Rosamond Specific Plan. Specific requirements include compliance with the land use plans discussed above, including consistency with the ALUCP, compliance with Part 77 regulations governing notification to the FAA, and submittal of site plans for discretionary projects to the County and Edwards Air Force Base if necessary. **LAND-2** will ensure that the requirements of the Rosamond Specific Plan will be met.¹⁷

Willow Springs Specific Plan (Kern County 2008). Although portions of the preferred gen-tie line route and alternative gen-tie route options are within the boundaries of the Willow

¹⁵ Ex. 2000, FSA, pp. 5.8-14—5.8-17.

¹⁶ Ex. 2000, FSA, p. 5.8-17—5.8-18.

¹⁷ Ex. 2000, FSA, p. 5.8-18.

Springs Specific Plan, there are no policies in the Willow Springs Specific Plan that apply to the project.¹⁸

d. Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Maps from CDOC's Farmland Mapping and Monitoring show that there is no Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) in the project area (DOC 2022a). Thus, the project, including its proposed gen-tie lines, will not cross any Farmland, and there will be no impacts to Farmland during construction or operation.¹⁹

e. Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

The Exclusive Agriculture zoning designation for the main Willow Rock site allows the project as an "electrical power generating plant" with the approval of a CUP. As discussed above, the project is consistent with these required CUP findings and therefore does not conflict with the existing zoning for agricultural use. In all zoning designations, including the Limited Agriculture and Exclusive Agriculture zoning designations, transmission lines and associated infrastructure in the gen-tie routes are an allowed use.

The proposed uses of the Limited Agriculture zoning districts do not necessarily conflict with the allowable uses, however the designation does not address the construction of the proposed architectural berm. As provided above, if the Applicant elects to construct the architectural berm, it will need to obtain review and comment from Kern County Planning and Natural Resources Department as required by **LAND-2** to ensure that the project design will mitigate flood and drainage issues articulated by the County in the administrative record of this proceeding.²⁰

As discussed above, the project construction and operation will not cross any parcels subject to a Williamson Act contract.²¹

We find that implementation of **LAND-2** will lessen any significant impacts from the Willow Rock Energy Storage Center due to any conflicts with agricultural zoning, and that the project will not conflict with any Williamson Act contracts.

¹⁸ Ex. 2000, FSA, p. 5.8-19.

¹⁹ Ex. 2000, FSA, pp. 5.8-19—5.8-20.

²⁰ Ex. 2000, FSA, pp. 5.8-20—5.8-21.

²¹ Ex. 2000, FSA, p. 5.1-3.

- e. Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code, section 12220(g)), timberland (as defined by Public Resources Code, section 4526), or timberland zoned Timberland Production (as defined by Government Code, section 51104(g))?**

The main project site and its offsite components are not on or near forest land, timberland, or timberland zoned Timberland Production.²²

- f. Would the project result in the loss of forest land or conversion of forest land to non-forest use?**

The main project site and its offsite components are not on or near forest land.²³

- g. Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?**

Construction of the project will not induce growth or cause any other changes in the existing environment which could result in conversion of Farmland to non-agricultural use. There is no forest land in the area or Farmland in the immediate area.²⁴

h. Cumulative Impacts

In its opening testimony, Staff considered whether there could be cumulative impacts to the Rosamond Skypark in the form of obstruction hazards to aircraft. The list and map of cumulative projects in the study area provided in **Appendix E, Master Cumulative Projects List, Table 1** and **Figure 1** include 21 projects within 20,000 feet of the runway of the airport. If any of these projects, which are under Kern County's jurisdiction, will require FAA notification under Part 77, Kern County will ensure the applicants' compliance and will also consider other nearby potential aviation hazards.²⁵ This will ensure no significant cumulative impacts from the project and other projects' high structures.

Similarly, it is expected that DOD would consider cumulative project impacts in its review of Willow Rock Energy Storage Center, since all projects under military airspace must notify DOD. The DOD has made no comments on this project. Absent information to the contrary, the project will not present any cumulative impacts to military facility plans and operations.

²² Ex. 2000, FSA, p. 5.8-21.

²³ Ex. 2000, FSA, p. 5.8-21.

²⁴ Ex. 2000, FSA, pp. 5.8-21—5.8-22.

²⁵ Ex. 2000, FSA, pp. 5.8-22—5.8-23.

In sum, the record does not contain any evidence that there will be cumulative impacts from the Willow Rock Energy Storage Center to land use, agriculture, or forestry.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 8.A-2 demonstrates that, with implementation of Conditions of Certification **LAND-1 through LAND-10**, the Willow Rock Energy Storage Center will comply with all applicable LORS.

TABLE 8.A-2 Conformance With Applicable LORS²⁶	
Applicable LORS	Conformance and Basis For Determination
Federal	
BLM ROW Grant Requirement. The preferred gen-tie line route crosses two federally owned parcels (APN 252-060-04 and APN 252-080-02) managed by BLM (ESHD 2024h). A ROW grant is needed for construction of a project on BLM-managed public land. The project applicant must file an "Application for Transportation and Utility Systems and Facilities on Federal Lands" (SF-299 Form) (ESHD 2024h).	Compliant. On August 28, 2024, BLM received the applicant's "Application for Transportation and Utility Systems and Facilities on Federal Lands" (WSP 2024y). LAND-3 will ensure the project obtains a BLM ROW grant or similar authorization before moving forward.
Code of Federal Regulations (CFR), Title 14, Part 77.9(b). These regulations provide requirements for when an applicant must notify the FAA of proposed construction of new structures near an airport. The main project site and many of the transmission poles require FAA notification.	Compliant. The applicant notified the FAA of the transmission poles by submitting Form FAA 7460-1, "Notice of Proposed Construction or Alteration", for each structure. The FAA issued Determinations of No Hazard for each pole, with a requirement that the project owner notify the FAA within 5 days after each pole reaches its greatest height. Condition of Certification LAND-4 will ensure the project owner complies with this requirement and submits FAA notifications for any new or relocated transmission poles. LAND-4 will also ensure the project owner submits FAA notification for the approximately 100-foot-tall structures on the main project site.
State	
Public Resources Code section 25519.5. This provision requires the applicant to notify DOD of the project due to its location within military special use airspace. Any comments provided by DOD about potential impacts to military operations must be submitted to the Energy Commission.	Compliant. On May 23, 2024, the applicant submitted a project notification package to DOD's Military Aviation and Installation Assurance Siting Clearinghouse for an informal review (WSP 2024j). The DOD has made no comments on the project.

²⁶ Ex. 2000, FSA, pp. 5.8-24—5.8-28.

TABLE 8.A-2 Conformance With Applicable LORS ²⁶	
Applicable LORS	Conformance and Basis For Determination
Local	
Kern County General Plan	
The General Plan land use designation for the Willow Rock site is 8.5 Resource Management. The General Plan's goals and policies for the broader category of Resource areas, which includes the land use designation 8.5 Resource Management, and which support the proposed project, are: Resource Goal 4: Encourage safe and orderly energy development within the County, including research and demonstration projects, and... become actively involved in the decision[s] and actions of other agencies as they affect energy development in Kern County. Resource Goal 6: Encourage alternative sources of energy, such as solar and wind energy, while protecting the environment. Resource Policy 16: The County will encourage development of alternative energy sources by tailoring its Zoning and Subdivision Ordinances and building standards to reflect Alternative Energy Guidelines published by the California State Energy Commission.	Compliant. The project is consistent with the above General Plan Resource policies supporting safe and orderly energy development, demonstration projects, and alternative sources of energy. The project, a new advanced compressed air energy storage technology, will provide supplemental power to the grid without using fossil fuels or emitting greenhouse gases (ESHD 2024i). Furthermore, in a report to the Planning Commission, Kern County staff stated that the project is compatible with the General Plan land use designation of 8.5 Resource Management (Kern County 2024a).
Kern County Zoning Code (Kern County 2022)	
Construction	
Temporary laydown and parking areas: The parcels proposed for temporary laydown and temporary parking during construction are mostly adjacent to the main project site and zoned Limited Agriculture and General Commercial.	Compliant. There are no references to temporary laydown or temporary parking uses in the Kern County Zoning Code for the Limited Agriculture zoning district or the General Commercial zoning district. In the Kern County Planning and Natural Resources Department's comment letters on the project, Kern County does not indicate any General Plan or Zoning Code inconsistencies resulting from the temporary laydown and parking areas (KCPNRD 2023a; KCPNRD 2024r). To ensure that temporary laydown and parking areas are consistent with Kern County's regulations, Condition of Certification LAND-1 requires the project owner to obtain any necessary permits, or pay fees and obtain review and comment, from the Kern County Planning and Natural Resources Department, or other relevant departments, for development of temporary laydown and parking areas, and to comply with all

TABLE 8.A-2 Conformance With Applicable LORS²⁶

Applicable LORS	Conformance and Basis For Determination
	applicable Kern County regulations. LAND-1 also requires, per the request of the Kern County Planning and Natural Resources Department (KCPNRD 2024r), that the project owner provide them with the location of all properties in unincorporated Kern County accepting excavated rock from the project, and that the project owner obtain the applicable appropriate permits.
Temporary concrete batch plants and rock crushing facilities: During construction, these would be used at the project site, which is zoned Exclusive Agriculture (ESHD 2024i).	Compliant. These uses will be allowed with a CUP in the Exclusive Agriculture zoning district under Section 19.12.030G of the Kern County Zoning Code as “concrete or asphalt batch plant” and “rock, gravel, sand, concrete, aggregate, or soils crushing, processing, or distribution” (Kern County 2022). The record in the proceeding, together with the implementation of all Conditions of Certification, demonstrate that the project can meet the required CUP findings. Implementation of LAND-2 , which involves Kern County review and approval of construction site plans, will further ensure consistency.
Operation	
Gen-tie: The proposed gen-tie line passes through a variety of base zoning designations and their zoning overlays, including the general base zoning designations of: Estate, Exclusive Agriculture, Limited Agriculture, General Commercial, Neighborhood Commercial, Light Industrial, Open space, Low Density Residential, Platted lands, and Recreation forestry.	Compliant. The gen-tie line is permitted under all these zoning designations as transmission lines and supporting infrastructure (Kern County 2022, Sections 19.16.020D, 19.12.020D, 19.14.020D, 19.32.020D, 19.36.020G, 19.44.020C, 19.18.020E, 19.53.020D, and 19.42.020D) (ESHD 2024h).
Architectural berm: A potential architectural berm will be on the north and west sides of the project on parcels zoned Limited Agriculture.	Compliant, with removal of architectural berm from project. The Limited Agriculture zoning district does not address architectural berms. However, the Kern County Planning and Natural Resources Department has stated that they do not support the potential architectural berm, comprised of excavated materials from the project site, due to flood and potential drainage issues. Should the project owner elect to construct the berm, LAND-2 requires review and comment from the Kern County Planning and Natural Resources Department to ensure that potential flooding and drainage is addressed.
Main Project Site: The Kern County Board of Supervisors recently rezoned the main project parcel from Limited Agriculture to Exclusive Agriculture, making the zoning designation of the site consistent with the General Plan designation of	Compliant. The Exclusive Agriculture zoning district allows “electrical power generating plants”, the listed use closest to the Willow Rock Energy Storage Center use, with approval of a CUP (Kern County 2022, Section 19.12.030G). CEC staff

TABLE 8.A-2 Conformance With Applicable LORS²⁶

Applicable LORS	Conformance and Basis For Determination
the site (ESHD 2024h; Kern County 2024a; Kern County 2025).	determined that the project meets Kern County's requirements for findings for issuance of a CUP (Kern County 2022, Section 19.104.040). LAND-2 will require review and comment on the project's site plans by the Kern County Planning and Natural Resources Department, and will ensure consistency with the Kern County Zoning Code.
Section 19.08.160 requires military review and approval for structures over 100 feet within the military flight area.	Compliant. The project structures will not exceed 100 feet in height and will not require military review per this regulation. However, military review is required per State regulations (discussed earlier). On May 23, 2024, the applicant submitted a project notification package to DOD's Military Aviation and Installation Assurance Siting Clearinghouse for an informal review (WSP 2024j). The DOD has not provided any comments on the project. Thus, operation of the project is deemed to be compatible with nearby military facility plans and operations.
County of Kern Airport Land Use Compatibility Plan (Kern County 2012)	
A portion of the proposed gen-tie line passes along Mojave-Tropico Road approximately 0.9 miles west of the nearest runway at the Rosamond Skypark airport. This portion of the gen-tie line is within safety zones of Rosamond Skypark called Zone B2 and Zone C, as designated by the Kern County ALUCP (ESHD 2024h; ESHD 2024j; Kern County 2012). Policy Section 3.3 will apply to the gen-tie line in Zone B2 and indicates that an aviation easement dedicated to Kern County in the name of Rosamond Skypark may be needed.	Compliant. The project is consistent with the uses allowed in Zones B2 and C. LAND-2 will ensure project compliance with the ALUCP. It requires the project owner to develop a site plan and submit it to the Kern County Planning and Natural Resources Department for comment to ensure the project incorporates any conditions recommended by the Kern County ALUC.
Section 3.3.4 of the ALUCP discusses the need for FAA notification for certain structures.	Compliant. As discussed earlier, the applicant notified the FAA of the transmission structures by submitting Form FAA 7460-1, "Notice of Proposed Construction or Alteration", for each transmission pole. The FAA issued Determinations of No Hazard for each pole, with a requirement that the project owner notify the FAA within 5 days after each pole reaches its greatest height. LAND-4 will ensure the project owner complies with this requirement and submits new FAA notifications for any new or relocated transmission poles, and for the project itself.
Section 4.17.3 of the ALUCP discusses circumstances of project notification of Edwards Airforce Base (Kern County 2012).	Compliant. As discussed earlier, on May 23, 2024, the applicant submitted a project notification package to DOD's Military Aviation and Installation

TABLE 8.A-2 Conformance With Applicable LORS²⁶

Applicable LORS	Conformance and Basis For Determination
	Assurance Siting Clearinghouse for an informal review (WSP 2024j), in accordance with Public Resources Code section 25519.5, due to the project's location within military special use airspace (OPR 2025a; OPR 2025b). The DOD has made no comments on the project and absent information to the contrary, the project is deemed to conform with nearby military facility plans and operations.
Rosamond Specific Plan (Kern County 2010)	
Page 33 Implementation Measures: All discretionary actions noted in Section 1.6.1 of the adopted Airport Land Use Compatibility Plan (ALUCP) shall be reviewed for consistency with the ALUCP prior to any action by the County. Proposed discretionary projects within the Edwards Flight Test Center Area of Influence shall be forwarded to that agency for comment prior to action by the County. Compliance with Federal Aviation Administration Part 77 regulations will be ensured during the review of discretionary development projects.	Compliant. (1) The project appears to be consistent with the ALUCP. LAND-2 will ensure project compliance with any conditions recommended by the ALUC. It requires the project owner to develop a site plan and submit it to the Kern County Planning and Natural Resources Department for comment to ensure compliance with any conditions related to the ALUCP. (2) On May 23, 2024, the applicant submitted a project notification package to DOD's Military Aviation and Installation Assurance Siting Clearinghouse for an informal review (WSP 2024j), in accordance with Public Resources Code section 25519.5, due to the project's location within military special use airspace (OPR 2025a; OPR 2025b). The DOD has made no comments and absent information to the contrary, the project is deemed to conform with nearby military facility plans and operations. (3) The applicant notified the FAA of the project's transmission structures by submitting Form FAA 7460-1, "Notice of Proposed Construction or Alteration", for each transmission pole. The FAA issued Determinations of No Hazard for each pole, with a requirement that the project owner notify the FAA within 5 days after each pole reaches its greatest height. LAND-4 will ensure that the project owner complies with this requirement and submits FAA notifications for any new or relocated transmission poles, and for the project itself.

The evidence indicates, and we find, that with the imposition and implementation of the **Land Use** Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Land Use, Agriculture, and Forestry.

iv. Agency and Public Comment

The Final Staff Assessment (FSA) addresses the agency comment received from Kern County on the Preliminary Staff Assessment.²⁷ At the Evidentiary Hearing, the Director of the Kern County Planning and Natural Resources Department affirmed that the Final Staff Assessment included the conditions requested by the County, and represented to the Committee that the Kern County Board of Supervisors supports the project.²⁸

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Willow Rock Energy Storage Center will not result in conversion of farmland to non-agricultural uses.
2. The Willow Rock Energy Storage Center project area is not subject to a Williamson Act contract.
3. The Willow Rock Energy Storage Center will not physically divide or disrupt an established community.
4. With removal of the architectural berm, the Willow Rock Energy Storage Center will not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.
5. Alternatively, if the Applicant elects to construct the architectural berm, it will need to obtain review and comment from Kern County Planning and Natural Resources Department as required by **LAND-2** to ensure that the project design will mitigate flood and drainage issues.
6. The Willow Rock Energy Storage Center is consistent with the goals and policies of the Kern County General Plan and Rosamond Specific Plan.
7. The uses and activities of the Willow Rock Energy Storage Center are consistent with the Exclusive Agriculture and Limited Agriculture zoning districts, including the concrete batch plants and temporary rock crushing facilities that may be permitted with a CUP.
8. The Willow Rock Energy Storage Center will not conflict with the Kern County Airport Land Use Compatibility Plan.

²⁷ TN 262870 (Kern County Board of Supervisors Comments – Kern County Conditional Position of Support).

²⁸ 8/2/2025 RT p. 53:20-25.

9. The proposed use will comply with all required setbacks and height limits required by all applicable land use plans and policies.
10. The proposed use will not be materially detrimental to the health, safety, and welfare of the public or to property and residents in the vicinity.
11. The Willow Rock Energy Storage Center would require a conditional use permit (CUP) from Kern County but for the exclusive licensing jurisdiction of the CEC.
12. Substantial evidence in the record in this proceeding establishes that, with the implementation of all Conditions of Certification including **LAND-1 through LAND-4**, each of the findings required by the Kern County for a CUP for the Willow Rock Energy Storage Center can be made.
13. The Willow Rock Energy Storage Center will not contribute to a significant cumulative impact to land use inconsistencies within the area surrounding the project site.
14. With the implementation of Conditions of Certification **LAND-1 through LAND-4**, Willow Rock will not have a significant direct, indirect, or cumulative impact on land use, agriculture, or forestry.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Land Use, Agriculture, and Forestry.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Land Use, Agriculture, and Forestry.

Figure 8.A-1

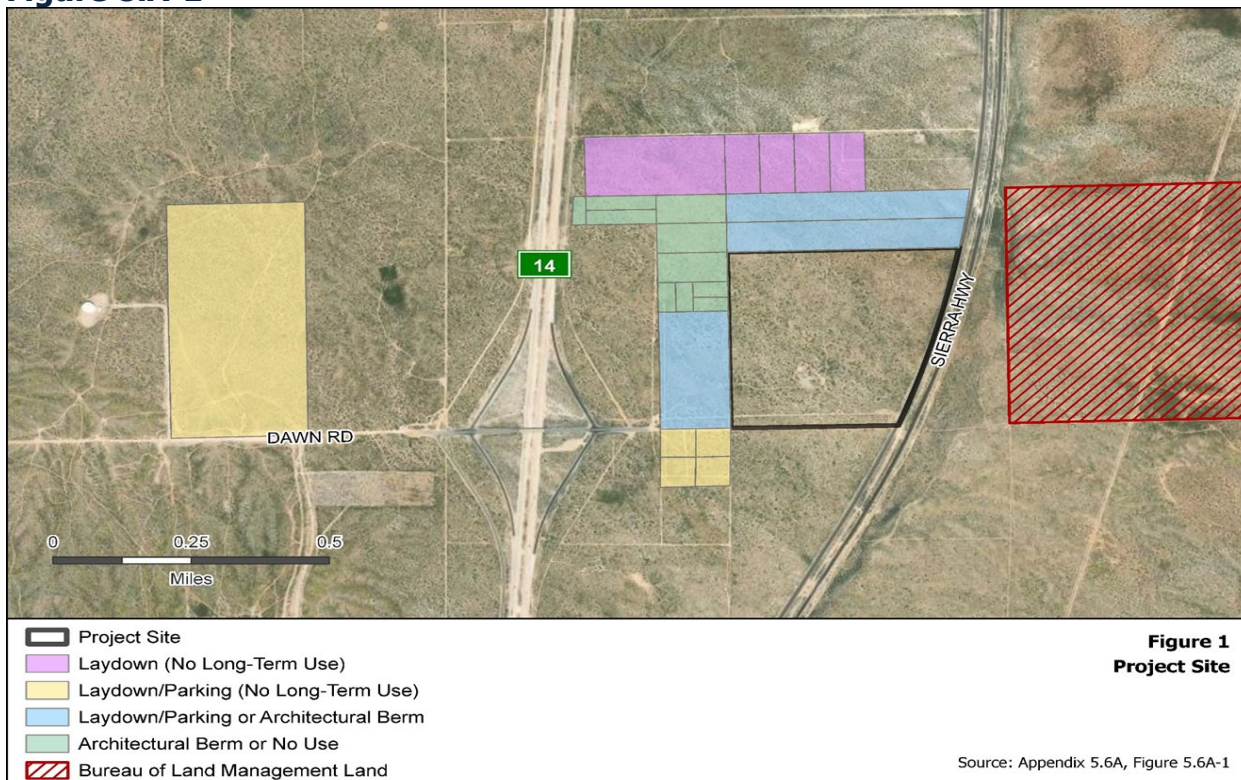


Figure 8.A-2

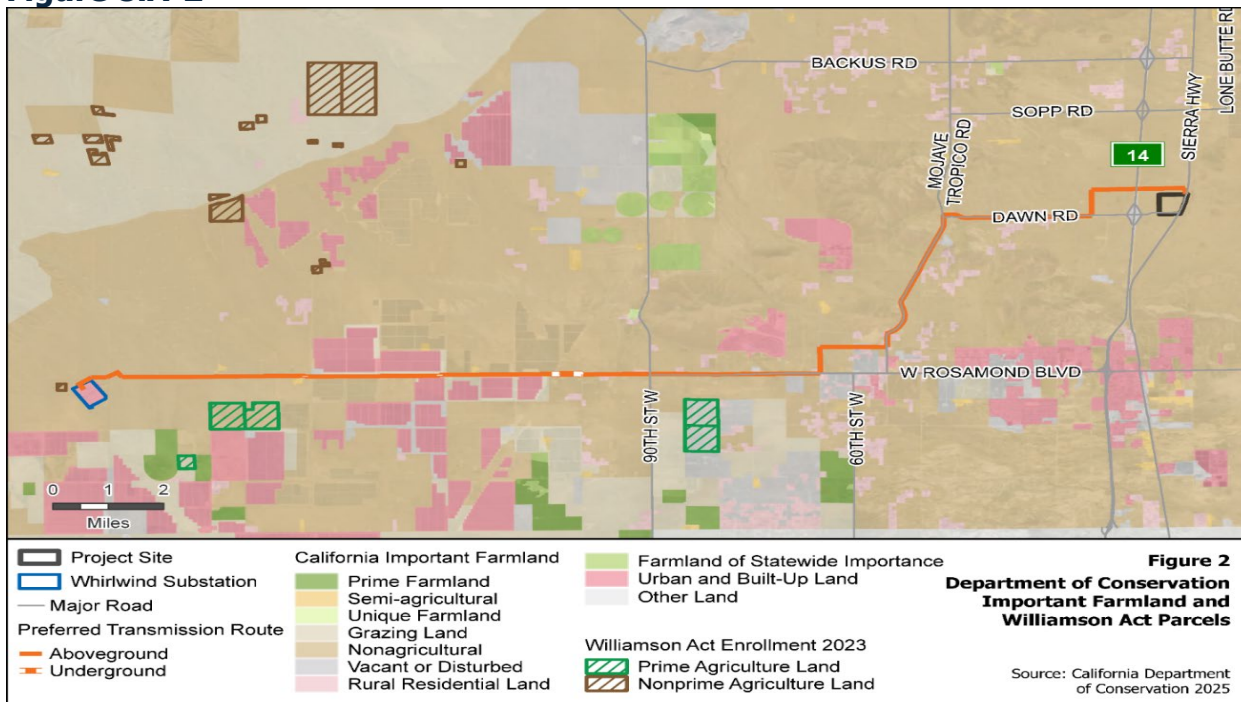


Figure 8.A-3

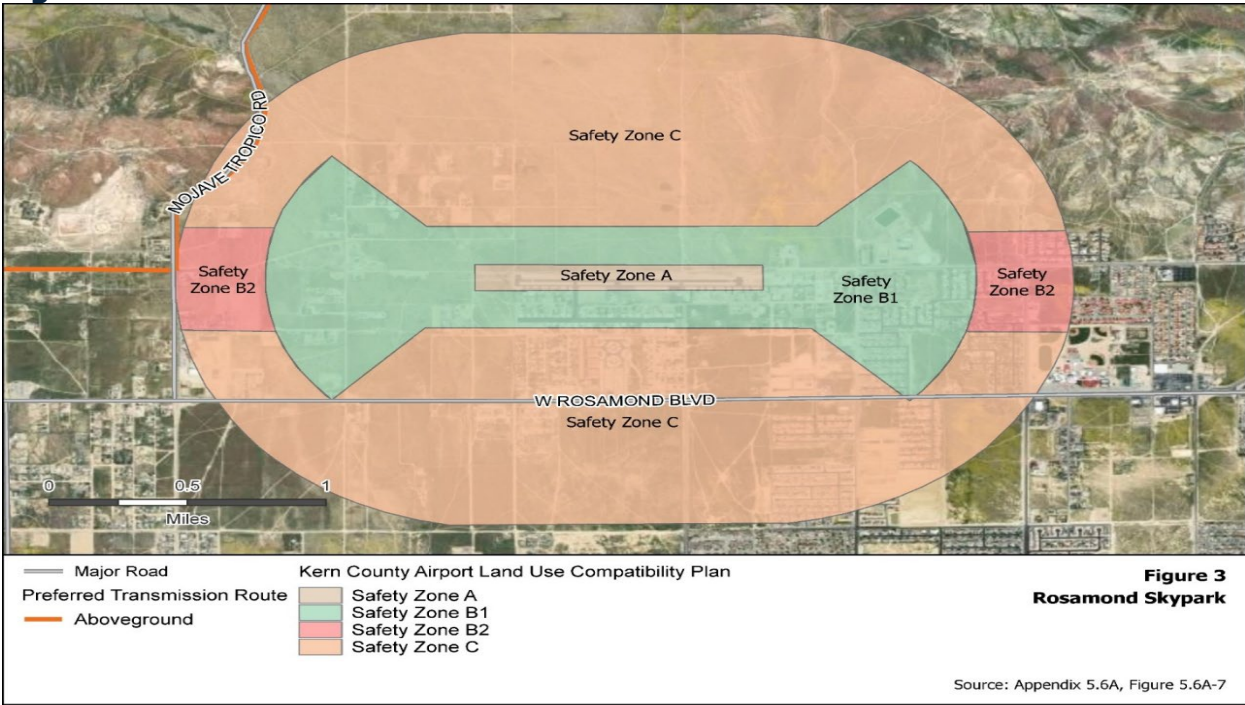
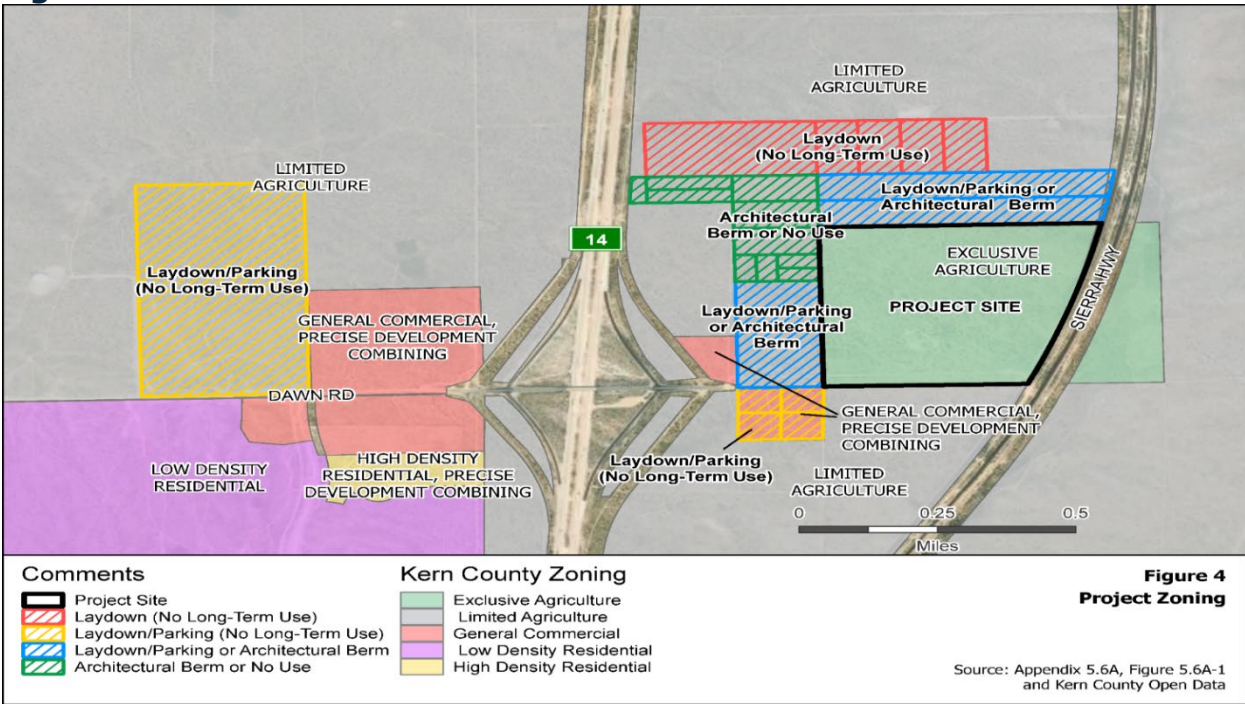


Figure 8.A-4



8 Local Impacts Analysis

B. Traffic and Transportation

i. Introduction

This **Traffic and Transportation** analysis addresses the extent to which the Willow Rock Energy Storage Center will cause direct, indirect, and cumulative environmental impacts on the local transportation network. It analyzes (1) the roads and routings that are proposed to be used for construction and operation, (2) potential traffic-related problems associated with the use of those routes, (3) the anticipated encroachment upon public rights-of-way during the construction of the project and associated facilities, (4) the frequency of trips and probable routes associated with the delivery of hazardous materials and transportation of waste including excavated rock, and (5) the potential effect of project operations on local airport flight traffic. Project impacts are evaluated according to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. In addition, the Discussion considers the project's consistency with applicable laws, ordinances, regulations, and standards (LORS) related to traffic and transportation.

Evidence on the topic of **Traffic and Transportation** is contained in Exhibits 1025, 1032-1033, 1040-1041, 1053, 1070, 1077, 1089, 1111, 1153, 1155, 1162, 1233, 1323, and 2000 and Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be a 520-megawatt (MW) gross facility that will use advanced compressed air energy storage technology. The Willow Rock site is in the unincorporated area of Kern County, approximately four miles north of the community of Rosamond. The property is an approximately 112-acre undeveloped site bounded on the north and west by vacant, undeveloped property, on the east by Sierra Highway, and on the south by Dawn Road.

A new approximately 19-mile-long generation tie (gen-tie) line will connect the Willow Rock site to the Southern California Edison (SCE) Whirlwind Substation at the intersection of 170th Street West and Rosamond Boulevard, southwest of the Willow Rock site. Energy stored at the Willow Rock site will be delivered to the SCE Whirlwind Substation via this gen-tie line. The applicant has proposed eight gen-tie route options that would either be within County-

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20.

designated roadway easements or would cross existing roadways, privately owned vacant lands, or lands managed by the federal Bureau of Land Management.²

b. Existing Setting

Local access to the project site is proposed via Dawn Road, with regional access provided by State Route 14 (SR-14) and Sierra Highway. SR-14 connects to Interstate 5 approximately 60 miles to the south and also provides access to State Route 58 (SR-58) and the unincorporated area of Mojave located about 10 miles north of the project site. Sierra Highway provides access to the cities of Lancaster and Palmdale, approximately 15 miles and 24 miles south of the project site, respectively. See **Figure 8(B)-1** for the regional transportation setting for the Willow Rock Energy Storage Center.

There are no sidewalks or bicycle facilities on roadways accessing the proposed project site or within the immediate study area.

Kern Transit operates 13 fixed routes and seven dial-a-ride service routes throughout Kern County. Kern Transit Route 100 operates on a fixed route between Bakersfield and Lancaster, with local stops in Rosamond. Route 250 operates on a fixed route between California City and Lancaster, also with local stops in Rosamond.³

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on traffic and transportation to be potentially significant. A master list of cumulative projects within the study area is provided in **Appendix E**. The following cumulative projects are relevant to **Traffic and Transportation**:

- Class II bike lanes on Sierra Highway from Rosamond Boulevard to Los Angeles County line (3.0 miles)
- Class II bike lanes on Rosamond Boulevard from 60th Street West to Sierra Highway (4.2 miles)⁴

c. Regulatory Setting

Projects proposed before the CEC are reviewed to ensure that the proposed facilities will comply with all applicable laws, ordinances, regulations, and standards (LORS) (Pub. Resources Code, § 25525; Cal. Code Regs., tit. 20, §§ 1201(r), 1744(b)). See **Table 8.B-2** for the LORS applicable to the evaluation of project impacts on traffic and transportation.

² Ex. 2000, FSA, p. 5.8-1.

³ Ex. 2000, FSA, pp. 5.14-1—5.14-3.

⁴ Ex. 2000, FSA, p. 5.14-5.

d. Methodology and Thresholds of Significance

The California Environmental Quality Act (CEQA) presents a list of criteria to

determine the significance of project impacts on traffic and transportation, in Appendix G of the CEQA Guidelines and restated in **Table 8.B-1** below. The CEQA Guidelines and applicable LORS frame the criteria used in this Decision for evaluating environmental impacts of the Willow Rock Energy Storage Center on traffic and transportation.

The operations of roadway facilities are described with the term “level of service” (LOS). LOS is a qualitative description of traffic flow from a vehicle driver’s perspective based on factors such as speed, travel time, delay, and freedom to maneuver. Six levels of service are defined, ranging from LOS A (free-flow conditions) to LOS F (over-capacity conditions). LOS E corresponds to operations “at capacity”. When volumes exceed capacity, stop-and-go conditions result, and results are designated LOS F.⁵

Staff provided details of its assessment of current and potential traffic conditions, following methods developed by the Transportation Research Board (TRB), as documented in the *Highway Capacity Manual 7th Edition* (HCM 7th) for vehicles. Staff used the LOS standards of Caltrans and Kern County, described in the sections below, as significance thresholds to determine whether project-generated traffic’s effects on LOS would create a conflict with the County’s General Plan policy.⁶

Of note, the Kern County General Plan requires mitigation if development causes affected roadways to fall below LOS D. Additionally, as a condition of private development approval, developers are required to build roads needed to access the existing road network.⁷

Vehicle Miles of Travel (VMT) is a measure used to describe automobile use on a daily basis. Current CEQA guidelines (CEQA Guidelines, § 15064.3) identify VMT as the most appropriate criterium to evaluate a project’s transportation impacts. The implementation of Senate Bill (SB) 743 eliminated the use of criteria such as auto delay, LOS, and similar measures of vehicle capacity of traffic congestion as the basis for determining significant impacts as part of CEQA compliance. Instead, SB 743 criteria promote the reduction of greenhouse gas emissions (GHGs), the development of multimodal transportation networks, and a diversity of land uses. In compliance with SB 743 mandates, VMT was employed to assess the environmental impacts of this project on the transportation network.⁸

Since Kern County has not yet completed consideration of transportation significance thresholds based on VMT for purposes of significance for this project, CEQA Guidelines

⁵ Ex. 2000, FSA, p. 5.14-5.

⁶ Ex. 2000, FSA, p. 5.14-6.

⁷ Ex. 2000, FSA, p. 5.14-7.

⁸ Ex. 2000, FSA, p. 5.14-6.

sections 15064(b)(2) and 15064.7 were used to determine whether traffic impacts would be significant. Accordingly, for purposes of this project, an impact from VMT would be significant if it would conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.⁹

To consider the Caltrans target LOS on state highways, directional segments, and intersections on the state highway system may be considered deficient when the addition of project-generated traffic causes an intersection LOS to degrade to LOS D or worse.¹⁰

ii. Environmental Analysis of Traffic and Transportation

TABLE 8.B-1 Traffic And Transportation¹¹				
Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☒	☐	☐
b. Conflict or be inconsistent with CEQA Guidelines, section 15064.3, subdivision (b)?	☐	☐	☒	☐
c. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☒	☐	☐
d. Result in inadequate emergency access?	☐	☐	☒	☐

a. Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

1. Construction

The project could, unless mitigated, significantly conflict with the Kern County General Plan's intersection LOS D standard due to construction worker and truck trips causing operations to

⁹ Ex. 2000, FSA, p. 5.14-8.

¹⁰ Ex. 2000, FSA p. 5.14-8.

¹¹ Source: Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, transportation.

degrade to LOS F at the SR 14 Southbound Ramps and Dawn Road intersection during the PM peak hour. Any effect of project-generated traffic during construction will be temporary in nature and is not expected to result in any long-term impacts to the transportation system.¹²

The estimated 60-month construction period is estimated to employ a maximum of 749 workers per day during the peak period of construction. During peak period construction activity, the project is estimated to generate 1,498 worker trips and 728 truck trips during a typical day of the peak construction period. The project is also estimated to generate 749 worker trips and 76 truck trips during the AM and PM peak hours.¹³

Staff's analysis estimated the project trip distribution from construction traffic, and the impacts of those trips on the LOS at eight unsignaled intersections. The results of the assessment for the Year 2028 During Construction traffic scenarios indicate that all study intersections are expected to operate acceptably (LOS D or better) with the addition of construction traffic, except for the intersection of the SR 14 Southbound Ramps and Dawn Road. This intersection is projected to operate at LOS A during the AM peak hour but degrade to LOS F during the PM peak hour.¹⁴

With the implementation of Condition of Certification **TRANS-1**, the Applicant will be required to prepare a Construction Traffic Management Plan (CTMP), in response to the potential effect that worker and heavy vehicle trips generated by the project would have on the existing roadway network. The CTMP will include traffic control measures, such as providing flaggers during peak hours at the intersection of SR 14 Southbound Ramps and Dawn Road and ensuring safe ingress and egress at the project access intersections. Using flaggers to control the intersection can reduce average delay at the stop-controlled movements to LOS D or better during the PM peak hour. The CTMP will also provide the appropriate traffic control plans for construction phases that require approval by an appropriate reviewing agency.¹⁵ With implementation of these measures, the impacts to traffic from construction trips will be less than significant.

2. Operation

During typical operation of the Willow Rock Energy Storage Center, there are projected to be a total of 40 workers including management working standard business hours and operators working shifts around the clock. The project will generate fewer than 50 peak-hour trips and fewer than 100 daily trips. These numbers fall within the typical fluctuations of average peak-hour and daily traffic on the surrounding roadway system, and as such an LOS analysis for the

¹² Ex. 2000, FSA, p. 5.14-8—5.14-9.

¹³ Ex. 2000, FSA, p. 5.14-9.

¹⁴ Ex. 2000, FSA, p. 5.14-15.

¹⁵ Ex. 2000, FSA, p. 5.14-15.

operation is not necessary.¹⁶ Therefore, the impacts from the operational trips will be less than significant.

b. Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?

The criteria for determining the significance of transportation impacts in Section 15064.3 of the CEQA guidelines promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. Consistent with this guidance, this checklist criterion considers the project's VMT generation relative to its overall effect on GHG emissions.¹⁷

1. Construction

During project construction, daily trips made by workers and delivery and haul trucks to and from the project site will result in an increase in VMT and corresponding GHG emissions from transportation sources. The Applicant reports an estimated 30,490 total VMT per day during construction. However, this increase in VMT will be temporary in nature, only lasting the duration of the construction phase.

As documented in Section 6(A) **Climate Change and Greenhouse Gas Emissions**, the VMT generated by workers in addition to the VMT and GHG emissions due to site preparation, grading, and on-and-off-site construction will equate to a maximum of 30,002.6 metric tons of CO₂ equivalent (MTCO₂e) for the worst case 12-month period. However, this temporary release of GHG emissions will result in a renewable energy project that will displace carbon-fueled power that would otherwise be used to meet electricity demand. During operation, the Willow Rock Energy Storage Center will result in the avoidance of more than 136,881 MTCO₂e per year for up to 50 years. The emissions avoided will offset the combined effects of emissions from operations and construction. Consequently, the proposed project will not result in any net additional GHG emissions. The combined direct and indirect effects of the emissions quantified indicate that a net GHG reduction will occur primarily due to the emissions avoided by producing electricity from renewable energy.¹⁸

Therefore, the Willow Rock Energy Storage Center's effect on VMT during construction will not conflict or be inconsistent with CEQA Guidelines section 15064.3(b) and is considered a less than significant impact.

¹⁶ Ex. 2000, FSA, p. 5.14-16.

¹⁷ Ex. 2000, FSA, p. 5.14-17.

¹⁸ Ex. 2000, FSA, p. 5.14-17.

2. Operations

During project operation, daily trips made by workers and delivery/haul trucks to and from the project site will result in an increase in VMT. The Applicant reports an estimated 1,628.4 VMT per day (40 employees at 40.71 VMT per employee per day) during operation. The annual 551,620.5 VMT generated by workers equates to approximately 187.8 MTCO₂e per year assuming an average CO₂ emissions factor of 338.8 grams per mile for each worker. However, this increase in VMT and associated GHG emissions will be offset by the avoided emissions of more than 136,881 MTCO₂e per year from the project's production of electricity from renewable energy.¹⁹

Therefore, the proposed project's effect on VMT during operation will not conflict or be inconsistent with CEQA Guidelines section 15064.3(b) and is considered a less than significant impact.

c. **Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

Site access to the project site will be provided on Dawn Road. Site access design plans are not yet available. Compliance with Condition of Certification **TRANS-2** will require the project owner to design all site access intersections and corresponding roadway improvements according to Kern County design standards, and, where applicable, Caltrans standards, to ensure safe ingress and egress at the project access intersections during the construction and operation phases. This will ensure that the site access will not substantially increase hazards due to a geometric design feature.

The project could, unless mitigated, substantially increase hazards to vehicles, bicyclists, and pedestrians traveling on the surrounding roadway network, including SR 14, due to the proposed use of oversized/overweight vehicles and transport of hazardous substances. During construction and decommissioning, heavy construction equipment will be delivered to the project site using area roadways, which may require transport by oversized/overweight vehicles. Consistent with California Vehicle Code Sections 35780 – 35796, **TRANS-2** will require mandatory permits from Caltrans including Variance Permits for all transport of oversized/overweight vehicles and loads over 15 feet in width, over 17 feet in height, or over 135 feet in length.

Furthermore, prior to the commencement of construction, the applicant shall provide an irrevocable offer of dedication to Kern County for the following roadways:

- Dawn Road: 55 feet from the centerline along the entire subject property and the off-site portion from the westerly project boundary to the westerly boundary of Lot 3 of County Parcel Map No. 260.

¹⁹ Ex. 2000, FSA, pp. 5.14-18—5.14-19.

- Sierra Highway: 45 feet from the centerline on both sides, totaling 90 feet in width.

Prior to the commencement of construction, the Applicant will also obtain encroachment permits from the Kern County Public Works Department, construct an asphalt concrete paved road approach at the proposed Dawn Road entrance at Sierra Highway, extending 200 feet into the project site, and pave Dawn Road from the project entrance westerly to the Caltrans boundary at SR 14.

Lastly, the applicant is required to obtain all mandatory permits from Caltrans and other relevant jurisdictions, including Kern County, required for the transport of materials to the project that exceed weight, height, and length limits, including any limitations imposed on the movement of such material.

Conditions of Certification **TRANS-2, TRANS-3 and TRANS-4** will ensure that all of these required permits are obtained and mitigation measures are implemented to reduce any impacts to or from transportation related to the Willow Rock Energy Storage Center to a less than significant level.²⁰

d. Would the project result in inadequate emergency access?

Emergency vehicles will maintain right-of-way over construction or operational vehicles. Neither construction nor operations activities will prevent access for emergency vehicles. The addition of project-generated traffic during construction and normal operations along study roadways and at study intersections will have a negligible effect on emergency vehicles, as all vehicles are required to yield to emergency response vehicles. Therefore, there will be a less than significant impact to emergency access from the Willow Rock Energy Storage Center.²¹

e. Cumulative Impacts

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) on traffic and transportation to be potentially significant. A master list of cumulative projects within the study area is provided in **Appendix E**. The following cumulative projects are relevant to Transportation:

- Class II bike lanes on Sierra Highway from Rosamond Boulevard to Los Angeles County line (3.0 miles)
- Class II bike lanes on Rosamond Boulevard from 60th Street West to Sierra Highway from (4.2 miles)

These projects are planned, approved, or under construction and, given their physical proximity to the project area and potential to overlap the transportation routes used during

²⁰ Ex. 2000, FSA, p. 5.14-19—5.14-20.

²¹ Ex. 2000, FSA, p. 5.14-20.

construction, could potentially contribute to the same environmental effects as the proposed project. As discussed above, the implementation of **TRANS-1 through TRANS-4** will lessen any significant direct or indirect traffic and transportation impacts from the Willow Rock Energy Storage Center to less than significant. It is assumed that these cumulative projects will be subject to the same permitting and oversight to mitigate any direct or indirect impacts as well. There is no evidence in the record to suggest that any impacts from the Willow Rock Energy Storage Center will contribute to cumulative impacts on traffic or transportation.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 8.B-2 demonstrates that, with implementation of Conditions of Certification **TRANS-1 through TRANS-4**, the Willow Rock Energy Storage Center will comply with all applicable LORS related to traffic and transportation.

TABLE 8.B-2 Conformance With Applicable LORS	
Applicable LORS	Conformance and Basis for Determination
Federal	
Code of Federal Regulations	
Title 49 CFR, Subtitle B, Sections 171-177, 350-399, and 397.4 Requires proper handling and storage of hazardous materials during transportation.	Compliant. The project and transportation will align with all established standards for the transportation of hazardous materials. See TRANS-4 .
Title 14 CFR, Part 77, Section 77.9 Requires notification of the Federal Aviation Administration (FAA) of any construction or alterations exceeding 200 feet above ground level. Also requires FAA notification of any construction or alteration of greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.	Compliant. The project has received determinations of no hazard to air navigation from the FAA. (WSP 2024j)
State	
California Vehicle Code (CVC) and Streets and Highways Code	
CVC Sections 13369, 15275 and 15278 Addresses the licensing of drivers and classifications of licenses required for the operation of particular types of vehicles. In addition, certificates permitting the operation of vehicles transporting hazardous materials are required.	Compliant. The project will follow the guidelines specified in these sections of the CVC. See TRANS-3 and TRANS-4 .
CVC Section 25160 et seq. Addresses the safe transport of hazardous materials.	Compliant. The project will follow the guidelines specified in these sections of the CVC. See TRANS-4 .
CVC Sections 2500-2505 Authorizes the issuance of licenses by the Commissioner of the CHP for the transportation of hazardous materials including explosives.	Compliant. The project will follow the guidelines specified in these sections of the CVC. See TRANS-4 .

TABLE 8.B-2 Conformance With Applicable LORS	
Applicable LORS	Conformance and Basis for Determination
CVC Section 31300 et seq. Requires transporters to meet proper storage and handling standards for transporting hazardous materials on public roads.	Compliant. Transporters will comply with standards for the transportation of hazardous materials on state highways throughout construction and operations. State Emergency Response Commission (SERC) will ensure adherence to CVC Section 31303, mandating that shippers of hazardous materials opt for the shortest route possible to and from the site. See TRANS-3 and TRANS-4 .
CVC Sections 31600 - 31620 Regulates the transportation of explosive materials.	Compliant. The project will conform to CVC Sections 31600 – 31620. See TRANS-4 .
CVC Sections 32000 - 32053 Regulates the licensing of carriers of hazardous materials and includes noticing requirements.	Compliant. The project will conform to CVC Sections 31600 – 31620. See TRANS-4 .
CVC Sections 32100 - 32109 and 32105 Establishes special requirements for the transportation of substances presenting inhalation hazard and poisonous gases and require that shippers of inhalation or explosive materials contact the CHP and apply for a Hazardous Material Transportation License.	Compliant. The project will comply by mandating shippers of inhalation or explosive materials to reach out to the CHP and secure a Hazardous Materials Transportation License. See TRANS-4 .
CVC Sections 34000 - 34121 Establishes special requirements for the transportation of flammable and combustible fluids over public roads and highways.	Compliant. The project will conform to CVC Sections 34000 – 34121. See TRANS-4 .
CVC Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5–7, 34506, 34507.5 and 34510–11 Regulates the safe operation of vehicles, including those used to transport hazardous materials.	Compliant. The project will follow the guidelines specified in these sections of the CVC. See TRANS-4 .
CVC Sections 35780 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Compliant. Transporters will secure transportation permits for all overloads, as mandated. See TRANS-3 .
CVC Sections 35550 - 35559 Regulates weight and load limitations.	Compliant. The project will follow the guidelines specified in these sections of the CVC. See TRANS-3 .
California Streets and Highways Code	
S&HC Sections 660, 670, 1450, 1460 et seq., 1470, and 1480 Regulates right-of-way encroachment and the granting of permits for encroachments on State and County roads.	Compliant. The project will follow the guidelines specified in these sections of the S&HC. See TRANS-2 .
S&HC Sections 117, 660 - 711 Requires permits from Caltrans for any roadway encroachment during truck transportation and delivery.	Compliant. Encroachment permits will be obtained by transporters, as required. See TRANS-3 .
S&HC Sections 660 - 711 Requires permits for any load that exceeds Caltrans weight, length, or width standards for public roadways.	Compliant. Transportation permits will be obtained by transporters for all overloads, as required. See TRANS-3 .
California State Planning Law	
Government Code, Section 65302 Requires that the Project must conform to the General Plan.	Compliant. The project will align with the provisions of the Kern County General Plan with preparation of

TABLE 8.B-2 Conformance With Applicable LORS	
Applicable LORS	Conformance and Basis for Determination
	Construction Traffic Management Plan and site access design that meets Kern County and Caltrans standards. See TRANS-1 and TRANS-2 .
Local	
Kern County General Plan	
Circulation Element Specifies long-term planning goals and procedures for transportation infrastructure system quality within Kern County.	Compliant. The project will be consistent with the policy of the Kern County General Plan Circulation Element with preparation of Construction Traffic Management Plan and site access design that meets Kern County and Caltrans standards. See TRANS-1 and TRANS-2 .

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Traffic and Transportation.

iv. Agency and Public Comment

There were no comments on Traffic and Transportation in the record of the Evidentiary Hearing.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Willow Rock Energy Storage Center will add traffic to local roadways during the construction period.
2. Without mitigation, the construction traffic from the Willow Rock Energy Storage Center project has the potential to degrade the level of service at the intersection of the SR 14 Southbound Ramps and Dawn Road to LOS F during the PM peak hour.
3. Condition of Certification **TRANS-1** will require the Applicant to prepare and implement a Construction Traffic Management Plan (CTMP) to reduce any significant impacts on the existing roadway network from the construction worker and heavy vehicle trips generated by the project, including flaggers during peak hours at the intersection of SR 14 Southbound Ramps and Dawn Road to improve the LOS during the PM peak hour and ensuring safe ingress and egress at the project access intersections.
4. Prior to the commencement of construction, the Applicant will provide an irrevocable offer of dedication to Kern County for: 1) Dawn Road: 55 feet from the centerline along the entire subject property and the off-site portion from the westerly project boundary

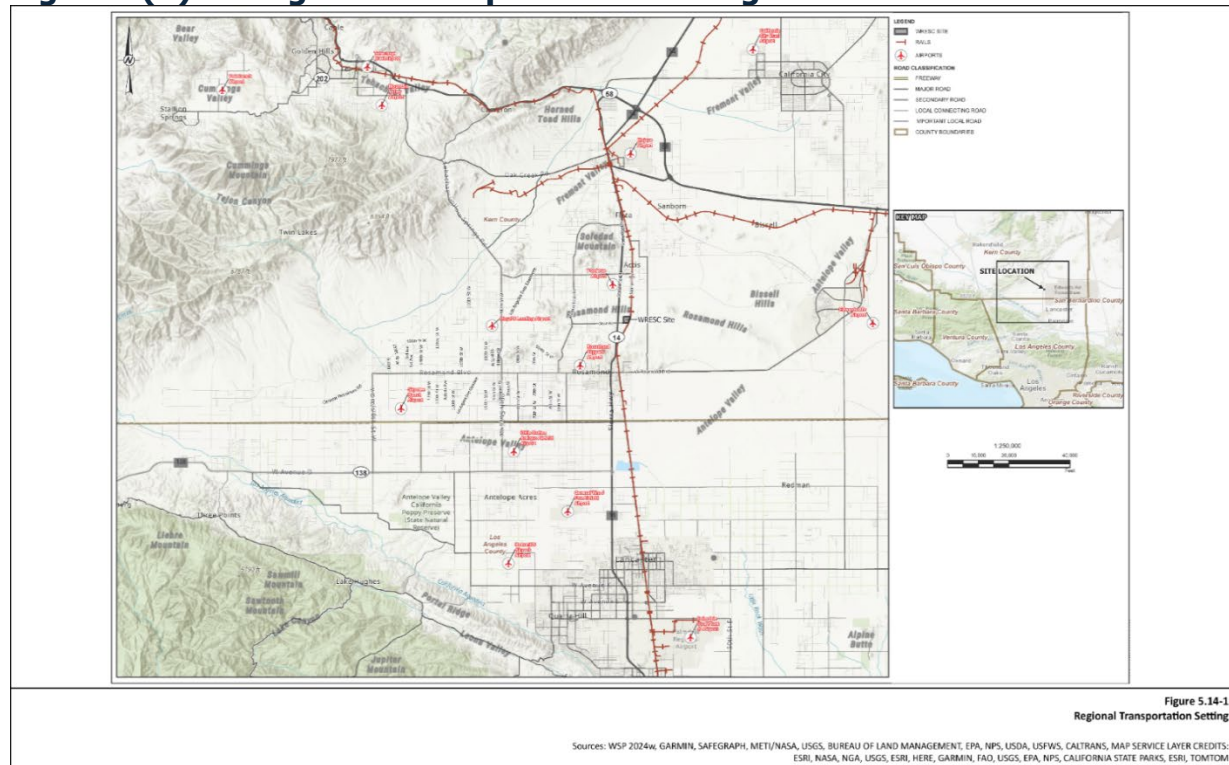
to the westerly boundary of Lot 3 of County Parcel Map No. 260, and 2) Sierra Highway: 45 feet from the centerline on both sides, totaling 90 feet in width.

5. Prior to the commencement of operations, the Applicant shall pave Dawn Road from the project entrance westerly to the Caltrans boundary at SR 14.
6. With mitigation, neither construction nor operations traffic from the Willow Rock Energy Storage Center will conflict with any program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities.
7. Daily trips made by workers and delivery and haul trucks to and from the Willow Rock Energy Storage Center project site during construction and operation will result in an increase in VMT and corresponding GHG emissions from transportation sources, however they will be offset by the emissions avoided by the operation of the project.
8. With the implementation of **TRANS-2, TRANS-3 and TRANS-4** which ensure that all required permits from relevant administering agencies are obtained, the Willow Rock Energy Storage Center will not substantially increase hazards due to a geometric design feature, or hazardous or incompatible use.
9. Neither construction nor operation activities from the Willow Rock Energy Storage Center will prevent access for emergency vehicles.
10. With implementation of Conditions of Certification **TRANS-1 through TRANS-4**, Willow Rock will not have a significant direct, indirect, or cumulative impact on traffic or transportation.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will comply with all applicable laws, ordinances, regulations, and standards relating to Traffic and Transportation.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that Willow Rock will not result in any significant direct, indirect, or cumulative impacts to Traffic and Transportation.

Figure 8(B)- 1 Regional Transportation Setting



8 Local Impact Assessment

C. Socioeconomics, Environmental Justice, and Public Benefits

i. Introduction

This **Socioeconomics, Environmental Justice, and Public Benefits** analysis evaluates any changes that the Willow Rock Energy Storage Center may induce on existing populations, employment patterns, local communities, local services and resources, and law enforcement services. It analyzes whether the project is located near an environmental justice population. It also evaluates the estimated beneficial economic effects of the projects. Lastly, it addresses the project's ability to comply with applicable laws, ordinances, regulations, and standards (LORS) related to socioeconomic impacts.

Evidence on the topic of **Socioeconomics, Environmental Justice, and Public Benefits** is contained in Exhibits 1025, 1032-1034, 1040-1041, 1053, 1070, 1090, 1155, 1233, 1323, and 2000 and the Reporter's Transcript of the Evidentiary Hearing.¹ Agency and public comment was also provided on these topics as reflected in **Appendix D**.

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be a 520-megawatt (MW) gross facility that would use advanced compressed air energy storage technology. The Willow Rock site is in the unincorporated area of Kern County, approximately four miles north of the community of Rosamond, a census designated place. The property is an approximately 112-acre undeveloped site bounded on the north and west by vacant, undeveloped property, on the east by Sierra Highway, and on the south by Dawn Road. A new approximately 19-mile-long generation tie (gen-tie) line will connect the Willow Rock site to the Southern California Edison (SCE) Whirlwind Substation at the intersection of 170th Street West and Rosamond Boulevard, southwest of the Willow Rock site. Energy stored at the Willow Rock site will be delivered to the SCE Whirlwind Substation via this gen-tie line.

b. Socioeconomic Setting

The area surrounding the Willow Rock Energy Storage Center is sparsely populated, with approximately 24,376 residents living within a 10-mile radius of the project site, based on USEPA EJScreen Mapper data. Of this total population, about 60 percent identify as people of color (POC), according to the 2020 Decennial Census. Within this 10-mile buffer, six census

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20, 48:21—68:1, and 230:12—236:21.

tracts meet the Council on Environmental Quality (CEQ) threshold for identifying minority or POC populations, meaning more than half of the residents in those tracts identify as POC.²

In terms of income distribution, Applicant provided data from the American Community Survey (ACS) data from 2017–2021 – which estimated that roughly 31,776 people reside within the same 10-mile area – concludes that approximately 35 percent of that population is considered low-income. While federal environmental justice (EJ) guidance does not provide a definitive threshold for identifying low-income populations, this analysis uses the same 50 percent benchmark applied by the CEQ to POC populations. Based on this metric, no census tracts within the 10-mile radius would meet the criteria for being classified as a low-income population under this analysis.³

It is estimated that 15 percent of the construction workforce will be local to Kern County and 85 percent will be non-local from nearby counties. The operation workforce will be drawn locally from Kern County or the nearby community of Rosamond and cities of Palmdale and Lancaster in Los Angeles County. The setting for labor supply for the project would be Bakersfield Metropolitan Statistical Area (MSA), which covers Kern County; Los Angeles-Long Beach-Glendale Metropolitan Division (MD), which covers Los Angeles County; and Riverside-San Bernardino-Ontario MSA, which covers Riverside and San Bernardino counties.⁴ The record contains detailed data describing the projected labor supply in the Bakersfield MSA, the Los Angeles-Long Beach-Glendale MD, and the Riverside-San Bernardino-Ontario MSA for each of the project's construction and operations occupations.⁵

Staff considered Kern County the study area for population and housing impacts. Kern County is the third largest county by area in California with 8,134 square miles of land area. The total population of Kern County is 909,235 people, with an estimated population of the unincorporated portion as 606,531. The project site would be located within unincorporated Kern County. Public facilities including recreation facilities, parks and libraries are provided by Kern County. The project site is located in the Mojave Unified School District.⁶

Police and fire services would be provided from departments within Kern County.⁷ The Kern County Fire Department (KCFD) has 47 fire stations. Station 15 in Rosamond is the closest to the project, located approximately 3.1 miles southwest of the project site. The CAL FIRE maps for Kern County indicate the project is in an area of local responsibility. Similarly, the Kern County Sheriff's Office (KCSO) services the unincorporated areas of Kern County and two cities from 13 substations providing uniformed patrol throughout the county. The Rosamond

² Ex. 1233, p. 85.

³ Ex. 1233, p. 85.

⁴ Ex. 2000, FSA, p. 5.11-1.

⁵ Ex. 2000, FSA, pp. 5.11-3—5.11-7.

⁶ Ex. 2000, FSA, pp. 5.11-1, and 5.11-8—5.11-9; and Figure 6-2 on p. 6-8.

⁷ Ex. 2000, FSA, pp. 5.11-1, and 5.11-7—5.11-8.

Substation serving over 20,000 residents is the nearest to the project, located approximately 3.2 miles south of the project site.⁸

Population growth for Unincorporated Kern County from 2020-2050 is projected to be 10.8%, with 22.0% projected growth for the entire county. The projected housing need determined by the Kern County Council of Governments by 2031 is estimated at 9,243 housing units, although the 2024 vacancy rate estimates that 19,937, or 6%, of the County's housing units were unoccupied.⁹ Hotels and motels within the nearby cities of Lancaster, Palmdale and Tehachapi and communities of Rosamond and Mojave total approximately 2,804 rooms. Five RV parks in Lancaster and Palmdale offer approximately 235 sites.¹⁰

c. Environmental Justice Setting

The Final Staff Assessment provides a detailed description of the Staff's methodology for identifying an environmental justice (EJ) population or community as part of the CEC's site certification process, including: the consideration of the California Environmental Protection Agency's (CalEPA) California Communities Environmental Health Screening Tool (CalEnviroScreen 4.0); the CEC's outreach program specifically as it relates to the proposed project; and the demographic data for people living in a six-mile radius of the project site and a determination on presence or absence of an EJ population. The methodology documented in the record includes:

- Identification of minority persons and/or persons with low income (i.e., disadvantaged community) living in an area potentially affected by the proposed project;
- Providing notice in appropriate languages (when possible) of the proposed project and opportunities for participation in public workshops for disadvantaged communities;
- Identification of areas potentially affected by various project-related emissions (e.g., air quality, greenhouse gases (GHG), hazardous materials, etc.) or other project-related nuisance effects (e.g., noise, traffic, etc.); and
- A determination of the potential for a significant adverse disproportionate impact on an identified EJ population resulting from the proposed project alone, or in combination with other existing and/or planned projects in the area (i.e., from cumulative impacts).¹¹

Based on Staff's calculation of percentage of minority population and application of CalEnviroScreen 4.0 calculating the Pollution Burden and Population Characteristics for each

⁸ Ex. 2000, FSA, pp. 5.11-7—5.11-8.

⁹ Ex. 2000, FSA, p. 5.11-2.

¹⁰ Ex. 2000, FSA, pp. 5.11-2—5.11-3.

¹¹ Ex. 2000, pp. 6-1—6-6.

U.S. Census tract within a 6-mile radius around the Willow Rock site, Staff identified numerous census blocks that are greater than 50% minority population, and one census block, Census Tract No. 06029006500, that qualifies as a Disadvantaged Community. (See **Figure 8.C-1**) Additionally, the record establishes that the percentage of the population in a 6-mile radius around the project site who are enrolled in free or reduced-price meal programs is larger than the percentage of people living in Kern County generally. Therefore, the populations living in both the Mojave Unified School District and adjacent Southern Kern Unified School District are considered EJ populations based on low income status, as depicted in **Figure 8.C-2**.¹²

d. Public Benefits Context

Public Resources Code section 25523(h) requires this Decision to contain a discussion of any public benefits from the project including, but not limited to, economic benefits, environmental benefits, and electricity reliability benefits. To assess public benefits, Staff considered the changes in local economic activity and local tax revenue that would result from project construction and operation. A regional economic impact analysis (EIA) was conducted by the Applicant to estimate the total impact of the project on regional output, earnings, and employment. The EIA involved inputting planning level project expenditures into the Regional Input-Output Modeling System (RIMS II) developed by the U.S. Bureau of Economic Analysis (BEA) to estimate the effect of direct expenditures on indirect expenditures and induced expenditures in the region of a development project. The RIMS II multipliers used by the applicant are specific to Kern County and are in 2021 dollars.¹³

ii. Environmental and Impact Analysis of Socioeconomics, Environmental Justice, and Public Benefits

The evaluation of impacts from the Willow Rock project to socioeconomics considers potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 8.C-1**, and applicable federal, state, and local rules and regulations.¹⁴ The determination of the significance of any impacts on population, housing, police protection, schools, and parks and recreation is based on expert testimony, including input from local and state agencies, and the industry-accepted, two-hour commute range for construction workers and one-hour commute range for operational workers.¹⁵

The evaluation of project effects on low-income and/or high minority populations includes a review of the CalEnviroScreen 4.0 indicators related to specific technical issues raised by the project. Thus, the project-specific Census tract identified as disadvantaged incorporates analyses by CEC technical analysts (Air Quality; Cultural and Tribal Cultural Resources;

¹² Ex. 2000, FSA, pp. 6-6—6-10

¹³ Ex. 2000, FSA, pp. 7-1—7-2.

¹⁴ Ex. 2000, FSA, p. 5.11-9.

¹⁵ Ex. 2000, FSA, p. 5.11-10.

Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire; Soils and Water Resources; Noise and Vibration; Public Health; Solid Waste Management; Traffic and Transportation; and Visual Resources) to determine if any disproportionate burdens will be borne by EJ populations.¹⁶

Staff conducted the public benefits assessment to assess the direct economic effects of the Willow Rock Energy Storage Center on employment, labor income, and spending associated with the construction and operation of the project. Staff also assessed indirect effects representing expenditures on intermediate goods made by suppliers who provide goods and services to the project. Lastly, induced economic effects were evaluated, based on projected changes in household spending that will occur due to the wages, salaries, and proprietor's income generated through direct and indirect economic activity.¹⁷

TABLE 8.C-1 Socioeconomics¹⁸

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☒	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☒	☐
c. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:				
i. Fire protection?	☐	☐	☒	☐
ii. Police Protection?	☐	☐	☒	☐

¹⁶ Ex. 2000, FSA, p. 6-4.

¹⁷ Ex. 2000, FSA, p. 7-1.

¹⁸ Source: Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, population and housing, public services, and recreation.

TABLE 8.C-1 Socioeconomics¹⁸

Would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
iii. Schools?	☐	☐	☐	☒
iv. Parks?	☐	☐	☒	☐
v. Other public facilities?	☐	☐	☐	☒
d. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☒	☐
e. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

a. Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

1. Construction

The project will not directly or indirectly induce substantial unplanned growth in Kern County. The project will construct an underground energy storage system. The project does not propose new housing, and the project site is zoned Exclusive Agriculture.

Construction of the project is expected to last 60 months and require an average of 271 workers per month and a peak of 751 workers per month. Although the applicant anticipates 85 percent of the workforce would be non-local and 15 percent local to Kern County, Condition of Certification **SOCIO-1** is included per the request of the Kern County Planning and Natural Resources Department requiring Applicant to endeavor to hire at least 50 percent of construction workers from local Kern County communities. For any non-local workers that are hired, they are likely to seek temporary lodging closer to the project site, including the hotels, motels, and RV parks in the vicinity, and return to their primary residences on weekends or their days off. Given the longer duration for the excavation, if any non-local workers sought to relocate closer to the project site, the vacancy rate of existing housing units suggests that housing will be available without significant adverse impacts on the housing supply.

The data describing the workforce in the region shows there is a sufficient workforce for project construction in the Bakersfield MSA in Kern County, Los Angeles-Long Beach-Glendale MD, and Riverside-San Bernardino-Ontario MSA. Thus, the project's construction workforce will

not directly or indirectly induce substantial population growth in the project area, and the impacts from the project on population will be less than significant.¹⁹

2. Operation

Operation of the project will not directly or indirectly induce substantial unplanned population growth in Kern County. The project will employ 40 operation workers, and all are anticipated to be local and live within Kern County or the nearby communities of Rosamond, Palmdale, and Lancaster. The record shows that there is sufficient local workforce within the Bakersfield MSA in Kern County. If some workers were to relocate closer to the project, the small number of workers required for operation will not significantly increase population growth. Given the housing vacancy rate of 6.4 percent for Kern County and 10 percent for unincorporated Kern County has a 10 percent vacancy rate, there is a sufficient amount of housing units available if operation workers relocate closer to the project site.²⁰ Therefore, the impact will be less than significant.

b. Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

The project will not necessitate the construction of replacement housing. Project construction will take 60 months to complete and will average 271 and have a peak of 751 workers per month. For any non-local workers seeking temporary housing near the project site, there are multiple hotels, motels, and RV parks in the nearby communities of Rosamond, Palmdale, Lancaster, Mojave, and Tehachapi. Additionally, as discussed above, the vacancy rate in housing units in the vicinity will enable construction and operations workers to relocate closer to the project site without displacing other people. Additionally, **SOCIO-1** will encourage hiring of local workers within Kern County. Therefore, project construction and operation will not displace any people or housing. Construction of replacement housing elsewhere will not be necessary.²¹ The impact will be less than significant.

c. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:

¹⁹ Ex. 2000, FSA, pp. 5.11-10—5.11-11.

²⁰ Ex. 2000, FSA, p. 5.11-12.

²¹ Ex. 2000, FSA, p. 5.11-12.

1. Fire protection?

The project site will be serviced by KCFD. Project construction activities that could pose a risk for fire or the need for fire protection due to heated exhaust or sparks, including the use of cranes, rotary drills, excavation equipment, construction vehicles, scrapers, and bulldozers/graders. The project will use the controlled detonation of explosives which could pose a fire risk and require the need for fire protection. Other construction activities with a potential fire risk due to heat sources or open flames could include the use of torches or welding equipment. Conditions of Certification **WORKER SAFETY-5** and **WORKER SAFETY-8** require a Project Construction Controlled Detonations Plan and a Construction Underground Fire Protection Plan. While there may be a slight increased need for fire protection response during project construction, the effects will not be sufficient to induce the construction of new or physically altered governmental facilities that could result in significant environmental impacts. Therefore, impacts will be less than significant.

During operations, if some operation workers were to relocate closer to the project site, they would have a negligible effect on the ability of fire stations to meet their emergency service and response standards. On site, the project will have a fire protection system which will include an electric fire pump, a small jockey pump, and a fire protection water network system consisting of hydrants or standpipes and portable fire extinguishers. Fire sprinkler systems will be installed, and firefighting water will be stored in the service/fire water storage tank. All hazardous material storage areas will be equipped with a fire extinguishing system and ventilation for enclosed substances. Diesel fuel will be stored in dual-walled, integrated fuel tanks. With all the above elements, the project will not result in substantial adverse physical environmental impacts associated with the provision of new or physically altered fire service facilities to maintain acceptable service rations, response times, or other performance objectives. Therefore, the project impact will be less than significant.²²

2. Police protection?

The project site will be serviced by the KCSO. The temporary relocation of the construction workforce closer to the project sites may cause a slight increase in the need for residential police services, however it will be temporary and cease with the completion of construction. For calls to the Willow Rock project site, the KCSO's Rosamond Substation is approximately three miles from the site. Given the proximity of the project site to the substation, the project will not significantly affect the service ratios or response times.

Construction of the project will cause a slight increase in the need of emergency response services, including police protection. However, this increase will be temporary and cease at the end of project construction. The sheriff's office will not be significantly affected by the project, nor will the project induce the construction of new or physically altered government facilities,

²² Ex. 2000, FSA, pp. 5.11-13—5.11-14

such as a sheriff station, that could result in significant environmental impacts. Therefore, the impact will be less than significant.

During operation, the Willow Rock project will have a 6- to 8-foot-tall perimeter fence, security access gates, security lighting and building cameras. The project will have a security plan to ensure the project has security alarms for critical structures, perimeter breach detectors, onsite monitoring detectors, and video or still camera monitoring systems. The project operations will not result in substantial adverse physical environmental impacts associated with the provisions of new or physically altered police service facilities to maintain acceptable service ratios, response times, or other performance objectives. Therefore, the project will have no impact.²³

3. Schools?

Construction workers who temporarily relocate closer to the project site typically do not bring their families with them. However, if there is an increase in children attending public school during project construction, it would be mitigated through the payment of the school impact fee required by California Government Code section 65995 and Education Code section 17620. Therefore, the project will not result in substantial adverse physical impacts to school facilities.

If the operational workforce of 40 workers included non-local workers who relocated closer to the project, it is unlikely that there would be an increase in the need for schools or an effect on service ratios to the extent that new or physically altered school facilities would be necessary. Therefore, no impact on schools will result from operation of the project.²⁴

4. Parks?

Construction workers do not typically visit parks while working on a project. If non-local construction workers were to visit parks and recreational facilities, the usage would be temporary and cease at the end of construction. If some of the 40 operations workers were to relocate closer to the project site, the few new residents would have a negligible increase on the usage of or demand for parks or other recreational facilities. Therefore, the project will not result in substantial adverse physical environmental impacts associated with the provision of new or physically altered park facilities to maintain acceptable service ratios or other performance objectives. The project will have either no impact, or a less than significant impact, on park facilities.²⁵

²³ Ex. 2000, FSA, pp. 5.11-14—5.11-15

²⁴ Ex. 2000, FSA, p. 5.11-15.

²⁵ Ex. 2000, FSA, pp. 5.11-15—5.11-16.

5. Other public facilities?

For all of the reasons discussed above, the construction and operations workforces will either have no impact on public facilities, or the impact will be negligible.²⁶

d. Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

For the same reasons as discussed above, the construction and operations workforces will either have no impact on neighborhood and regional parks or other recreational facilities, or the impact will be less than significant.²⁷

e. Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Recreational facilities are not included in the Willow Rock Energy Storage Center, nor will the project require the construction or expansion of recreational facilities. If some construction workers were to use nearby recreational facilities, the usage would be temporary and end with the completion of construction. If the operations workers were to relocate closer to the project site, they would not be in numbers that would require construction or expansion of recreational facilities. Therefore, neither the construction or operation of the project will require the construction or expansion of recreational facilities, and there will be no impact.²⁸

f. Cumulative Impacts to Socioeconomics

Cumulative impacts could occur when more than one project in the same area has overlapping construction schedules, thus creating a demand for workers that cannot be met locally, or when a project's demand for public services does not match a local jurisdiction's ability to provide such services. An influx of non-local workers and their dependents can strain housing, law enforcement services, fire protection services, and parks and recreation.

Based on a review of the cumulative projects master list in **Appendix E**, there are eight projects within the study area,²⁹ including:

- Golden Queen Mining Company – surface mining and reclamation plan
- GEM Hill Quarry – surface mining and reclamation plan
- Capella Solar – solar PV facility

²⁶ Ex. 2000, FSA, p. 5.11-16.

²⁷ Ex. 2000, FSA, pp. 5.11-16—5.11-17.

²⁸ Ex. 2000, FSA, p. 5.11-17.

²⁹ Ex. 2000, FSA, p. 5.11-9.

- Enterprise Solar – solar PV facility
- Sanborn Solar – solar PV facility
- Mojave Micro Mill – construct a steel mill facility and solar array
- Bullhead Solar – PV solar facility
- Organics Energy Solar – high solids anaerobic digestion facility for composting organic waste

In examining the construction and operational timelines and workers needed for these cumulative projects together with the Willow Rock Energy Storage Center, the data in the record shows:

- The cumulative projects are in different stages of approval and development, so the labor needed to construct them would be spread out over time and there is sufficient workforce for these projects.
- There is a sufficient supply of hotels, motel rooms, and vacant housing units for workers seeking temporary or permanent housing near the Willow Rock Energy Storage Center, so the project will not contribute to a cumulatively considerable impact on the housing supply.
- The Willow Rock Energy Storage Center will not contribute to cumulatively considerable impacts on public services, because Conditions of Certification including **SOCIO-1 through SOCIO-2, WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-5, WORKER SAFETY-8, and HAZ-4 through HAZ-5** together will ensure that the project will not have an incremental impact projects on fire protection, law enforcement, schools, parks or other public facilities.³⁰

g. Impacts to Environmental Justice Populations

Pursuant to Staff's methodology for assessing impacts from the Willow Rock Energy Storage Center to Environmental Justice populations depicted in **Figure 8.C-1** and **Figure 8.C-2**, the record contains a detailed analysis and identifies potential impacts due to Air Quality; Public Health, Hazards, Hazardous Materials/Waste, and Wildfire; Solid Waste Management; and Water Resources.

1. Air Quality

Ambient air quality standards (AAQS) are established to protect the health of even the most sensitive individuals in our communities, which includes the EJ population, by defining the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health. The record reflects potential air quality (i.e. ozone, PM2.5, and fugitive dust) impacts that could affect the EJ populations represented in **Figure 8.C-1** and **Figure 8.C-2**. These potential air quality impacts were evaluated quantitatively based on the most sensitive

³⁰ Ex. 2000, FSA, pp. 5.11-17—5.11-19.

population, which includes the EJ populations, by conducting an air quality impact analysis (AQIA).

As discussed in Section 6(B) **Air Quality**, the Willow Rock Energy Storage Center will not be expected to contribute significantly to the regional air quality as it relates to ozone. The project will not be required to provide any offsets because the emission units are for emergency use only and will be limited to no more than 200 hours of operation per year. In addition, as required by **AQ-SC5**, the project will control diesel construction-related emissions, which will reduce NOx and VOCs during construction. Therefore, the project will not contribute significantly to regional ozone concentrations, relative to baseline conditions. The project's air quality impacts, as it related to ozone and ozone precursors will be less than significant for the census tracts of concern and the general population.

Based on the evidence, we conclude that the project will not expose sensitive receptors to substantial ozone precursor concentrations. The project's ozone and ozone precursor air quality impacts will be less than significant for the local EJ community and the general population. Additionally, the project will not result in a cumulatively considerable net increase of secondary pollutants such as ozone in the air basin. Therefore, no disproportionate ozone impacts to an EJ population will occur.

With regard to PM2.5, the communities in the Census tract near the Willow Rock site are currently exposed to below average PM2.5 concentrations as compared to all other tracts statewide. Further, the project will comply with **AQ-SC1 through AQ-SC5** during construction, which will reduce particulate matter during construction. The project will therefore be expected to not contribute significantly to regional PM2.5 concentrations, relative to baseline conditions. The project's air quality impacts, as it related to PM2.5 will be less than significant for the census tract of concern and the general population.

Therefore, the project will not expose sensitive receptors to substantial PM2.5 concentrations and no disproportionate impacts to an EJ Population will occur.³¹

Impacts from construction-related fugitive dust is also analyzed in the **Air Quality** section. There, the data demonstrates that while maximum impacts from PM10 due to fugitive dust may exceed the limiting standards for workers onsite, the impacts would decrease rapidly beyond the fenceline, and project-related PM10 would not significantly impact the nearest residence or sensitive receptor. Additionally, construction practices required by Conditions of Certification **AQ-SC1 through AQ-SC5** will reduce impacts from PM10 and fugitive dust below a level of significance throughout the project site. Therefore, there will be no disproportionate PM10 impacts to an EJ population.

³¹ Ex. 2000, FSA, pp. 6-11—6-13.

2. Hazards, Hazardous Materials, Hazardous Waste, and Wildfire

EJ populations may experience disproportionate hazards, hazardous materials, and wildfire impacts if the storage and use of hazardous materials within or near EJ communities occur to a greater extent than within the community at large or if the project would contribute to or exacerbate the effects of cleanup sites, hazardous waste generators and facilities, and solid waste facilities. A disproportionate impact upon the EJ population can also result from the planned storage and use of hazardous materials on the site. A disproportionate waste management impact on an EJ population could occur if project wastes identified as hazardous were shown to affect a disadvantaged community.

The Willow Rock project will involve limited transport, storage, use, and disposal of hazardous materials during construction, operation and maintenance, and decommissioning activities. The amounts of hazardous materials used and hazardous waste produced during construction, operations, and decommissioning are far less than those found at other types of energy production projects, thus reducing the risks posed by hazardous materials and wastes on workers and the public.

Explosives will be used on the site for cavern excavation only during the construction phase and will be stored in a special magazine. Explosives are highly regulated and numerous safety precautions must be in place for their use and temporary storage. Safety inspections of explosives storage and use during construction will be routinely conducted by the project owner and an independent safety monitor. All explosives will be removed from the site after construction.

The spoils from the cavern construction will be routinely sampled and analyzed as per Condition of Certification **WORKER SAFETY-1** to determine if these wastes meet the statutory definition of hazardous.

To assess the impact of a hazardous stressor on a population within a census tract, CalEnviroScreen 4.0 assigns a score to each category of stressor reflecting a weighting factor that's inversely proportional with distance from the census tract. As **Figure 8.C-1** shows, there are no populated census tracts within 1,000 meters of the proposed project site. Therefore, no further analysis is needed. No disproportionate impacts to an EJ population will occur from hazardous materials or waste from the project.³²

3. Noise and Vibration

EJ populations may experience disproportionate noise impacts if the siting of unmitigated industrial facilities occurs within or near EJ communities to a greater extent than within the community at large.

³² Ex. 2000, FSA, pp. 6-13—6.15.

The Kern County General Plan does not establish noise level thresholds for construction activities. However, the County's Municipal Code limits construction noise near residential areas to certain hours. Specifically, construction noise that can be heard within 150 feet of the site is prohibited between 9:00 P.M. and 6:00 A.M. on weekdays, and between 9:00 P.M. and 8:00 A.M. on weekends, if the site is located within 1,000 feet of an occupied residential dwelling. The project has proposed that construction activities will occur from 7:00 A.M. to 9:00 P.M. on weekdays and 8:00 A.M. to 9:00 P.M. on weekends when within 1,000 feet of any occupied residential dwelling.

Construction activities will include the use of equipment that will generate noise that exceeds ambient levels, such as rollers, cranes, telehandlers, front-end loaders, hoppers, and pile driver hammers. Moreover, the project will utilize controlled detonations to excavate the underground storage cavern. Construction-related noise from controlled detonation activities will expose some nearby sensitive receptors to noise levels significantly higher than the existing ambient noise level.

As discussed below in the **Noise and Vibration** Section 8(D), the project includes mandatory Conditions of Certification to reduce potential effects associated with construction-related noise impacts to less than significant. Therefore, no disproportionate impacts to an EJ population will occur.³³

4. Public Health

Since toxic air contaminants (TACs) have no AAQS that specify health-based levels considered safe for everyone, a health risk assessment (HRA) is used to determine if people might be exposed to those types of air pollutants at unhealthy levels. Staff identified the potential public health impacts (i.e. cancer and non-cancer health effects) that could affect the EJ populations represented in **Figure 8.C-1** and **Figure 8.C-2**. These potential air public health risks were evaluated quantitatively based on the most sensitive population, which includes the EJ population, by conducting an HRA. Please refer to Section 5.10, **Public Health** for details. CEC staff also examined individual contributions of indicators in CalEnviroScreen 4.0 that are relevant to public health.

The FSA includes a careful analysis of the potential disproportionate impacts on EJ communities related to diesel PM, pesticide use, toxic releases from the facility, traffic, asthma rates, low birth weight infants, cardiovascular disease. There is no evidence that shows that disproportionate impacts to EJ communities will occur related to these public health indicators.³⁴

³³ Ex. 2000, FSA, pp. 6-15—6.16.

³⁴ Ex. 2000, FSA, pp. 6-16—6-19.

5. Solid Waste

A disproportionate solid waste impact on an EJ population could occur if the project would contribute to or exacerbate the effects of local solid waste disposal facilities. Here, the project owner will use solid waste sites or facilities that are verified to comply with current laws, ordinances, regulations, and standards. In addition, there will be no increase in solid waste generators and facilities in the area due to project construction or operation because there is adequate capacity to dispose of waste from the project. Therefore, there will be a less than significant impact related to solid waste facilities within the disadvantaged community census tract. No disproportionate impacts to an EJ population will occur.³⁵

6. Water Resources

A disproportionate water resources impact on an EJ population could occur if the project would contribute to drinking water degradation, exacerbate groundwater contamination, or discharge additional pollutants to impaired surface water bodies. To assess the impact of a stressor on water resources on a population within a census tract, CalEnviroScreen 4.0 assigns a score to each category of stressor reflecting a weighting factor that is inversely proportional with distance from the census tract. For stationary stressors related to water resources, the weighting factor diminishes to zero for distances more than 1,000 meters (0.6 mile). As shown in **Figure 8.C-1**, only one disadvantaged community census tract (06029006500) is located within the six-mile radius of the project. However, census tract 06029006500 is more than 1,000 meters away from the project and therefore there will be no impact related to water resources on a disadvantaged community. No disproportionate impacts to an EJ population will occur.³⁶

h. Public Benefits

The estimates of economic impacts and benefits that will accrue to Kern County due to the construction and operation of the Willow Rock Energy Storage Center are reported in **Table 8.C-2**.

TABLE 8.C-2 Willow Rock Energy Storage Center Economic Benefits (2023 Dollars)	
TOTAL FISCAL BENEFITS	
Estimated Annual Property Taxes	\$18.45 million
State and Local Taxes	
Construction	\$7 million
Operation	\$203,000
School Impact Fees	Total Estimated Fees: \$10,296 (Mojave Unified School District)

³⁵ Ex. 2000, FSA, pp. 6-19—6-20.

³⁶ Ex. 2000, FSA, pp. 6-21—6-22.

TABLE 8.C-2 Willow Rock Energy Storage Center Economic Benefits (2023 Dollars)	
TOTAL NON-FISCAL BENEFITS	
Total Capital Costs	\$1.5 billion
Construction Payroll (including benefits)	\$434 million
Construction materials and supplies	\$1 billion
Operations Budget (annual)	\$4.7 million
TOTAL DIRECT, INDIRECT, AND INDUCED BENEFITS	
<i>Estimated Direct Benefits</i>	
Construction Jobs	271 (average), 751 (peak)
Operation Jobs	40
<i>Estimated Indirect Benefits</i>	
Construction Jobs	2,129
Construction Income	\$168.2 million
Operation Jobs	5
Operation Income	\$420,220
<i>Estimated Induced Benefits</i>	
Construction Jobs	2,788
Construction Income	\$176.4 million
Operation Jobs	3
Operation Income	\$185,892

These estimates are based on Applicant's calculations. To utilize the RIMS II multipliers (2021\$) for this analysis, project costs were adjusted (using the U.S. Bureau of Labor Statistics' Consumer Price Index) to deflate the costs/expenditures to 2021 dollars, then the RIMS II impact results were inflated to 2023 dollars. All inputs and outputs are displayed in year 2023 dollars.

Notable benefits of the Willow Rock Energy Storage Center include:

- Approximately \$18.45 million in property taxes annually payable to Kern County.
- With implementation of Condition of Certification **PB-1**, additional sales and use taxes to the benefit of Kern County.
- Integration of variable renewable resources in the Tehachapi Renewable Resource Area.
- Through energy storage, Willow Rock Energy Storage Center will help avoid the curtailment of renewable resources and help to meet California and regional electric reliability needs.
- Rapid-response delivery of energy and synchronous condenser voltage support services providing reliability support and stability to the grid and integrating intermittent renewable energy sources to the grid.
- Peaking energy for local contingencies.
- Use of compatibly zoned parcels in a sparsely populated area which will minimize land use impacts.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

TABLE 8.C-3 CONFORMANCE WITH APPLICABLE LORS FOR SOCIOECONOMICS	
Applicable LORS	Conformance and Basis For Determination
State	
California Education Code, section 17620	
The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.	Compliant. Condition of Certification SOCIO-2 will require the project owner to pay school impact fees to the Mojave Unified School District.
California Code Government Code, sections 65995-65998	
Except for a fee, charge, dedication of other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirement to offset the cost for school facilities.	Compliant. The proposed project will not trigger any state and local public agency fees, etc. to offset the cost for school facilities. Therefore, the project is in conformance.
Local	
Mojave Unified School District Board Policy	
BP 7211 Facilities: Developer Fees – In order to finance the construction or reconstruction of local school facilities needed to accommodate increased student enrollment resulting from new development, the Governing Board may establish, levy, and collect developer fees on residential, commercial, and industrial construction within the district, subject to restrictions specified by law.	Compliant. SOCIO-2 will require the project owner to pay school impact fees to the Mojave Unified School District.

Table 8.C-2 demonstrates that, with implementation of Conditions of Certification **SOCIO-1 through SOCIO-2**, the Willow Rock Energy Storage Center will comply with all applicable LORS relating to socioeconomics.

There are no additional LORS for environmental justice impacts.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Socioeconomics, Environmental Justice, and Public Benefits.

iv. Agency and Public Comment

At the Evidentiary Hearing, members of the public provided comments in support of the project, referencing the potential jobs, economic growth, and reliable and clean energy that the Willow Rock Energy Storage Center will provide to the region. Many spoke in praise of the transparency, community outreach, and engagement by the project owner. Written comments in support of the project were received in the record as well. All commenters were in support of the Willow Rock Energy Storage Center. There were no comments which might indicate

potentially significant impacts to socioeconomics or disproportionate impacts on environmental justice communities. For details and citations to the record for these comments, please refer to **Appendix D**. The Committee appreciates the comments provided, and no further response is necessary.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. We have considered environmental justice factors in our analysis of the evidence in the record of proceedings for the Willow Rock Energy Storage Center.
2. Demographic screening identifies the presence of environmental justice, minority, and low income populations within a six-mile radius of the Willow Rock Energy Storage Center.
3. The Willow Rock Energy Storage Center will not cause disproportionate or significant socioeconomic impacts to any population in the project vicinity.
4. A sufficient skilled construction and operations labor pool is available in the Bakersfield MSA in Kern County, Los Angeles-Long Beach-Glendale MD, and Riverside-San Bernardino-Ontario MSA.
5. The construction of the Willow Rock Energy Storage Center will tend to draw from non-local workforce, however with implementation of **SOCIO-1**, the Applicant will endeavor to hire at least 50 percent of the construction workers from local Kern County communities.
6. The Willow Rock Energy Storage Center will not cause an influx of a significant number of construction or operation workers into the local area.
7. There is an adequate supply of hotels, motels, RV parks, and rental properties within the project vicinity to accommodate workers who stay in the project area temporarily during the week and commute to their homes on the weekends.
8. The Willow Rock Energy Storage Center will not result in significant adverse effects on local employment, housing, schools, parks and recreation, law, enforcement, or emergency services.
9. The Willow Rock Energy Storage Center will have a construction payroll of approximately \$434 million.

10. The Willow Rock Energy Storage Center will result in approximately \$1 billion in construction expenditures for materials and supplies.
11. The Willow Rock Energy Storage Center will generate approximately \$18.45 million in annual property taxes.
12. Project construction of the Willow Rock Energy Storage Center will generate approximately \$7 million in state and local tax revenue.
13. When operational, the Willow Rock Energy Storage Center will provide about \$203,000 per year in state and local taxes.
14. Implementation of **SOCIO-2** will ensure that the project owner will pay school impact fees to the Mojave Unified School District.
15. Implementation of **PB-1** will ensure that Kern County will receive from the project owner an amount equivalent to the sales and use taxes that would be generated from the construction of the Willow Rock Energy Storage Center.
16. The anticipated construction and operation payrolls and the sales and property tax amounts provided Willow Rock Energy Storage Center will have a beneficial impact on the Kern County economy.
17. Neither the construction nor the operation of the Willow Rock Energy Storage Center will create an additional demand for housing or public services.
18. The Willow Rock Energy Storage Center will not make a cumulatively considerable contribution to any significant adverse cumulative impacts on population, housing, schools, parks and recreation, or law enforcement

vi. Conclusions of Law

1. No significant direct, indirect, or cumulative adverse socioeconomic impacts will occur as a result of the Willow Rock Energy Storage Center.
2. The record contains an adequate analysis of potential socioeconomic effects in accordance with federal and state guidelines on environmental justice and establishes that the Willow Rock Energy Storage Center will not create any disproportionate adverse effects on minority or low-income populations.

Figure 8.C- 1 Minority Population and Disadvantaged Communities

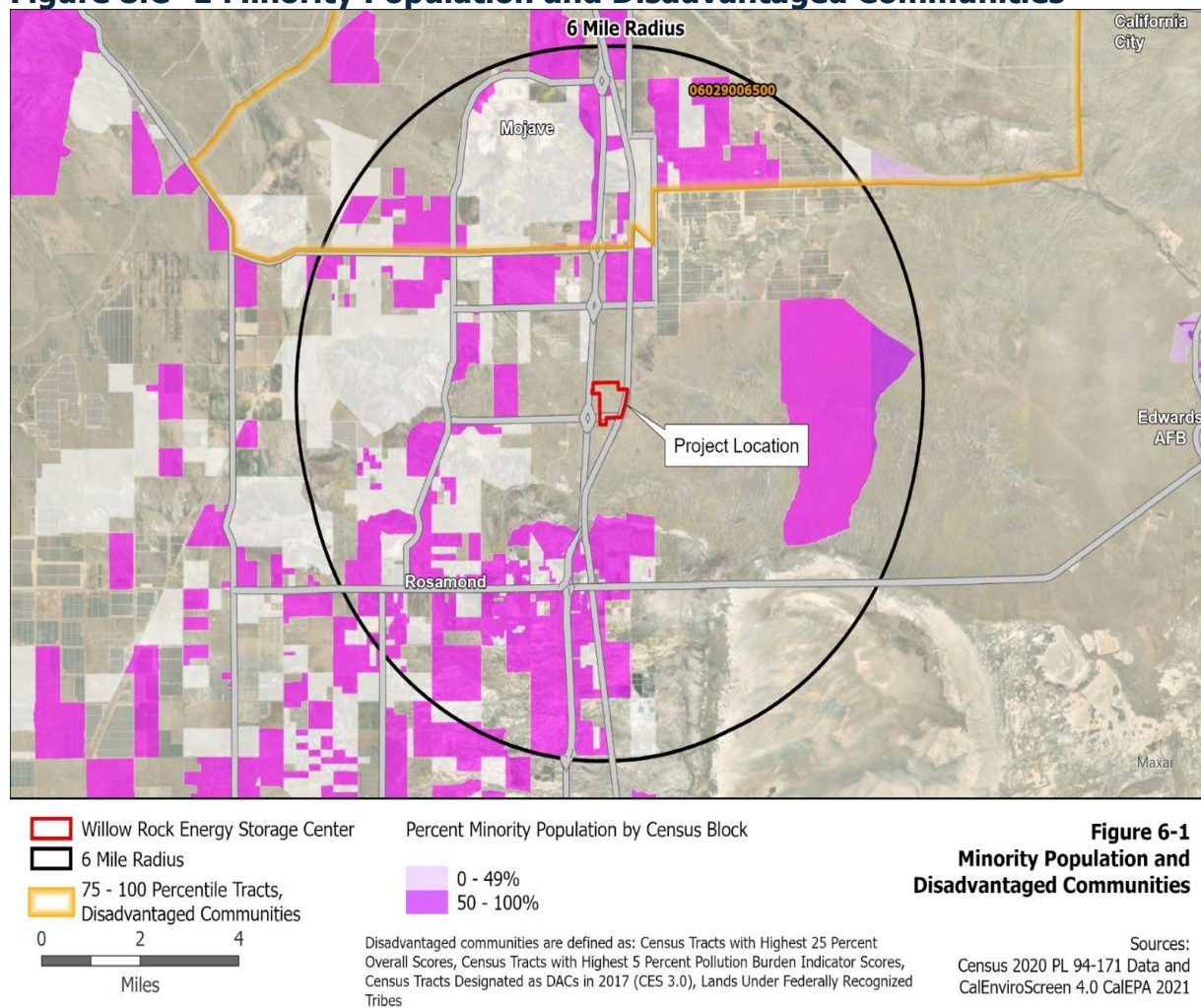
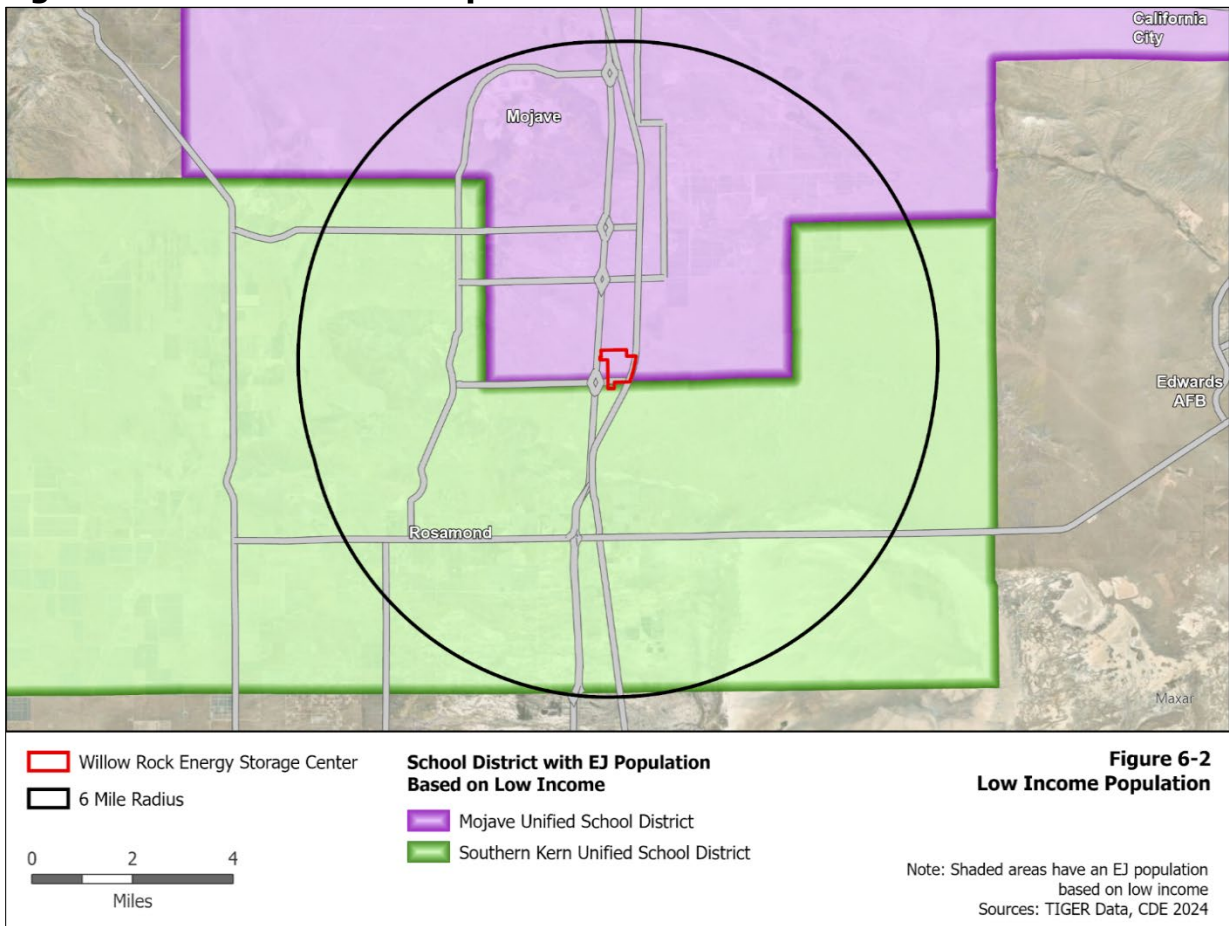


Figure 8.C- 2 Low Income Population



8 Local Impacts Analysis

D. Noise and Vibration

i. Introduction

This **Noise and Vibration** analysis evaluates whether noise and vibration produced during the construction and operation of the Willow Rock Energy Storage Center will be mitigated sufficiently to comply with applicable laws, ordinances, regulations, and standards (LORS) and avoid the creation of significant impacts.

Evidence on the topic of **Noise and Vibration** is contained in Exhibits 1025, 1032-1034, 1040-1041, 1053, 1135, 1155, 1233-1234, 1323, and 2000-2002, and the Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be a 520-megawatt (MW) gross facility that will use advanced compressed air energy storage technology. The Willow Rock site is in the unincorporated area of Kern County, approximately four miles north of the community of Rosamond, and near the intersection of State Route 14 (SR-14) and Sierra Highway. The site is situated on the eastern portion of an approximately 112-acre undeveloped site bounded on the north and west by vacant, undeveloped property, on the south by Dawn Road, and bisected by Sierra Highway. The parcels associated with the project are zoned Exclusive Agriculture and Limited Agriculture. The predominant ambient noise sources are traffic on SR-14 and Sierra Highway. The nearest residential receptor, represented by Noise Sensitive Area-1 (NSA-1), is located approximately 4,100 feet to the northwest of the Willow Rock site.²

A new approximately 19-mile-long generation tie (gen-tie) line will connect the Willow Rock site to the Southern California Edison (SCE) Whirlwind Substation at the intersection of 170th Street West and Rosamond Boulevard, southwest of the Willow Rock site. Energy stored at the Willow Rock site will be delivered to the SCE Whirlwind Substation via this gen-tie line. The applicant has proposed eight gen-tie route options that would either be within County-

¹ 8/21/25 Evidentiary Hearing RT pp. 38:19 – 48:20.

² Ex. 2000, FSA, 5.9-1.

designated roadway easements or would cross existing roadways, privately owned vacant lands, or lands managed by the federal Bureau of Land Management.³

b. Existing Setting

The Supplemental AFC contains information about the monitoring locations and residential receptors. Residential receptors range from 4,100 feet to 9,300 feet from the Willow Rock site.⁴ See **Figure 8(D)-1**⁵ for a visual representation of the monitoring locations and noise sensitive receptors in relation to the Willow Rock site. The record contains detailed data and analysis associated with these receptors and monitoring locations.

A 25-hour long-term ambient noise monitoring survey was conducted at Continuous Monitoring Location-6 (CML-6) located within the project site from May 22 to May 24, 2023. Additionally, a 25-hour long-term ambient noise monitoring survey was conducted adjacent to NSA-1 – the closest residential receptor also designated CML-1 – from May 24th to May 25th, 2023. The day-night average ambient sound levels (Ldn) measured over a 24-hour period at both CML-1 and CML-6 were approximately 56 decibels on the A-weighted scale (dBA) Ldn. The average ambient sound levels measured at CML-1 and CML-6 during daytime hours (7:00 A.M. to 10:00 P.M.) were approximately 50 and 49 dBA Leq respectively. During nighttime hours (10 P.M. to 7 A.M.), the average ambient sound levels measured at CML-1 and CML-6 were approximately 49 and 50 dBA Leq, respectively.⁶ On August 1, 2025, Staff reassessed and revised average daytime and nighttime ambient noise levels at NSA-7, documenting a noise environment higher than previous measurements at that third location.⁷

In addition, short-term noise measurements were conducted at four locations near residential receptors around the project area from May 22 to May 25, 2023. The measurements were taken during both daytime and nighttime hours at intervals of 15 minutes each. The short-term noise levels during daytime hours ranged from 43 dBA Leq located west of the project site along 30th Street SW, represented by Monitoring Location-5 (ML-5), to 53 dBA Leq located north of the project site along Sopp Road, represented by ML-2. The short-term noise levels during nighttime hours ranged from 36 dBA Leq at ML-5, to 47 dBA Leq at ML-2. ML-5 is adjacent to residential receptor NSA-7, and ML-2 is adjacent to residential receptor NSA-4.⁸

³ Ex. 2000, FSA, p. 5.8-1.

⁴ Ex. 1032, SAFC, Section 5.7 (Noise), pp. 5.7-1—5.7-14 and Tables 5.7-3 (Monitoring Locations included in the Baseline Noise Study), 5.7-4 (Noise Summary Table Baseline Ambient Sound Pressure Levels) and 5.7-9 (Modeled Construction Noise Levels at Residential Receptors).

⁵ Ex. 1032, SAFC, Figure 5.7-1.

⁶ Ex. 2000, FSA, p. 5.9-1.

⁷ Ex 2001, Noise and Vibration p. 1, and Ex. 2002 (Technical Memorandum dated August 4, 2025).

⁸ Ex. 2000, FSA, pp. 5.9-1—5.9-2.

c. Regulatory Setting

Table 8.D-2 describes the federal, state, and local rules applicable to the Willow Rock Energy Storage Center and construction and operational noise.

Of note to the project area, the Kern County General Plan Noise Element establishes noise control standards to protect public health, minimize economic impacts, and reduce noise-related annoyance. It identifies sensitive receptors, including residential areas, schools, hospitals, parks, and churches, and outlines specific performance standards for new developments. The General Plan limits outdoor noise levels in sensitive areas to 65 dBA Ldn. Furthermore, the Noise Element emphasizes compatibility between new developments and existing noise levels. Specific policies aim to protect residential and other noise-sensitive uses from exposure to harmful or annoying noise levels. Additionally, Kern County Municipal Code Chapters 8.36 (Noise Control) and 19.80 (Special Development Standards) regulate noise levels from disruptive sounds, construction noise, and commercial and industrial developments near residential areas. These local policies and rules have been incorporated into the analytical record and addressed in the Conditions of Certification, as more specifically addressed below.⁹

d. Methodology and Thresholds of Significance

The California Environmental Quality Act (CEQA) presents a list of criteria to determine the significance of project impacts from noise and vibration, in Appendix G of the CEQA Guidelines and restated in **Table 8.D-1** below. The CEQA Guidelines provide that a project would normally be considered to have a significant impact if noise levels conflict with adopted environmental standards or plans (i.e. the County's noise level threshold), and permit the CEC to rely on other agency standards to set thresholds of significance. For example, the Federal Highway Administrations guidelines describe an increase of 5 dBA over background or ambient conditions as "discernible but not substantial". Other factors can also be considered if noise levels generated by the project would substantially increase existing ambient noise levels at noise-sensitive receivers on a permanent or temporary basis.¹⁰ Generally, an increase of 3 dBA is noticeable, and an increase of 5 dBA is distinct. An increase of 5 dBA is considered less than significant, particularly if the resulting noise level does not exceed the established community noise standard. (CEQA Guidelines, § 15064.7.)

Historically, CEC certifications of jurisdictional power plants have generally required that operational noise from projects not exceed ambient noise levels by more than 5 dBA. The CEC's decisions also typically require a post-construction noise survey to verify compliance with this standard.

There are no adopted thresholds for an increase in dBA level to be considered a significant impact for construction activities. Noise due to construction activities is considered to be less

⁹ Ex. 2000, FSA, pp. 5.9-2—5.9-3.

¹⁰ Ex. 2000, FSA, p. 5.9-5.

than significant if the construction activity is temporary and the use of heavy equipment and noisy activities is limited to daytime hours. However, an increase of 10 dBA or more during the day can be perceived as noisy (triggering a community reaction) and warrant additional measures to address the noise levels.

Identifying the exact level of noise resulting from construction depends on many factors, such as time of day, intervening structures, and land topography. Performance standards and a complaint and redress process are commonly used to address impacts perceived by the community.

For impacts due to vibrations, one source of standards includes the California Department of Transportation (Caltrans) Transportation and Construction Vibration Guidance Manual. The Caltrans manual states that for construction activities that generate vibration, the threshold of human response begins at a peak particle velocity (PPV) of 0.16 inch per second (in/sec). This is characterized by Caltrans as a “distinctly perceptible” event with an incident range of transient to continuous. A level of 0.20 in/sec has been found to be annoying to people in buildings and can pose a risk of architectural damage to buildings.¹¹

ii. Environmental Analysis of Noise and Vibration

TABLE 8.D-1 Noise And Vibration¹²				
	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☒	☐	☐
b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport,	☐	☐	☐	☒

¹¹ Ex. 2000, FSA, pp. 5.9-5—5.9-6.

¹² Source: Environmental checklist established by Cal. Code Regs., tit. 14, Div. 6, Ch. 3, Appendix G, noise.

would the project expose people residing or working in the project area to excessive noise levels?				

a. Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

1. Construction

As noted above, the Kern County General Plan does not establish noise level thresholds for construction activities but does contain noise control standards to protect public health, minimize economic impacts, and reduce noise-related annoyance. The County's Municipal Code limits construction noise near residential areas to certain hours. Specifically, construction noise that can be heard within 150 feet of the site is prohibited between 9:00 P.M. and 6:00 A.M. on weekdays, and between 9:00 P.M. and 8:00 A.M. on weekends, if the site is located within 1,000 feet of an occupied residential dwelling. Construction activities will occur from 7:00 A.M. to 9:00 P.M. on weekdays and 8:00 A.M. to 9:00 P.M. on weekends when within 1,000 feet of an occupied residential dwelling. While there are no dwellings within 1,000 feet of the Willow Rock site, construction activities along the gen-tie will be subject to these limits.¹³

Construction activities for the project will occur in several phases and take approximately 60 months. The construction phases include:

- grading
- reservoir excavation
- air and water shafts drilling and excavation
- above ground equipment installation
- cavern construction
- generation-tie (gen-tie) line and associated access road construction

For certain tasks, such as cavern work located further from sensitive receptors (more than 5,000 feet), construction may operate up to 24 hours a day as needed for critical activities (limited activities that cannot be interrupted).¹⁴

Construction activities will likely utilize equipment that could generate noise levels that exceed ambient noise, such as rollers, cranes, telehandlers, front-end loader, hopper, and pile driver

¹³ Ex. 2000, FSA, p. 5.9-6.

¹⁴ Ex. 2000, FSA, p. 5.9-6.

hammer. Construction equipment typically produces noise levels between 64 dBA (i.e., conveyor) and 128 dBA (pile driver hammer) at 50 feet.¹⁵

Pile driving is anticipated to be used during surface work. The loudest construction activities will take place during shafts drilling and excavation, and above ground equipment installation construction phases. The daytime construction noise during these phases will involve various types of heavy machinery, such as pile drivers and excavators. In contrast, nighttime construction noise will be significantly reduced, as only essential equipment will operate to support 24-hour cavern work. Modeling was conducted for expected surface work during daytime and at night. The nighttime construction noise contour shows that construction noise level during nighttime hours at NSA-1 will be 33 dBA, which is substantially lower than the average nighttime ambient sound level of 49 dBA Leq at this location.¹⁶

At NSA-1, noise levels during the loudest construction phases, including pile driving but excluding controlled detonations (addressed separately below), will reach 46 dBA. The average ambient noise level at NSA-1 is 50 dBA Leq during the daytime hours. Therefore, noise generated during the loudest construction phases will be below both the ambient noise level and the County standard for noise sensitive areas.¹⁷

The project will utilize controlled detonations to excavate the underground storage cavern. Controlled detonations will be scheduled every 10 to 12 hours, beginning at a depth of approximately 60 feet and extending to approximately 2,000 feet below ground surface. Controlled detonation activities will not be continuous and will be scheduled to occur twice per day during daytime hours. Cavern work is proposed to be conducted 24 hours a day for a period of time with an estimated eight pieces of surface equipment operating at night to support that underground work.¹⁸

Each controlled detonation event for underground cavern excavation will last a few seconds. Typically, controlled detonation produces a maximum noise level of 130 dBA at ground surface at a distance of 3 feet. Staff reasons that since the controlled detonation events will begin at a depth of 60 feet below ground surface, the projected noise levels at the closest residence 4,200 feet away, NSA-1, could be approximately 65 dBA. This is 15 dBA above the ambient noise level of 50 dBA Leq during daytime hours at NSA-1. However, the impact will be less than significant because the controlled detonation activities will occur during the day and on an infrequent basis for short durations.¹⁹

The gen-tie line and associated access road construction will likely utilize heavy equipment that will generate noise. Portions of the gen-tie line will be within the vicinity of nearby

¹⁵ Ex. 2000, FSA, p. 5.9-7.

¹⁶ Ex. 2000, FSA, p. 5.9-7.

¹⁷ Ex. 2000, FSA, p. 5.9-7.

¹⁸ Ex. 2000, FSA, p. 5.9-7.

¹⁹ Ex. 2000, FSA, pp. 5.9-7—5.9-8.

residences. In general, construction noise from both the access road and gen-tie line construction could reach approximately 80 dBA at 50 feet. However, the equipment will not operate continuously, nor will all equipment operate simultaneously. Access road and gen-tie line construction will occur during the daytime and will be short-term, intermittent, and temporary. For example, the construction activities at each pole location will usually take one or two days. Construction equipment will also be equipped with adequate mufflers to minimize noise levels. Therefore, the noise levels from the gen-tie line and associated access road construction will be less than significant.²⁰

To address construction-related noise impacts that might be perceived as noisy by the surrounding community, Conditions of Certification **NOISE-1 through NOISE-3, NOISE-5, and NOISE-6** will provide the public with notification of construction and a noise complaint and redress process (see **Attachment F to Appendix A Conditions of Certification** for sample Noise Complaint Resolution Form), require noise protection for construction workers and employees, and place restrictions on construction activities.²¹

With implementation of **NOISE-1 through NOISE-3, NOISE-5 and NOISE-6**, project construction activities will not result in a substantial increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies and will not create a significant adverse noise impact.

2. Operation

The noise level standards in the County's General Plan apply to the operation of the Willow Rock Energy Storage Center. The General Plan includes policies to promote compatibility between new development and existing noise levels. While the County's Municipal Code (Chapter 19.80) restricts non-mobile noise sources from commercial and industrial uses within 500 feet of residential zones, it will not apply to the operations of Willow Rock Energy Storage Center since the nearest residence is located approximately 4,200 feet away from the Willow Rock site.²²

Concurrent operation of all major noise-producing equipment, including low-pressure compressors, transformers, and pump motors, will result in a combined operational noise level of 50 dBA at NSA-1. This will not exceed the current daytime ambient noise level of 50 dBA Leq but exceeds the current nighttime ambient noise level of 49 dBA Leq by 1 dBA. The operational noise level of 50 dBA at NSA-1 will be below the General Plan's threshold of 65 dBA for daytime and 55 dBA for nighttime.²³

²⁰ Ex. 2000, FSA, p. 5.9-8.

²¹ Ex. 2000, FSA, p. 5.9-8.

²² Ex. 2000, FSA, p. 5.9-8—5.9-9.

²³ Ex. 2000, FSA, p. 5.9-9.

NSA-7 is farther away from the highway and current ambient noise levels are lower than NSA-1. This location is 8,100 feet from the Willow Rock site.²⁴ Because the application did not provide sufficient ambient noise data for NSA-7, staff's consultant, RCH Group, conducted a long-term noise survey at this location to establish representative baseline conditions. Based on updated data collected on August 1, 2025, the results showed a measured average daytime ambient noise level of 53 dBA Leq and nighttime ambient noise level of 43 dBA Leq at this location.²⁵ Based on Staff's analysis, concurrent operation of all major noise-producing equipment will result in a combined operational noise level of 41 dBA at NSA-7. This is below both the daytime ambient noise level of 53 dBA Leq and the nighttime ambient level of 43 dBA Leq. Therefore there will be no discernible impacts from operations noise at the nearest sensitive receptors.²⁶

To ensure the project will not significantly increase the ambient noise level and will comply with the county's noise thresholds, **NOISE-4** will ensure measurement and verification that operational noise performance criteria are met at the project's noise sensitive receptors. This Condition of Certification will require the Applicant to incorporate mitigation measures into the design and operation to ensure that noise due to the operation of the project plus ambient will not exceed either 55 dBA Leq during daytime hours 7 A.M. to 10 P.M. and 54 dBA Leq during nighttime hours of 10 P.M. to 7 A.M. at NSA-1, or 58 dBA Leq during daytime hours 7 A.M. to 10 P.M. and 48 dBA Leq during nighttime hours of 10 P.M. to 7 A.M. at NSA-7.

With implementation of **NOISE-4**, project operations will not result in generation of a substantial increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or municipal code, or applicable standards of other agencies and will not create a significant adverse noise impact.

b. Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

1. Construction

The primary source of vibration during the construction process will be controlled detonation activities to excavate the underground cavern required for compressed air storage beginning at a depth of approximately 60 feet and extending to approximately 2,000 feet. As required by California Code of Regulations (CCR), Title 8, these controlled detonations will be performed by licensed lead construction personnel and will comply with federal OSHA regulations, Cal-OSHA, Mine Safety and Health Administration requirements, and any other applicable LORS.²⁷

²⁴ Ex. 1032, SAFC, Table 5.7-9.

²⁵ Ex. 2001, Noise and Vibration, p. 1.

²⁶ Ex. 2000, FSA, pp. 5.9-9—5.9-10.

²⁷ Ex. 2000, FSA, p. 5.9-11.

Applying the vibration thresholds identified by Caltrans as described above, the measured groundborne vibrations rates from underground controlled detonations and jackhammers used during surface construction activities, which are calculated to dissipate rapidly with distance, will be below the threshold of human response at a PPV of 0.16 in/sec. at the nearest residence to the project at NSA-1. Therefore, the vibration impacts from the controlled detonations and other construction activities are expected to be less than significant.

Additionally, construction vibration from gen-tie line and associated road construction activities will include vibration-generating equipment such as rollers and compactors. A roller, which generates a higher level of vibration than a compactor, can cause a groundborne vibration rate of 0.21 in/sec at 25 feet. However, vibration rates dissipate rapidly with distance, and the vibration rate generated by a roller drops from 0.210 in/sec to 0.098 in/sec at a distance of 50 feet from the source, which is below the Caltrans PPV limit of 0.16 in/sec. Therefore, temporary vibration impacts from the access road and gen-tie line construction activities will be less than significant.²⁸

c. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

The nearest airport to the project site is the Rosamond Skypark Airport, located approximately 4 miles southwest of the project site. The airport is too far from the project site to result in exposure of people residing or working in the project area to excessive noise levels.²⁹

d. Cumulative Impacts

Cumulative projects are identified as past projects, current projects, or reasonably foreseeable future projects that, when viewed in connection with the proposed project, cause its effect(s) from noise and vibration to be potentially significant. A master list of cumulative projects within the study area is provided in **Appendix E**. There are no other projects located within a distance where their noise could combine with that of this project to create a cumulative impact.³⁰ There is no evidence in the record to suggest that any impacts from the Willow Rock Energy Storage Center will contribute to cumulative impacts from noise and vibration.

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Projects proposed before the CEC are reviewed to ensure that the proposed facilities will comply with all applicable laws, ordinances, regulations, and standards (LORS) (Pub.

²⁸ Ex. 2000, FSA, p. 5.9-11.

²⁹ Ex. 2000, FSA, p. 5.9-11.

³⁰ Ex. 2000, FSA, p. 5.9-12.

Resources Code, § 25525; Cal. Code Regs., tit. 20, §§ 1201(r), 1744(b)). See **Table 8.D-2** for the LORS applicable to the evaluation of project impacts from noise and vibration. **Table 8.D-2** demonstrates that, with implementation of Conditions of Certification **NOISE-1 through NOISE-6**, the Willow Rock Energy Storage Center will comply with all applicable LORS related to noise and vibrations.

TABLE 8.D-2 Conformance With Applicable LORS³¹	
Applicable LORS	Conformance and Basis For Determination
Federal	
Occupational Health and Safety Act (OSHA) (29 C.F.R. Section 1910.95)	Compliant. Conditions of Certification NOISE-3 and NOISE-5 will ensure workers are protected against the effects of occupational noise exposure.
Federal Transit Administration Transit Noise and Vibration Impact Assessment Manual (September 2018)	Compliant. The construction related vibrations will be below the threshold deemed perceptible or annoying. The public can use the Noise Complaint Process required in NOISE-2 to remedy unanticipated vibrations.
Federal Highway Administration 23 CFR Part 772	Compliant. NOISE-4 sets maximum project related operational noise at +5 dBA over ambient noise level at the nearest sensitive receptors NSA-1 and NSA-7, and NOISE-2 requires the project owner to implement a Noise Complaint Process if those levels are exceeded.
State	
Cal-OSHA (Cal. Code Regs., tit. 8, Sections 5095-5099)	Compliant. Conditions of Certification NOISE-3 and NOISE-5 will ensure workers are protected against the effects of occupational noise exposure.
California Department of Transportation Transportation and Construction Vibration Guidance Manual, September 2013	Compliant. The construction related vibrations will be below the threshold deemed perceptible or annoying. The public can use the Noise Complaint Process required in NOISE-2 to remedy unanticipated vibrations.
Local	
Kern County General Plan Noise Element Policies 1, 2, 5 and 7.	Compliant. Conditions of Certification NOISE-1 through NOISE-6 will ensure the General Plan policies setting noise control standards to protect public health, minimize economic impacts, and reduce noise-related annoyance are met.
Kern County Municipal Code Chapter 8.36	Compliant. Conditions of Certification NOISE-1 through NOISE-6 will ensure the Municipal Code regulations setting noise levels and restricting construction noise levels are met.

³¹ Source: Ex. 2000, FSA, p.5.9-12.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding Noise and Vibration.

iv. Agency and Public Comment

There were no agency or public comments on **Noise and Vibration** in the record of the Evidentiary Hearing.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

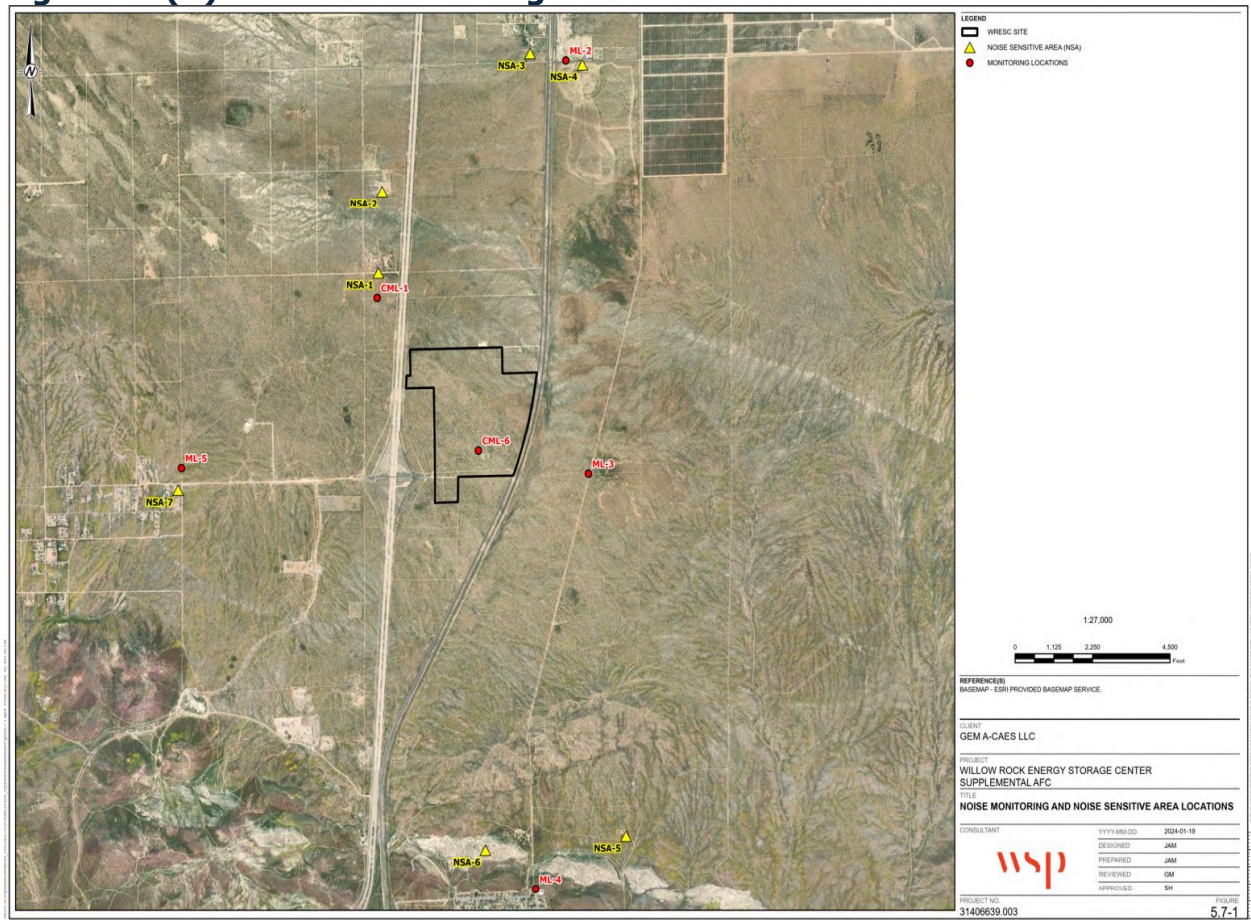
1. The nearest residential dwelling and closest sensitive receptor to the Willow Rock Energy Storage Center is 4,200 feet from the facility site.
2. There may be residential and other sensitive receptors within 150 feet of the Willow Rock gen-tie route.
3. Kern County General Plan policies will apply to construction noise that can be heard by residents or other sensitive receptors within 150 feet of the gen-tie route.
4. Construction noise is a temporary event.
5. Construction noise for the Willow Rock Energy Storage Center will last approximately 60 months.
6. Section 8.36.020 of the Kern County Municipal Code restricts construction noise near residential areas to specific hours: construction noise that is audible within 150 feet of the site is prohibited between 9:00 P.M. and 6:00 A.M. on weekdays and between 9:00 P.M. and 8:00 A.M. on weekends if the site is within 1,000 feet of an occupied residential dwelling.
7. The Energy Commission has historically determined that an increase in background noise levels up to and including 5 dBA is less than significant, and an increase of above 5 dBA could be either significant or less than significant depending upon the circumstances of a particular case.
8. The controlled detonation events that will occur at a depth of 60 feet below ground surface or more could produce noise levels of approximately 65 dBA at the closest residence 4,200 feet away (NSA-1) which would be 15 dBA above the ambient noise level of 50 dBA Leq, however the noise will be only a few seconds per event, and occurring once every 10-12 hours and only during daytime hours.

9. Condition of Certification **NOISE-4** ensures that noise from the operations of the Willow Rock Energy Storage Center will not exceed either 55 dBA Leq during daytime hours 7 A.M. to 10 P.M. and 54 dBA Leq during nighttime hours of 10 P.M. to 7 A.M. at NSA-1, or 58 dBA Leq during daytime hours 7 A.M. to 10 P.M. and 48 dBA Leq during nighttime hours of 10 P.M. to 7 A.M. at NSA-7.
10. Condition of Certification **NOISE-6** sets further limits on the hours and conditions on construction activities to prohibit excessive noise.
11. The operational noise level of the Willow Rock Energy Storage Center will be below the General Plan's threshold of 65 dBA for daytime and 55 dBA for nighttime.
12. Construction related vibrations from controlled detonations and jackhammers will dissipate below the Caltrans PPV limit of 0.16 in/sec before reaching a sensitive receptor.
13. Condition of Certification **NOISE-2** requires the project owner to establish a Noise Complaint Process to document, investigate, evaluate, and attempt to resolve all project-related noise complaints throughout the construction and operation of the project.
14. Under **NOISE-3**, the project owner of the Willow Rock Energy Storage Center is required to implement an employee noise control program to reduce employee exposure to high noise levels during construction.
15. With implementation of Conditions of Certification **NOISE-1 through NOISE-6**, Willow Rock will not have a significant direct, indirect, or cumulative impact from project-related noise or vibration.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that the Willow Rock Energy Storage Center will comply with all applicable laws, ordinances, regulations, and standards relating to Noise and Vibration.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that the Willow Rock Energy Storage Center will not result in any unmitigated direct, indirect, or cumulative impacts from construction or operational activities.

Figure 1 8(D)- 1 Noise Monitoring and Noise Sensitive Area Locations



8 Local Impact Assessment

E. Visual Resources

i. Introduction

This **Visual Resources** analysis evaluates any changes that the Willow Rock Energy Storage Center (Willow Rock or project) may induce on the visual resources in the vicinity of the project. The California Environmental Quality Act (CEQA) requires an examination of a project's visual impacts to determine whether the project has the potential to cause substantial degradation to existing views of the site and its surroundings. It addresses the project's ability to comply with applicable laws, ordinances, regulations, and standards (LORS) related to visual resources.

Evidence on the topic of **Visual Resources** is contained in Exhibits 1025, 1032-1033, 1037, 1040-1041, 1053, 1070, 1155, 1163-1169, 1172, 1180, 1186-1188, 1233, 1234, 1323, 2000, and 2001, and the Reporter's Transcript of the Evidentiary Hearing.¹

For detailed information regarding the setting and project description not provided here, please refer to the **Project Description** section of this Decision.

a. Project Description

The Willow Rock Energy Storage Center will be a 520-megawatt (MW) gross facility that would use advanced compressed air energy storage technology. The Willow Rock site is in the unincorporated area of Kern County, approximately four miles north of the community of Rosamond, a census designated place. A new, approximately 19-mile-long generation tie (gen-tie) line will connect the Willow Rock site to the Southern California Edison (SCE) Whirlwind Substation at the intersection of 170th Street West and Rosamond Boulevard, southwest of the Willow Rock site. Energy stored at the Willow Rock site will be delivered to the SCE Whirlwind Substation via this gen-tie line.²

The most publicly visible structures of Willow Rock site will would include six spherical hot water tanks (100 feet tall, 87.5-foot-diameter), four low pressure exhaust stacks (100 feet tall), two closed cooling water tanks (75 feet tall, 60-foot-diameter), two air cooled heat exchanger arrays (60 feet tall, 100 feet wide, 395 feet long), one closed cooling water air cooled heat exchanger array (60 feet tall, 100 feet wide, 430 feet long), and two cold water tanks (50 feet tall, 150-foot-diameter). Also, a surface water reservoir (approximately 21.5 acres with earthen berms 6-8 feet tall), a stormwater pond (270 feet long, 195 feet wide), an administration/control room and maintenance building (6,600 square feet approximately), and

¹ 8/21/2025 Evidentiary Hearing RT pp. 38:19 – 48:20, 48:21—68:1.

² Ex. 2000, FSA, pp. 1-1 – 1-2.

the potential storage onsite of crush rock resulting from the construction of the underground cavern (approximately 1.3 million cubic yards of crushed rock) being repurposed as an architectural berm (10 feet high, 500 feet wide). The gen-tie poles would be 100 feet tall and span approximately 19 miles (about 186 poles) from the project site to the SCE Whirlwind Substation (the preferred route).³

b. Setting

The Willow Rock site would be constructed on an approximate 88.6-acre portion of a 112-acre parcel that is relatively flat undeveloped land consisting of desert scrub, grasses, and 3,970 western Joshua trees⁴ along the corner of Dawn Road (a county unimproved road) and Sierra Highway in a rural, open space, and arid (desert) region in the northern Antelope Valley, in southeastern Kern County, California. California State Route 14 (SR-14), a north-south highway that connects Los Angeles to the northern Antelope Valley and western Mojave Desert, is about one-third of a mile to the west.⁵ Soledad Mountain is about four miles north of the Willow Rock site along the west side of the highway. The mountain is an approximate six-square-mile rugged topographic prominence that rises above the valley floor, 4,190 feet at peak. It has been extensively mined for gold and silver since the late 1890s.⁶ The Edwards & Sanborn Solar and Energy Storage facility (4,600 acres, 1.9 million photovoltaic solar panels installed, 120,720 batteries installed) is one and a half miles to the north of the Willow Rock site. Rosamond, an unincorporated community (population 20,961, 2020 U.S. Census) is about four miles to the south. The Rosamond Hills (3,322 feet elevation peak) are three and a half miles to the west. A portion of the west border of Edwards Air Force Base is about a half mile away to the east. The main base is approximately 11 miles further east. Rosamond Lake, a natural dry lakebed on the base, is four and a half miles to the southeast.⁷

ii. Environmental Analysis of Visual Resources

The evaluation of impacts from the Willow Rock project to visual resources considers potentially significant impacts using the questions from the CEQA Guidelines Appendix G listed in **Table 8.E-1**, and applicable federal, state, and local rules and regulations.

³ Ex. 2000, FSA, pp. 5.15-12 – 5.15-13.

⁴ See Ex. 2000, FSA, Table 7.A-3 for census of western Joshua tree in the survey area for the Willow Rock site and gen-tie route.

⁵ Ex. 2000, FSA, p. 5.15-1.

⁶ Ex. 2000, FSA, p. 5.15-18.

⁷ Ex. 2000, FSA, p. 5.15-1.

TABLE 8.E-1 Aesthetics Checklist⁸				
Except as provided in Public Resources Code Section 21099,^[9] would the project:	Significant and Unavoidable Impact	Less Than Significant with Mitigation Incorporated	Less Than Significant Impact	No Impact
a. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐
c. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage points). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☒	☐	☐	☐
d. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☒	☐	☐

Completing an evaluation of visual resources typically entails: examining aerial and street view imagery, reviewing Geographic Information System (GIS) information, analyzing site and vicinity photographs including any photographs from a key observation point (KOP) and photo-realistic simulation(s) of the project in the existing landscape, assessing elevations, architectural and site development plans, drawings, and renderings; reviewing applicable federal, state, and local government codes and regulations, maps and plans, consulting tour book guides and road atlases, and a visit to the project site, key observation point(s), and surrounding area to determine the CEQA Guidelines level of effect on the environment and conformance with LORS by the project.¹⁰

a. Would the project “[h]ave a substantial adverse effect on a scenic vista?”

The proposed project would be constructed on 88.6 acres of a 112-acre parcel that is relatively flat undeveloped land having desert scrub, grasses, and Western Joshua trees.¹¹ The Kern

⁸ Source: Ex. 2000, FSA, p. 7, citing Cal. Code Regs., Tit. 14, Appendix G, Environmental Checklist Form, Aesthetics, as amended 12/28/18.

⁹ See also Pub. Resources Code, §§ 21099, 21099(d)(1).

¹⁰ Ex. 2000, FSA, p. 5.15-1.

¹¹ Ex. 2000, FSA, p. 5.15-12.

County General Plan dated September 22, 2009, does not show a scenic vista or have an applicable general plan policy pertaining to a scenic vista that includes the project site and the surrounding area. No county ordinance designates any scenic vista that includes the project site.¹²

Willow Rock will not be within an area with a distant view of high pictorial quality perceived through and along a corridor or opening. Rather, Willow Rock will be on a “Low Level” — valley floor, or shoreline being the former position of an alluvial plain, lake, or shore, the northern Antelope Valley floor, and not within a scenic vista.¹³

Thus, the construction and operation of the project would create a less than significant effect on the environment to a scenic vista.

b. Would the project “[s]ubstantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?”

This analysis evaluates whether the project would substantially damage—eliminate or obstruct—public view of a scenic resource, and whether the project would be situated so that it changes the visual appearance of a scenic resource by being in sharp contrast with the existing environment using a three-mile distance zone surrounding the project site. An adverse effect would exist if the project eliminated or obstructed a public view of a scenic resource, and/or change its visual appearance.¹⁴

Here, the project site is not shown along a designated State scenic highway.¹⁵ Moreover, there are no designated, protected, or other identified scenic resources on the Willow Rock site or in its vicinity.¹⁶

Construction and operation of the project would neither eliminate nor obstruct a public view of a scenic resource nor change the visual appearance of it. Therefore, the project would create a less than significant effect on the environment.¹⁷

¹² Ex. 2000, FSA, p. 5.15-13; see *Mira Mar Mobile Community v. City of Oceanside* (2004) 119 Cal.App.4th 477 [lead agencies may look to local planning thresholds for guidance when defining the visual impact standard].

¹³ Ex. 2000, FSA, pp. 5.15-12 – 5.15-13.

¹⁴ Ex. 2000, FSA, pp. 5.15-14 – 5.15-15.

¹⁵ Ex. 2000, FSA, p. 5.15-15.

¹⁶ Ex. 2000, FSA, pp. 5.15-14 – 5.15-15.

¹⁷ Ex. 2000, FSA, p. 5.15-15.

c. Would the project “[i]n non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings?”

The Willow Rock Energy Storage Center will substantially degrade the existing visual character or quality of public views of the site and its surroundings.

The Willow Rock site is in a non-urbanized area. For a project in a non-urbanized area, an adverse effect exists if the project significantly degrades the existing visual character or quality of public views of the site and its surroundings.¹⁸

This analysis evaluates change to visual character from representative fixed positions in publicly accessible locations called Key Observation Points (KOPs), from which a public view of the project is analyzed and evaluated in the context of the landscape. This analysis compares photographs of the existing physical environment at the KOPs with photo-realistic visual simulations of Willow Rock as viewed from the same KOPs.¹⁹

From each KOP, staff considers the following factors:

- The project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape.
- The visual absorption capability of the landscape.
- The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape.²⁰

For the Willow Rock project, Staff focused its analysis on the views from four of the seven KOPs identified by the Applicant. From each of those KOPs, Staff compared photographs showing existing conditions with photographs from the same KOP including project simulations. The locations of all KOPs considered are illustrated in **Figure 8.E-1**, below. Staff’s analysis focused on KOPs at the following locations:

- KOP 1 – State Highway 14, South of the Dawn Road Highway overpass.
- KOP 2 – State Highway 14, Dawn Road off-ramp East.
- KOP 3 – 10th Street West, parallel to the Willow Rock site.
- KOP 4 – Rosamond Boulevard West, near a Los Angeles Department of Water & Power easement.²¹

¹⁸ Ex. 2000, FSA, p. 5.15-15; see Pub. Resources Code, § 25525 (requires a project to be in conformance with applicable LORS).

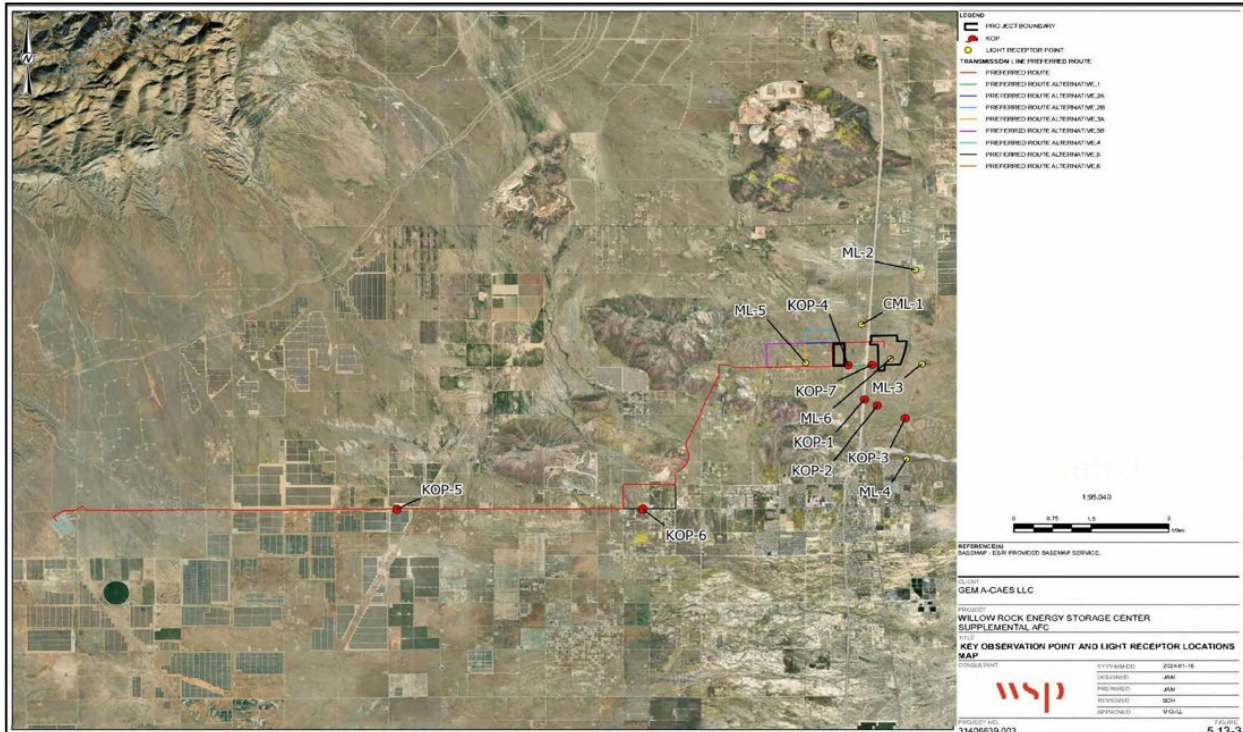
¹⁹ Ex. 2000, FSA, p. 5.15-16.

²⁰ See e.g., Ex. 2000, pp. 5.15-19, 5.15-78 – 5.15-89.

²¹ Ex. 2000, FSA, pp. 5.15-18 – 5.15-20.

Note that Condition of Certification **VIS-1** provides that the ultimate color of the facility may vary from the color shown in the visual simulations based on a study to select colors for project components that are compatible with the surrounding physical landscape. The potential variance in color permitted by Condition of Certification **VIS-1** does not alter the conclusions in this Decision regarding the impact of the project.²²

Figure 8.E-1 KOP LOCATIONS²³



1. KOP 1

KOP 1 is an observation point from the north bound lane of State Route 14 approximately 1/2-mile south of the Dawn Road highway overpass. The project site is approximately 3,000 feet to the northeast. There is no "object of aesthetic significance" at this KOP.²⁴ **Figure 8.E-2**, below shows the existing conditions at KOP 1. **Figure 8.E-3** below shows the existing conditions at KOP 1 plus the proposed project.

²² See Ex. 2000, FSA, p. 5.15-55.

²³ Ex. 2000, FSA, p. 5.15-27.

²⁴ Ex. 2000, FSA, p. 5.15-19.

Figure 8.E-2 KOP 1 EXISTING CONDITIONS²⁵



Figure 8.E-3 KOP 1 PLUS SIMULATION OF PROPOSED PROJECT²⁶



Comparing photographs from KOP 1 showing the existing physical environment with photo-realistic visual simulations of Willow Rock from KOP 1, the analysis finds the following:

²⁵ Ex. 2000, FSA, p. 5.15-28.

- The project prominence (basic design element contrast, scale dominance, spatial dominance) in the existing physical landscape rated strong.
- The visual absorption capability of the landscape rated low.
- The magnitude of change (dominant, prominent, conspicuous, apparent, unobtrusive) in the landscape rated conspicuous, meaning the project is clearly visible and noticeable in the view in the landscape.²⁷

This combination of ratings yields a conclusion that the project would have a less than significant effect on the environment in the degrading of the existing visual character or quality of the public view of the site and its surroundings.²⁸

2. KOP 2

KOP 2 is an observation point from the top of the State Route 14 off-ramp at Dawn Road East. The Willow Rock site is approximately 1,000 feet east along an unimproved (dirt) county road segment of Dawn Road. There is no “object of aesthetic significance” at KOP 2.²⁹ **Figure 8.E-4** below shows the existing conditions at KOP-2. **Figure 8.E-5** below shows the existing conditions at KOP 2 plus the proposed project.

Figure 8.E-4 KOP 2 EXISTING CONDITIONS³⁰



²⁶ Ex. 2000, FSA, p. 5.15-29.

²⁷ Ex. 2000, FSA, pp. 5.15-19, 5.15-78 – 5.15-89.

²⁸ Ex. 2000, FSA, p. 5.15-19.

²⁹ Ex. 2000, FSA, p. 5.15-19.

³⁰ Ex. 2000, FSA, p. 5.15-32.

Figure 8.E-5 KOP 2 PLUS SIMULATION OF PROPOSED PROJECT³¹



Reviewing Google Maps street view and comparing photographs from KOP 2 showing the existing physical environment with photo-realistic visual simulations of Willow Rock from KOP 2, the analysis finds the following:

- The project prominence in the existing physical landscape rated severe.
- The visual absorption capability of the landscape rated low.
- The magnitude of change in the landscape rated dominant, meaning the project commands or controls the view in the landscape.³²

This combination of ratings yields a conclusion that the project would have a significant effect on the environment in the degrading of the existing visual character or quality of the public view of the site and its surroundings.³³

3. KOP 3

KOP 3 is an observation point from 10th Street West, a county unimproved road that parallels the project site, Sierra Highway, and the west boundary of Edwards Air Force Base. The Willow Rock site is about a ½-mile away. Soledad Mountain is in the distance. There is no “object of aesthetic significance” at KOP 3.³⁴ **Figure 8.E-6** below shows the existing

³¹ Ex. 2000, FSA, p. 5.15-33.

³² Ex. 2000, FSA, pp. 5.15-19, 5.15-90 - 5.15-101.

³³ Ex. 2000, FSA, p. 5.15-19.

³⁴ Ex. 2000, FSA, p. 5.15-20.

conditions at KOP 3. **Figure 8.E-7** below shows the existing conditions at KOP 3 plus the proposed project.

Figure 8.E-6 KOP 3 EXISTING CONDITIONS³⁵



³⁵ Ex. 2000, FSA, p. 5.15-35.

Figure 8.E-7 KOP 3 PLUS SIMULATION OF PROPOSED PROJECT³⁶



Reviewing Google Maps street view and comparing photographs from KOP 3 showing the existing physical environment with photo-realistic visual simulations of Willow Rock from KOP 3, the analysis finds the following:

- The project prominence in the existing landscape rated strong.
- The visual absorption capability of the landscape rated low.
- The magnitude of change in the landscape rated dominant, meaning the project commands or controls the view in the landscape.³⁷

This combination of ratings yields a conclusion that the project would have a significant effect on the environment in the degrading of the existing visual character or quality of the public view of the site and its surroundings.³⁸

4. KOP 4

KOP 4 is an observation point from a spot along the applicant preferred aboveground transmission gen-tie pole structure line route on Rosamond Boulevard, near a Los Angeles Department of Water and Power overhead transmission line route easement. The SCE Whirlwind Substation is about six and a half miles further west. The 230 kV gen-tie route spans approximately 19 miles from the Willow Rock site to the SCE Whirlwind Substation and with about 186 poles. The gen-tie pole structures would be made of steel, 100 feet tall and six

³⁶ Ex. 2000, FSA, p. 5.15-33.

³⁷ Ex. 2000, FSA, pp. 5.15-20, 5.15-102 – 5.15-113.

³⁸ Ex. 2000, FSA, p. 5.15-20.

feet in diameter at the base. The poles are expected to be spaced 600 to 900 feet from each other. There is no “object of aesthetic significance” at KOP 4.³⁹ **Figure 8.E-8** below shows the existing conditions at KOP 4. **Figure 8.E-9** below shows the existing conditions at KOP 4 plus the proposed project.

Figure 8.E-8 KOP 4 EXISTING CONDITIONS⁴⁰



³⁹ Ex. 2000, FSA, p. 5.15-20.

⁴⁰ Ex. 2000, FSA, p. 5.15-35.

Figure 8.E-9 KOP 4 PLUS SIMULATION OF PROPOSED PROJECT⁴¹



Comparing photographs from KOP 4 showing the existing physical environment with photo-realistic visual simulations of Willow Rock from KOP 4, the analysis finds the following:

- The project prominence in the existing landscape rated strong.
- The visual absorption capability of the landscape rated low.
- The magnitude of change in the landscape rated prominent, meaning the project stands out or is striking in the view in the landscape.⁴²

This combination of ratings yields a conclusion that the project would have a significant effect on the environment in the degrading of the existing visual character or quality of the public view of the site and its surroundings.⁴³

Therefore, applying Staff's methodology, the Willow Rock Energy Storage Center will have a significant effect on the environment in the degrading of the existing visual character or quality of the public view of the Willow Rock site and its surroundings based on the comparison of pre-project and post-construction views from KOP-2, KOP-3, and KOP-4.⁴⁴

The Applicant disputes Staff's methodology for assessing impacts on these public views. The Applicant implicitly acknowledges that quantifying the degree of change or contrast from the

⁴¹ Ex. 2000, FSA, p. 5.15-33.

⁴² Ex. 2000, FSA, pp. 5.15-20 – 5.15-21, 5.15-114 - 5.15-125.

⁴³ Ex. 2000, FSA, p. 5.15-21.

⁴⁴ Ex. 2000, FSA, p. 5.15-21.

existing visual character or quality of public views of the site and its surroundings is multi-faceted and amenable to different approaches. The Applicant would additionally emphasize the viewer's experience or "viewer sensitivity" to the changes based on subjective psychological feelings. The Applicant's argument assumes that the viewers from KOP-2, KOP-3, and KOP-4 are "predominantly automobile drivers, who by the nature of their focused activities are less sensitive viewers."⁴⁵ We note that Applicant's evidence describes KOP-3 as a dirt road accessible by off-road vehicles, and that the viewers at this location will be recreational viewers described in the SAFC as "tend[ing] to be sensitive to visual disturbance that would adversely affect the setting of their activity."⁴⁶ Applicant's evidence further describes the KOP-3 as representative of an "unobstructed observer-superior view" and that the level of visual contrast of the Willow Rock project will be prominent in the landscape. The Applicant characterizes viewer sensitivity at this KOP as "moderate to high."⁴⁷ Without deciding whether subjective viewer sensitivity is an appropriate element of this CEQA criterion regarding the degradation of the existing visual character or quality of public views of the site and its surroundings, the Applicant's own evidence indicates that for recreational users at this vantage point, the public view would be degraded.

Applicant suggests that, even if there is a significant impact on public views from the Willow Rock Energy Storage Center, it can be mitigated pursuant to **VIS-1** by treating the above-ground components with exterior coatings, colors, or finishes to blend with the general hues of the natural physical environment of the Willow Rock site.⁴⁸ However, Staff's analysis emphasizes that the degradation of the public views stems from several factors that cannot be mitigated with color or coatings alone, including the shapes, sizes, and number of buildings, structures, and equipment, and the impacts on flora including the western Joshua tree.⁴⁹

We concur with Staff that the **Visual Resources** Conditions of Certification, while essential, are not sufficient to lessen the impact of the project on public views to a level below significant. Substantial evidence in the record supports the finding of an unmitigated significant impact to public views of the site and surrounding landscape where the Willow Rock Energy Storage Center will be constructed.

5. Project Emissions

This analysis also considers whether project emissions could have an impact on visual resources. Here, Willow Rock will use a dry cooling system using air-cooled heat exchangers cool and/or condense process steam with ambient air as the cooling medium rather than

⁴⁵ Applicant's Opening Brief filed September 9, 2025 (TN 265918), pp. 8-9.

⁴⁶ Ex. 1032, p. 5.13-9, and Table 5.13-5 (Visual Contrast and Visual Impact for Key Observation Points).

⁴⁷ Ex. 1032, Table 5.13-5.

⁴⁸ Applicant's Opening Brief filed September 9, 2025 (TN 265918), p. 9.

⁴⁹ Ex. 2001, Staff's Rebuttal Testimony, pp. Visual Resources 1 – 10.

water. No warm moisture-filled exhaust is emitted in the atmosphere that could condense forming a visible plume.⁵⁰ Thus, any visible plume from the project would have a less than significant effect on the environment in the degrading of the existing visual character or quality of the public view of the site and its surroundings. Moreover, for the same reason, fogging and icing offsite would be rare and have a less than significant effect on the environment.⁵¹

The project would have three diesel generators to provide backup generation in case of an interruption to the normal electricity supply to or at the facility, and one diesel generator for fire water pump operation. Manufacturer performance data provided by the Applicant indicates generator exhaust stack flow gas temperatures at a 100 percent load standby are 914 degrees and 1025 degrees Fahrenheit. These high temperatures quickly evaporate the necessary saturated rising moisture exiting the generator exhaust stack that could condense in the atmosphere to form a visible plume. The stack emissions would be a hot, dry air mass flow. Thus, there would be no visible aesthetic-related effect on the environment from the diesel generators.⁵²

d. Would the project “[c]reate a new source of substantial light or glare which would adversely affect day or nighttime views in the area?”

New artificial light traversing off the project site and the construction laydown areas in the existing physical environment during nighttime would create light trespass that is a potential significant effect on the environment.⁵³ Artificial light at night has negative and deadly effects on many creatures, including amphibians, birds, mammals, insects, and plants. Predators use light to hunt, and prey species use darkness as cover.⁵⁴ Bright night lighting could disturb wildlife in areas adjacent to the project site, such as nesting birds, foraging mammals, and flying insects. Night lighting also is suspected to attract migratory birds to areas and, if the lights are on tall structures, collisions could occur. Additionally, certain lighting may attract insects which in turn may attract birds and bats to forage.⁵⁵

Kern County Zoning Ordinance section 19.81 provides requirements intended to reduce unnecessary night lighting and to minimize lighting impacts on surrounding properties.⁵⁶

Light, glare, and reflectance emitted from a project are analyzed to determine if each would create an adverse effect to the existing physical environment offsite and skyward (light

⁵⁰ Ex. 2000, FSA, p. 5.15-44.

⁵¹ Ex. 2000, FSA, p. 5.15-40.

⁵² Ex. 2000, FSA, pp. 5.15-40 – 5.15-41.

⁵³ Ex. 2000, FSA, p. 5.15-46.

⁵⁴ Ex. 2000, FSA, p. 5.15-42.

⁵⁵ Ex. 2000, FSA, p. 5.15-46.

⁵⁶ Ex. 2000, FSA, p. 5.15-41.

pollution and reflectance). Light pollution “occurs when outdoor lighting is misdirected, misplaced, unshielded, excessive or unnecessary.”⁵⁷ Reflectance is the proportion of perpendicular incident light reflected from the surface or body of a material.⁵⁸ All surfaces reflect light.⁵⁹

Existing nighttime conditions around the Willow Rock project site show a relatively high brightness on a light pollution map.⁶⁰

Willow Rock will require outdoor luminaires to illuminate driveways, entrances, walkways, operation, parking and loading areas, and for safety and security. Reflectance would occur from exterior surfaces of buildings, structures, and equipment.⁶¹

Construction of Willow Rock will sometimes occur at night.⁶² Construction-related lighting will be limited to the period of the cavern excavation process, which is estimated to last for 41 months during which there will be intermittent localized 24-hour construction activities. The proposed construction laydown and parking areas for the Willow Rock site range between 69 and 73 acres.⁶³

Operation of the Willow Rock project will require onsite lighting for safety and security and approach lighting for the substation, control equipment enclosures, and operator interface locations. This will include a combination of pole-mounted LED lighting ranging in height from 11 feet to 40 feet and wall-mounted fixtures on buildings mounted between 23 feet and 30 feet.⁶⁴

Condition of Certification **VIS-3** prohibits the project owner to allow light to be a pollutant offsite and skyward, “light pollution.” Moreover, Condition of Certification **VIS-3** requires the project owner to prepare and submit a light pollution control plan for the project, or equivalent plan, to the Director of Planning and Natural Resources Department for the County of Kern for review and comment and to the compliance project manager for approval that satisfies the following requirements for lighting:

- Light only be on when needed.
- Light only the area that needs it.
- Illuminate no brighter than necessary.

⁵⁷ Ex. 2000, FSA, p. 5.15-41.

⁵⁸ Ex. 2000, FSA, p. 5.15-43.

⁵⁹ Ex. 2000, FSA, p. 5.15-41.

⁶⁰ Ex. 2000, FSA, p. 5.15-41.

⁶¹ Ex. 2000, FSA, p. 5.15-41.

⁶² Ex. 2000, FSA, pp. 5.15-44 – 5.15-45.

⁶³ Ex. 2000, FSA, p. 5.15-45.

⁶⁴ Ex. 2000, FSA, p. 5.15-45.

- Minimize blue light emissions.
- Are fully shielded (BUG Rating U0).
- Are DarkSky International “DarkSky Approved” program products.
- Comply with the applicable adopted outdoor lighting regulations of the County of Kern (Section 19.81 Outdoor Lighting “Dark Skies Ordinance”).

Shielding is a key element in night-sky-friendly lighting. Fully shielded fixtures, also known as “full-cutoff” fixtures, are the gold standard. No light escapes upward or outward and a passerby is not blinded by the glare from an exposed bulb.⁶⁵ For Willow Rock, when nighttime construction activity is required, all necessary temporary lighting will be directed on work areas and away from sensitive receptors, such as nearby residences.⁶⁶ All new operational lighting will include shielding and will be directed downward to minimize the potential for glare, light pollution, and skyglow. The luminaires used for Willow Rock will include a side shield for Dark Sky compliance.⁶⁷

Project lighting will use dimmable motion-sensitive and scheduling controls to minimize the use of the lights. Light level will comply with recommendations of the Illuminating Engineering Society, as well as CEC and local jurisdictions’ ordinances or codes, to ensure lighting is no brighter than necessary.⁶⁸

Condition of Certification **VIS-1** requires the project owner to use exterior surface coatings, colors, finishes, materials, and a gloss level that diffuse illumination or collection, reflectance and scattering offsite and skyward. It requires the project owner to submit to the Compliance Project Manager for approval an exterior surface coatings, colors, finishes, and materials plan.

Finishes for materials and surface treatments will be predominately flat and non-reflective to minimize the potential for glare by the project. The Applicant-supplied renderings of the facility show that a majority of the components would have a beige or similar color, and a semi-gloss. The 230 kV transmission overhead line pole structures will be constructed from steel and coated with white corrosion and glare resistant material.⁶⁹

The evidence contains statements demonstrating the project owner’s intent to implement shielding, directional light, non-reflectance materials, and other light pollution and reflectance facility design measures.⁷⁰

⁶⁵ Ex. 2000, FSA, p. 5.15-46.

⁶⁶ Ex. 2000, FSA, pp. 5.15-44 – 5.15-45.

⁶⁷ Ex. 2000, FSA, p. 5.15-45.

⁶⁸ Ex. 2000, FSA, pp. 5.15-45 – 5.15-46.

⁶⁹ Ex. 2000, FSA, p. 5.15-46.

⁷⁰ Ex. 2000, FSA, p. 5.15-46.

Thus, with the effective implementation of Conditions of Certification **VIS-1** and **VIS-3** the level of new light, glare, and reflectance emitted by the project and from the construction laydown areas in the existing landscape would conform with the County ordinance and have a less than significant effect on the environment.⁷¹

e. Cumulative Impacts to Visual Resources

This cumulative analysis considers the following past, present, and reasonably foreseeable projects identified within a three-mile radius of the proposed project:

- Antonia & Jeanette Vergara – proposed construction materials recycling facility.
- Babkan Safarian & Denise Rodriguez – proposed vehicle and cargo container storage facility.
- Edwards & Sanborn Solar and Energy Storage – existing solar and energy storage facility.
- Halferty Development – proposed mixed commercial and retail development.
- Investment Concepts, Inc. – proposed apartment complex.
- Gem Hill Quarry project – proposed surface mining operation.
- Golden Queen Mine – existing gold, silver, and aggregate mining operation.
- Mojave Micro Mill project – construction of a micro steel mill facility and solar array.
- Westpark, LLC – Howard Field – proposed hotel development.⁷²

Physical changes by these projects could degrade the existing visual character or quality of the public views of the listed cumulative project site and surroundings. These impacts stem from incremental physical changes in the existing landscape due to "project prominence" ("basic design element contrast," "scale dominance," and "spatial dominance"), "visual absorption capability," and the distance and "line-of-sight" from the Willow Rock project. Effects pertaining to aesthetics/visual resources from these projects could potentially combine with effects by the proposed Willow Rock Energy Storage Center project to become "cumulatively considerable" for "Aesthetics."⁷³

The identified cumulative projects are far enough away from the Willow Rock project that visual impacts will not combine to amplify the visual impacts of the Willow Rock project. The Willow Rock project will not cause a cumulatively considerable effect, and it will result in a less than significant effect on the environment for "Aesthetics."⁷⁴

⁷¹ Ex. 2000, FSA, p. 5.15-46.

⁷² Ex. 2000, FSA, pp. 5.15-6, 5.15-46.

⁷³ Ex. 2000, FSA, pp. 5.15-46 – 5.15-47.

⁷⁴ Ex. 2000, FSA, p. 5.15-46.

Construction activities of Willow Rock could become cumulatively considerable if they occur at the same time as the construction activities of other projects, or before or after the construction of the proposed project. Construction activities including the use, storage, and movement of equipment and materials, and night lighting on or from these sites may combine with activities, equipment operation, and night light on the proposed project site. The construction activities may lead to a continued presence of construction activity including light emission in the northern Antelope Valley for several years. With the implementation of Condition of Certification **VIS-3**, the incremental effect by the Willow Rock Energy Storage Center would not be cumulatively considerable and have a less than significant effect on the environment.⁷⁵

iii. Compliance with Laws, Ordinances, Regulations and Standards (LORS)

Table 8.E-2 demonstrates that, with implementation of Conditions of Certification, the Willow Rock Energy Storage Center will comply with all applicable LORS relating to visual resources.

TABLE 8.E-2 Conformance With Applicable LORS⁷⁶	
Applicable LORS	Conformance and Basis For Determination
State	
California Scenic Highway Program. Section 263 of the Streets and Highways Code, the "State Scenic Highway System List," provides a list of highways that have been either officially designated or are eligible for designation as a State scenic highway.	Compliant. The "State Scenic Highway System List" shows the project site is not along a designated State scenic highway.
Local: Kern County General Plan	
Land Use, Open Space, and Conservation Element. <u>"Map Code 8.5 (Resources Management)"</u> Primarily open space lands containing important resource values, such as wildlife habitat, scenic values, or watershed recharge areas. These areas may be characterized by physical constraints, or may constitute an important watershed recharge area or wildlife habitat or may have value as a buffer between resource areas and urban areas. Other lands with this resource attribute are undeveloped, non-urban areas that do not warrant additional planning within the foreseeable future because of current	Compliant. The project site is within Map Code 8.5 (Resources Management).

⁷⁵ Ex. 2000, FSA, p. 5.15-46.

⁷⁶ Source: Ex. 2000, FSA, pp. 5.15-48 – 5.15-52.

TABLE 8.E-2 Conformance With Applicable LORS⁷⁶

Applicable LORS	Conformance and Basis For Determination
population (or anticipated increase), marginal physical development, or no subdivision activity. Uses shall include, but are not limited to, the following: Recreational activities; livestock grazing; dry land farming; ranching facilities; wildlife and botanical preserves; and timber harvesting; one single-family dwelling unit; irrigated croplands; water storage or groundwater recharge areas; mineral; aggregate; petroleum exploration and extraction; open space and recreational uses; one single-family dwelling on legal residentially zoned lots on effective date of this General Plan; land within development areas subject to significant physical constraints; State and federal lands which have been converted to private ownership." (Kern County 2009, Land Use, Open Space, and Conservation Element, p. 55)	
Energy Element. "The Kern County Energy Element is a comprehensive document which defines critical energy related issues facing the County and sets forth goals, policies, and implementation measures to protect the County's energy resources and encourage orderly energy development while affording the maximum protection for the public's health, safety, and the environment." (Kern County 2009, Energy Element, p. 183) 5.4.7 Transmission Lines "Transmission lines are often the most noticeable and disruptive part of energy development. Increased development of electrical generating plants will require new transmission line construction. For some kinds of technology, transmission lines can be constructed in developed areas. In resource areas, which are presently undeveloped, construction will require greater disturbance and may have more significant impacts. ... Goal To encourage the safe and orderly development of transmission lines to access Kern County's	Compliant. The project would have about 186 gen-tie poles 100 feet tall spanning 19 miles from the project site to the SCE Whirlwind substation. The proposed preferred transmission overhead line 19-mile route is not traversing a visually sensitive area as indicated by the county General Plan, county staff, and as determined by CEC staff.

TABLE 8.E-2 Conformance With Applicable LORS⁷⁶

Applicable LORS	Conformance and Basis For Determination
electrical resources along routes, which minimize potential adverse environmental effects. ... Policies 5. The County should discourage the siting of above-ground transmission lines in visually sensitive areas.” (Kern County 2009, Energy Element, p. 212)	
Local: Kern County Ordinances	
Kern County Zoning Map No. 213 shows the project site is zoned A (Exclusive Agriculture) district. “The purpose of the Exclusive Agriculture (A) District is to designate areas suitable for agricultural uses and to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to nonagricultural uses. Uses in the A District are limited primarily to agricultural uses and other activities compatible with agricultural uses.” (Kern County Zoning Ordinance, Chapter 19.12, section 19.12.010) Section 19.12.030 Uses Permitted With a Conditional Use Permit. Resource Extraction and Energy Development Uses Electrical power generating plant.	Compliant. On February 11, 2025, the Kern County Board of Supervisors adopted a zone change on the subject property changing it from A-1 (Limited Agriculture) to A (Exclusive Agriculture).
Section 19.12.080 Height Limit. The following height limits apply in the A District: “B. Radio, television, communication, and microwave towers shall not exceed one hundred and fifty (150) feet in height. C. There is no height limit on other nonresidential structures, except in areas of protected military airspace as specified in Section 19.08.160.” (Kern County Zoning Ordinance, Chapter 19.12, section 19.12.080)	Compliant. The project includes construction of six 100-foot-tall spherical hot water tanks, four 100-foot-tall low pressure exhaust stacks, two 75-foot-tall, closed cooling water tanks, two air cooled heat exchanger arrays (60-feet-tall), one closed cooling water air cooled heat exchanger array (60-feet-tall), and two 50-foot-tall cold-water tanks. The project also includes about 186 gen-tie poles 100 feet tall spanning 19 miles from the project site to the SCE Whirlwind substation.
Section 19.12.110 Signs. The following types of signs are permitted in the A District in accordance with the requirements of Chapter 19.84 of this title:	Compliant. A letter received from the Kern County Planning and Natural Resources Department dated October 30, 2024, included recommended conditions of approval on the

TABLE 8.E-2 Conformance With Applicable LORS⁷⁶

Applicable LORS	Conformance and Basis For Determination
B. Temporary construction signs. F. Institutional identification signs, when approved in conjunction with a conditional use permit.	proposed Willow Rock Energy Storage Center project that include the following: "29. All signs shall comply with the signage regulations of the applicable base zone district and with Chapter 19.84 of the Zoning Ordinance. 30. All signs shall be approved by the Director of the Kern County Planning and Natural Resources Department prior to installation." Section 5.13 Visual Resources in the Applicant's AFC and supplemental information to it are silent regarding signs on the project site, and the construction laydown area(s). Staff has proposed VIS-2 so that the project would be in conformance with this County ordinance requirement with its implementation.
Section 19.81 Outdoor Lighting "Dark Skies Ordinance." "The following general standards apply to all outdoor lighting fixtures subject to this ordinance. A. SHIELDING All outdoor lighting fixtures which utilize one hundred (100) watts or more (based on an incandescent bulb) or emit one thousand six hundred (1,600) lumens or more per fixture, shall be fully shielded per the definition listed in this chapter, unless the fixture is exempted by this chapter. All floodlights which utilize less than one hundred (100) watts per fixture must be at least partially shielded to reduce light spillover onto adjacent properties. Additionally, the light source (bulb) within all lighting fixtures shall be oriented downward to prevent direct uplighting, except as permitted by Section 19.81.040(F). ... C. MAINTANENCE Outdoor light fixtures shall be kept in good working order and shall be continuously maintained in a manner that serves the original	Compliant. A letter received from the Kern County Planning and Natural Resources Department dated October 30, 2024, included recommended conditions of approval on the proposed Willow Rock Energy Storage Center project that include the following: "22. Compliance with the Kern County Dark Sky Ordinance (Chapter 19.81 – Outdoor Lighting – Dark Skies) is required for both construction and operations. 23. All exterior lighting shall be directed away from adjacent properties and roads. The lighting standards shall be equipped with glare shields or baffles. Light fixtures shall be maintained in sound operating conditions at all times." The applicant indicates in the AFC that operational lighting on the project site would be limited to areas required for safety, would be directed on site to avoid backscatter, and would be shielded from public view to the extent practical. All lighting that is not required to be on during nighttime hours would be controlled with sensors or switches operated such that the lighting would be on only when needed.

TABLE 8.E-2 Conformance With Applicable LORS ⁷⁶	
Applicable LORS	Conformance and Basis For Determination
design intent of the system and ensures continued compliance with this chapter. D. FIXTURE HEIGHT All light fixtures that are mounted on a building or structure (attached lighting) and all lighting fixtures that are not attached (freestanding lighting) shall conform to the mounting height limitations as listed in ... Table 19.81.050.C.1. Maximum fixture height shall be measured from the finished interior grade of the mounting area to the top point of the lighting fixture. E. FIXTURE TYPES The following figures illustrate examples of fully shielded and not fully shielded outdoor lighting fixtures. Note: Even those types of fixtures shown as fully shielded must be installed and aimed properly to comply with this chapter. F. UPLIGHTING AND LIGHTING AIMED AGAINST STRUCTURES OR LANDSCAPING Direct upward lighting and lighting aimed against structures shall be prohibited except as [explained in this subsection]. J. HOURS OF OPERATION (CURFEW) AND SECURITY LIGHTING ... 2. Outdoor lighting fixtures located outside of a residential zone district (E, R-1, R-2, R-3), or located more than twenty-five (25) feet from any existing single-family residence within any other zone district shall adhere to the following: a. All lighting fixtures shall be subject to the shielding provisions as listed in Section 19.81.040 of this chapter. b. Lighting fixtures listed under this provision shall not be subject to an illumination curfew.” (Kern County Zoning Ordinance, Chapter 19.81, section 19.81.040)	Staff has proposed VIS-3 so that the project would be in conformance with this County ordinance requirement with its implementation.

The evidence indicates, and we find, that with the imposition and implementation of the Conditions of Certification, the construction and operation of the Willow Rock project will comply with all applicable LORS regarding **Visual Resources**.

iv. Agency and Public Comment

There were no agency or public comments on **Visual Resources** in the record of the Evidentiary Hearing.

v. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. The Willow Rock Energy Storage Center is in a non-urbanized area.
2. There are no scenic vistas within the visual sphere of influence of the Willow Rock Energy Storage Center.
3. The Willow Rock Energy Storage Center will have no impact on a scenic vista.
4. There are no designated, protected, or other identified scenic resources on the Willow Rock site or in its vicinity.
5. Construction and operation of the project would not eliminate or obstruct a public view of a scenic resource nor change the visual appearance of it. Therefore, the project would create a less than significant effect on any scenic resource.
6. The evidence contains an evaluation of four Key Observation Points and the potential of the project to degrade the existing visual character or quality of public views of the site and its surroundings.
7. Impacts to visual resources caused by the Willow Rock Energy Storage Center will be significant and unavoidable at three Key Observation Points (KOP 2, KOP 3, and KOP 4).
8. Condition of Certification **VIS-1** provides that the ultimate color of the facility may vary from the color shown in the visual simulations based on a study to select colors for project components that are compatible with the surrounding physical landscape. The potential variance in color permitted by Condition of Certification **VIS-1** does not alter the conclusions in this Decision regarding the impact of the project.
9. The Willow Rock Energy Storage Center will have little or no impact on visual resources from project emissions.
10. With adherence to the Kern County Outdoor Lighting "Dark Skies Ordinance" (Section 19.81) and implementation of Conditions of Certification **VIS-1** and **VIS-3**, the Willow Rock Energy Storage Center will not cause any new source of substantial light or glare that would have any significant adverse effect on daytime or nighttime views in the area.
11. With the adherence of the project to the Kern County Outdoor Lighting "Dark Skies Ordinance" (Section 19.81), and implementation of **VIS-1** and **VIS-3**, the level of new light, glare, and reflectance emitted by the project, including without limitation the

construction laydown areas, would comply with the ordinance and have a less than significant effect.

12. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification ensures that the Willow Rock Energy Storage Center will not result in any unmitigated direct, indirect, or cumulative impacts from construction or operational activities relating to Visual Resources, except for significant unavoidable impacts to public views from KOP-2, KOP-3 and KOP-4.
13. No other mitigation measures were identified in the Final Staff Assessment that could mitigate or avoid the project's significant effects on visual resources.
14. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the alternatives identified in the Final Staff Assessment that could reduce impacts on visual resources to less than significant.
15. The Willow Rock Energy Storage Center, in combination with any current or probable future project, will not contribute considerably to a cumulatively significant effect for visual resources.

vi. Conclusions of Law

1. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that the Willow Rock Energy Storage Center will comply with all applicable laws, ordinances, regulations, and standards relating to Visual Resources.
2. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision ensures that the Willow Rock Energy Storage Center will not result in any unmitigated direct, indirect, or cumulative impacts from construction or operational activities relating to Visual Resources, except for significant unavoidable impacts to visual resources because the project will substantially degrade the existing visual character or quality of public views of the site and its surroundings.
3. Implementation of the mitigation measures described in the record and contained in the Conditions of Certification set forth in **Appendix A** of this Decision mitigates impacts to Visual Resources to the extent feasible. No other mitigation measures were identified in the Final Staff Assessment that could mitigate or avoid the project's significant effects on Visual Resources. Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the alternatives identified in the Final Staff Assessment that could reduce impacts to Visual Resources to less than significant.

9 Override Findings

i. Introduction

As discussed in **Visual Resources** Section 8(E), we find that the Willow Rock Energy Storage Center will cause a significant unmitigated impact to visual resources because the project will substantially degrade the existing visual character or quality of public views of the site and its surroundings. Comparisons of the existing views from three of the Key Observation Points (KOP 2, KOP 3 and KOP 4) around the Willow Rock site with photo-realistic visual simulations depicting the developed facility show a sufficient magnitude of change and project prominence in the existing landscape to find that the project will have a significant effect on the environment. Additionally, because the degradation of the public views stems from several factors including the shapes, sizes, and number of buildings, structures, and equipment, and the impacts on flora including the western Joshua tree, the impacts cannot be mitigated to less than significant with the exterior colors, coatings, or finishes of the facility required by **VIS-1**.

ii. Discussion

a. Override Analysis

The California Environmental Quality Act (CEQA) prohibits a public agency from approving a project it finds to have one or more significant effects on the environment unless both of the following occur:

“(a) The public agency makes one or more of the following findings with respect to each significant effect:

- (1) Changes or alterations have been required in, or incorporated into, the project which mitigate or avoid the significant effects on the environment.
 - (2) Those changes or alterations are within the responsibility and jurisdiction of another public agency and have been, or can and should be, adopted by that other agency.
 - (3) Specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or alternatives identified in the environmental impact report.
- (b) With respect to significant effects which were subject to a finding under paragraph (3) of subdivision (a), the public agency finds that specific

overriding economic, legal, social, technological, or other benefits of the project outweigh the significant effects on the environment.”¹

Additionally, the Warren-Alquist Act specifies findings that must be made before approving a project that does not comply with state or local laws, ordinances, regulations, or standards (LORS):

“The commission may not certify a facility contained in the application when it finds, pursuant to subdivision (d) of Section 25523, that the facility does not conform with any applicable state, local, or regional standards, ordinances, or laws, unless the commission determines that the facility is required for public convenience and necessity and that there are not more prudent and feasible means of achieving public convenience and necessity. In making the determination, the commission shall consider the entire record of the proceeding, including, but not limited to, the impacts of the facility on the environment, consumer benefits, and electric system reliability. The commission may not make a finding in conflict with applicable federal law or regulation. The basis for these findings shall be reduced to writing and submitted as part of the record pursuant to Section 25523.”²

Regarding the finding of public convenience and necessity, prior to 1999, CEC decisions certifying generation facilities were required to contain a finding about the conformity of the facility with a forecast adopted by the CEC. That forecast included a specified level of need for new resource additions, and the finding was therefore referred to as the “need finding.” In 1999, the Legislature amended the required findings for facility certification and deleted the need finding. (Stats. 1999, ch. 581, § 7.) As a result, the CEC no longer considers the level of need for a proposed project.

Rather, as this Decision documents, the CEC now reviews applications for certification for environmental impacts and compliance with LORS, as required by the statutes governing the site certification process. In the **Visual Resources** Section 8(E), we describe in detail our finding of an unmitigated significant visual impact. The impact arises primarily from the prominence that the Willow Rock Energy Storage Center will exhibit in the existing landscape, as well as the magnitude of change expected for the views of the existing site and surrounding area. There is no available mitigation that can lessen the impacts to public views to a level below significant. Even so, with the implementation of all **Visual Resources** Conditions of Certification, the project will comply with all applicable LORS.

¹ Pub. Resources Code, § 21081.

² Public Resources Code, § 25525.

The CEC must make its override decision under CEQA based on the entirety of the evidence in its record. Our decision on whether an override for the Willow Rock Energy Storage Center is justified is discussed further below.

b. Project Benefits

To assess whether there are feasible Project Alternatives that can avoid the unmitigated environmental impacts, we first consider the project benefits if the Willow Rock Energy Storage Center is constructed and operated as set forth in this Decision:

- Willow Rock Energy Storage Center will provide 500 megawatts (MW) of quick-starting, flexible, controllable generation with the ability to ramp up and down through a wide range of electrical output to facilitate the integration of renewable energy into the electrical grid in satisfaction of California's Renewables Portfolio Standard (RPS) program and climate objectives, by displacing older and less efficient generation.
- Willow Rock will contribute to the integration of variable renewable resources in the Tehachapi Renewable Resource Area. Through up to 520 megawatts gross and 4,160 megawatt-hours gross of energy storage, the project will help avoid the curtailment of renewable resources and meet California's and regional electric reliability needs.
- Willow Rock will provide rapid-response delivery of energy and synchronous condenser voltage support services that provide reliability support and stability to the electrical grid and integrate intermittent renewable energy sources into the grid.
- Willow Rock's A-CAES technology will provide peaking energy for local contingencies.
- Willow Rock will implement a proven sustainable energy storage technology that provides improved technological diversity, non-combustible energy storage, minimal residual hazardous waste at asset retirement, a long-term commercial lifespan of 30 years or greater, and non-degrading energy storage.
- The project will create up to 750 construction and 40 operations jobs in Kern County and the State of California, mostly requiring highly skilled workers.
- The Willow Rock Energy Storage Center will generate economic benefits, including a \$434 million construction payroll, \$1 billion in expenditures for materials and supplies, \$18.45 million in annual property taxes, \$7 million in state and local tax revenue from construction, and \$203,000 annually in state and local tax revenue during the operation of the facility.
- Willow Rock will be located on compatibly zoned parcels in a sparsely populated area to minimize land use impacts.
- By displacing electricity generation from more GHG intensive resources when it is operated, Willow Rock Energy Storage Center will reduce the effects of climate change from GHG emissions such as the negative impacts of global climate change to California's and the world's population, environment, food supplies, flora and fauna, coastal regions, and public health.

c. Comparison with Project Alternatives

Broadly speaking, the override findings for both a LORS inconsistency and for CEQA under Section 21081(a)(3) require a consideration of whether alternatives to the project would provide the same or similar benefits of the project in a more prudent or environmentally superior manner. As stated above, under CEQA, a lead agency may approve a project with unmitigated significant impacts if it finds that specific economic, legal, social, technological, or other considerations, including considerations for the provision of employment opportunities for highly trained workers, make infeasible any mitigation measures or alternatives identified in the environmental impact analysis. The discussion of the significant visual impacts in Section 8(E) concludes that there are no mitigation measures that can reduce the impacts to the public views of the site and surrounding areas where the Willow Rock facility will be built.

In the **Project Alternatives** Section 3, we considered a range of alternatives to assess whether there is a feasible option to the Willow Rock Energy Storage Center as proposed to avoid the significant impacts on visual resources. Alternative technologies were considered including long-duration battery energy storage systems, 100 percent hydrogen-fueled power plant, traditional compressed air energy storage, and pumped thermal energy storage. However, they were eliminated from detailed analysis because they would not meet the project objectives, and feasibility was uncertain. Seven alternative site locations were considered but eliminated from further analysis due to unfavorable geologic conditions, including the original site on Sweetser Road, and site control issues.

A Reduced Capacity Alternative delivering half the storage and dispatch capacity was assessed as environmentally superior to Willow Rock as proposed. Compared to Willow Rock as proposed, the Reduced Capacity Alternative would substantially lessen direct and indirect impacts on biological resources and cultural and tribal cultural resources. With the reduced footprint and cavern, impacts relating to construction noise and vibration would be substantially lessened. The total construction and operational emissions would be substantially lessened due to a smaller footprint and construction timeline. While a system with half the capacity would reduce the number and scale of above ground structures, the physical change to the views would still exist due to contrast associated with the basic design, scale dominance, and spatial dominance of the facility in the existing physical landscape. It is unclear whether the reduction in storage capacity would have a comensurate reduction in the significant impact on public views.

Additionally, the overall feasibility of the Reduced Capacity Alternative is uncertain due primarily to technological, economic, and operational challenges and the project schedule delay that would result from a facility redesign. While this alternative would still provide quick-starting, flexible, and controllable energy generation, it would only partially meet the project's primary objective by delivering only half of the intended electricity and resource adequacy capacity. Operational challenges associated with a smaller cavern would likely introduce technical complexities related to system stability and thermal management and may render

the project infeasible. The Reduced Capacity Alternative would also not likely achieve the non-energy benefits of the Willow Rock project as proposed due to the reduced number of construction and operation jobs and economic benefits related to the project.

The No Project Alternative is the environmentally superior alternative and would avoid all potentially significant impacts of Willow Rock, including significant and unavoidable impacts to visual resources. But the No Project Alternative would not meet the basic objectives of the project and would not provide any electrical system and non-energy benefits.

d. Discussion of Unmitigated Impact

Even with the unmitigable significant impact to visual resources including the public views of the site and surroundings, there is no evidence in the record of any opposition to the Willow Rock Energy Storage Center as proposed. As noted in **Appendix D**, all public comments were in support of the project.

With the implementation of the **Visual Resources** Conditions of Certification that include mitigation measures to reduce visual and aesthetic impacts, there is no inconsistency with LORS including Kern County's Dark Skies Ordinance and other planning elements and zoning ordinances. Even though insufficient to reduce impacts to public views to a level below significant, the Applicant's commitment under Condition of Certification **VIS-1** to utilize exterior surface coatings, colors, finishes, materials, and gloss levels that minimize contrast and specular reflection in the existing physical landscape will nonetheless lessen the overall contrast and impact to public views.

The record demonstrates the numerous energy and non-energy public benefits and public interest in the Willow Rock Energy Storage Center achieving its project objectives supporting clean, renewable, and reliable energy and that there are no more prudent or feasible alternatives to achieving these public benefits. The record as whole supports the conclusion that the project benefits outweigh the significant effects even with the unmitigated significant impact to visual resources. Therefore, we find that overriding considerations warrant the approval of the Willow Rock Energy Storage Center including the Conditions of Certification that we adopt herein.

iii. Agency and Public Comment

There were no agency or public comments on the **Override Findings** in the record of the Evidentiary Hearing.

iv. Findings of Fact

Based on substantial evidence, the CEC makes the following findings:

1. Impacts to visual resources caused by the Willow Rock Energy Storage Center will be significant and unavoidable at three Key Observation Points (KOP 2, KOP 3, and KOP 4).
2. No mitigation measures were identified in the Final Staff Assessment that could mitigate or avoid the project's significant effects on visual resources.
3. The Willow Rock Energy Storage Center, in combination with any current or probable future project, will not contribute considerably to a cumulatively significant effect for visual resources.
4. The Willow Rock Energy Storage Center will be consistent with all LORS relating to visual resources and aesthetics.
5. Willow Rock Energy Storage Center will provide the following energy and non-energy benefits:
 - a. 500 megawatts (MW) of quick-starting, flexible, controllable generation with the ability to ramp up and down through a wide range of electrical output to facilitate the integration of renewable energy into the electrical grid in satisfaction of California's Renewables Portfolio Standard (RPS) program and climate objectives, by displacing older and less efficient generation.
 - b. Integration of variable renewable resources in the Tehachapi Renewable Resource Area, helping to avoid the curtailment of renewable resources and meet California's and regional electric reliability needs.
 - c. Rapid-response delivery of energy and synchronous condenser voltage support services that provide reliability support and stability to the electrical grid.
 - d. A-CAES technology that will provide peaking energy for local contingencies.
 - e. Sustainable energy storage technology that provides improved technological diversity, non-combustible energy storage, minimal residual hazardous waste at asset retirement, a long-term commercial lifespan of 30 years or greater, and non-degrading energy storage.
 - f. Creation of up to 750 construction and 40 operations jobs for highly skilled workers in Kern County and the State of California.
 - g. Economic benefits, including a \$434 million construction payroll, \$1 billion in expenditures for materials and supplies, \$18.45 million in annual property taxes, \$7 million in state and local tax revenue from construction, and \$203,000 annually in state and local tax revenue during the operation of the facility.
 - h. Displacement of electricity generation from more GHG intensive resources thereby reducing the effects of climate change from GHG emissions such as the negative impacts of global climate change to California's and the world's population, environment, food supplies, flora and fauna, coastal regions, and public health.
6. There are no feasible alternatives Willow Rock Energy Storage Center that would reduce the significant impacts to visual resources and achieve most of the benefits and objectives of the project.

7. Specific economic, legal, social, technological, and other considerations, including the provision of employment opportunities for highly trained workers, make infeasible any alternatives identified in the Final Staff Assessment.
8. The record as whole supports the conclusion that the project benefits of the Willow Rock Energy Storage Center outweigh the significant effects to visual resources.

v. Conclusions of Law

1. This Decision requires mitigation of all direct, indirect, and cumulative project impacts from the Willow Rock Energy Storage Center, except to visual resources as noted above.
2. There are no feasible alternatives which would avoid or substantially lessen the significant visual impacts.
3. The Willow Rock Energy Storage Center's energy and non-energy benefits outweigh the significant impact of the project on public views.
4. It is appropriate to approve the Willow Rock Energy Storage Center despite its remaining significant environmental impact on public views.
5. Therefore, this Decision overrides the unmitigated environmental impact that may result from this project even with the implementation of the required mitigation measures described in this Decision.

Appendix A – Conditions of Certification

Facility Design Conditions of Certification

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2022 California Building Standards Code (Building Standards Code), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (Building Code), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and the California Water Code (Water Code) and California Code of regulations, Titles 23, Division 2, Chapter 1, and all other applicable engineering laws, ordinances, regulations, and standards (LORS) in effect at the time initial design plans are submitted to the Delegate Chief Building Official (DCBO) for review and approval (the Building Standards Code in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously). The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving (onsite), demolition, repair, operation, or maintenance of the completed facility.

In the event that the initial engineering designs are submitted to the DCBO when the successor to the 2022 Building Standards Code is in effect, the 2022 Building Standards Code provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

Verification: Within 30 days following receipt of the certificate of occupancy (CofO), the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed and stamped by the responsible engineer(s), attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the California Energy Commission's (CEC's) decision have been met in the area of Facility Design. The project owner shall provide the

CPM a copy of the CofO within 30 days of receipt from the DCBO.

Once the CofO has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires DCBO approval for compliance with the above codes. The CPM will then determine if the DCBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for DCBO review, the project owner shall furnish the CPM and the DCBO with a schedule of facility design submittals, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for energy storage and/or power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the DCBO. To facilitate audits by the CEC staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO and to the CPM the schedule, and the master drawings and master specifications list of documents to be submitted to the DCBO, for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures, systems, and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report (MCR).

GEN-3 The project owner shall make payments to the DCBO for design review, plan checks, construction inspections, and other applicable DCBO activities, based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. If the CEC delegates the DCBO function to an independent third party or local agency,¹ the project owner, at the CEC's direction, shall make payments directly to the DCBO based upon a

¹ See **WATER-5** and **WATER-6** for specific Conditions of Certification associated with delegated duties to Department of Water Resources Division of the Safety of Dams, the state agency with oversight responsibilities for the design, construction, and maintenance of jurisdictional dams in California.

fee schedule negotiated between the CEC and the DCBO. These fees may be consistent with the fees listed in the 2022 Building Code, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the DCBO.

Verification: The project owner shall send a copy of the DCBO's receipt of payment to the CPM in the next MCR indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California-registered architect, or a structural or civil engineer, as the resident engineer in charge of the project.

The resident engineer may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The resident engineer shall:

1. Monitor progress of construction work requiring DCBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to DCBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the DCBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the DCBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

The resident engineer (or their delegate) must be located at the project site or be available at the project site within a reasonable time, during any hours in which construction takes place.

The resident engineer shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the resident engineer or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the resume and registration number of the resident engineer and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the resident engineer or the delegated engineer(s) is subsequently reassigned or replaced, the project owner shall within five days submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of project structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code, sections 6704, 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California.)

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, project structures,

equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications and registration number of the newly assigned responsible engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer.

1. The civil engineer shall:
 - a. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;
 - b. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the DCBO. These include, but may not be limited to grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads, and sanitary sewer systems; and
 - c. Provide consultation to the resident engineer during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.
2. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:
 - a. Review all the engineering geology reports;
 - b. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load;
 - c. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with

- requirements set forth in the 2022 Building Code (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
- d. Recommend field changes to the civil engineer and resident engineer.
 - e. This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.
3. The engineering geologist shall:
 - a. Review all the engineering geology reports and prepare a final soils grading report; and
 - b. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2022 Building Code (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).
 4. The design engineer shall:
 - a. Be directly responsible for the design of the proposed structures and equipment supports;
 - b. Provide consultation to the RE during design and construction of the project;
 - c. Monitor construction progress to ensure compliance with engineering LORS;
 - d. Evaluate and recommend necessary changes in design; and
 - e. Prepare and sign all major building plans, specifications, and calculations.
 5. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the DCBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the CEC's decision.
 6. The electrical engineer shall:
 - a. Be responsible for the electrical design of the project; and
 - b. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of rough grading, the project owner shall

submit to the DCBO for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction, the project owner shall submit to the DCBO for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the DCBO's approvals of the responsible engineers within five days of the approval.

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall within five days submit the name, qualifications, and registration number of the newly assigned responsible engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2022 Building Code.

A certified weld inspector, certified by the American Welding Society (AWS), and/or American Society of Mechanical Engineers (ASME) as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the DCBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the DCBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the DCBO and the CPM for corrective action; and
4. Submit a final signed report to the RE, DCBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved

plans, specifications, and other provisions of the applicable edition of the Building Code.

Verification: At least 15 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the DCBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the DCBO's approval of the qualifications of all special inspectors in the next MCR.

If the special inspector is subsequently reassigned or replaced, the project owner shall within five days submit the name and qualifications of the newly assigned special inspector to the DCBO for approval. The project owner shall notify the CPM of the DCBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the DCBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, applicable sections of the Building Code and/or other LORS.

Verification: The project owner shall transmit a copy of the DCBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next MCR. If any corrective action is disapproved, the project owner shall advise the CPM within five days of the reason for disapproval and the revised corrective action to obtain DCBO's approval.

GEN-8 The project owner shall obtain the DCBO's final approval of all completed work that has undergone DCBO design review and approval. The project owner shall request the DCBO to inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the DCBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site, or at another accessible location, during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the DCBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the DCBO, with a copy to the CPM in the next MCR, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the

work conforms to the final approved plans. After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction, the project owner shall provide to the DCBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" files (the latest version of Adobe .pdf available), with restricted (password-protected) printing privileges.

CIVIL-1 The project owner shall submit to the DCBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils, geotechnical, or foundation investigations reports required by the 2022 Building Code.

Verification: At least 15 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the DCBO for design review and approval. In the next MCR following the DCBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the DCBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering, identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the DCBO based on these new conditions. The project owner shall obtain approval from the DCBO before resuming earthwork and construction in the affected area.

Verification: The project owner shall notify the CPM within 24 hours when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the DCBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide the CPM with a copy of the DCBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2022 Building Code. All site-grading operations, for which a grading permit is required, shall be subject to inspection by the DCBO.

If in the course of inspection it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the DCBO, and the CPM. The project owner shall prepare a written report, with copies to the DCBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the DCBO and the CPM a non-conformance report (NCR), and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the DCBO and the CPM. A list of NCRs for the reporting month shall also be included in the following MCR.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the DCBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within their area of responsibility was done in accordance with the final approved plans.

Verification: Within 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the DCBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of the DCBO's approval to the CPM in the next MCR.

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit plans, calculations, and other supporting documentation to the DCBO for design review and acceptance for all project structures, systems, and equipment identified in the DCBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the DCBO has approved the lateral force procedures to be employed in designing that structure or component. The project owner shall:

1. Obtain approval from the DCBO of lateral force procedures proposed for project structures;
2. Obtain approval from the DCBO for the final design plans, specifications, calculations, soils reports, and applicable quality

control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;

3. Submit to the DCBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;
4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and
5. Submit to the DCBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of construction of any structure or component listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO the above final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM. The project owner shall submit to the CPM, in the next MCR, a copy of a statement from the DCBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

STRUC-2 The project owner shall submit to the DCBO the required number of sets of the following documents related to work that has undergone DCBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and

- results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2022 Building Code.

Verification: If a discrepancy is discovered in any of the above documents, the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the DCBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the Condition(s) of Certification and the applicable Building Code chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the DCBO and the CPM.

The project owner shall transmit a copy of the DCBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM within five days of the reason for disapproval and the revised corrective action to obtain DCBO's approval.

STRUC-3 The project owner shall submit to the DCBO design changes to the final plans required by the 2022 Building Code, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the DCBO prior notice of the intended filing.

Verification: On a schedule suitable to the DCBO, the project owner shall notify the DCBO of the intended filing of design changes, and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the DCBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the MCR, when the DCBO has approved the revised plans.

STRUC-4 Tanks and vessels (if any) containing quantities of toxic or hazardous materials exceeding amounts specified in the 2022 Building Code shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the DCBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the DCBO approvals of plan checks to the CPM in the MCR following receipt of such approvals. The project owner shall also transmit a copy of the DCBO's inspection approvals to the CPM in the MCR following completion of any inspection.

MECH-1 The project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations for the project's mechanical-related components listed in the DCBO-approved master drawing and master specifications list. The submittal shall also include the project owner's Maintenance Program including all applicable Quality Assurance/Quality Control procedures and maintenance recommendations provided by all equipment manufacturers.

Upon completion of construction of any such component, the project owner shall request the DCBO's inspection approval of that construction.

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major project's mechanical-related components, subject to DCBO design review and approval, and submit a signed statement to the DCBO when the proposed components have been designed, fabricated, and installed in accordance with all of the applicable LORS, which may include, but are not limited to:

- ASME Boiler and Pressure Vessel Code and Interpretation: Section V, Article 7: Nondestructive Examination; Section VIII, Division 1, Part UG-28: Rules for Construction of Unfired Pressure Vessels; and
- Title 24, California Code of Regulations, Part 2 (California Building Code).

The DCBO may deputize inspectors to carry out the functions of the CEC's code enforcement mandate.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of major mechanical-related components' construction listed in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO for design review and approval the final plans, specifications, calculations, and Maintenance Program, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next MCR.

The project owner shall transmit to the CPM, in the MCR following completion of any inspection, a copy of the transmittal letter conveying the DCBO's inspection approvals.

MECH-2 The project owner shall submit to the DCBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC) or refrigeration system.

Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the Building Code and other applicable codes. Upon completion of any increment of construction, the project owner shall request the DCBO's inspection and approval of that construction. The final plans, specifications and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the DCBO that the proposed final design plans, specifications and calculations conform with the applicable LORS.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the DCBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the Building Code and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 110 Volts (V) or higher (see a representative list, below) the project owner shall submit, for DCBO design review and approval, the proposed final design, specifications, and calculations. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS.

A. Final design plans shall include:

1. one-line diagram for the 13.8 kilovolts (kV), 4.16 kV and 480 V systems;
2. system grounding drawings;
3. lightning protection system; and
4. hazard area classification plan.

B. Final calculations must establish:

1. short-circuit ratings of facility equipment;
2. ampacity of feeder cables;
3. voltage drop in feeder cables;
4. system grounding requirements;
5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 110/480 V systems;
6. system grounding requirements;
7. lighting energy calculations; and
8. 110-Volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.

- C. The following activities shall be reported to the CPM in the MCR:
1. Receipt or delay of major electrical equipment;
 2. Testing or energizing of major electrical equipment; and
 3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the CEC decision.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit the above listed documents to the DCBO for design review and approval.

The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS and shall send the CPM a copy of the transmittal letter in the next MCR.

Transmission System Engineering Conditions of Certification

TSE-1 The project owner shall furnish to the Compliance Project Manager (CPM) and to the Delegate Chief Building Official (DCBO) a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by CEC staff, the project owner shall provide designated packages to the CPM when requested.

Verification: Prior to the start of construction of the transmission lines, gen-tie lines, or related structures and facilities, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the DCBO and to the CPM. The

schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1** Major Equipment List below). Additions and deletions shall be made to the table only with CPM and DCBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

TABLE 1 MAJOR EQUIPMENT LIST

- Breakers
- Step-up transformer
- Switchyard
- Busses
- Surge arrestors
- Disconnects
- Take-off facilities
- Electrical control building
- Switchyard control building
- Transmission pole/tower
- Grounding system

TSE-2 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

1. a civil engineer;
2. a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering;
3. a design engineer who is either a structural engineer or a civil engineer and fully competent and proficient in the design of power plant structures and equipment supports; or
4. a mechanical engineer (Business and Professions Code, sections 6704 *et seq.* require state registration to practice as either a civil engineer or a structural engineer in California).

The tasks performed by the civil, geotechnical, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular segment of the project, e.g., proposed earthwork, civil structures, power plant structures, or equipment support. No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical, or civil and design engineer, assigned as required by **Facility Design** Condition of Certification **GEN-5** may be responsible for design and review of the transmission system facilities.

The project owner shall submit to the DCBO, for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer. This engineer shall be authorized to halt earth work and require changes; if site conditions are unsafe or do not conform with the predicted conditions used as the basis for design of earth work or foundations.

The electrical engineer shall:

1. be responsible for the electrical design of the power plant switchyard, outlet, and termination facilities; and
2. sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: Prior to the start of rough grading, the project owner shall submit to the DCBO for review and approval, the names, qualifications, and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the DCBO's approvals of the engineers within five days of the approval. If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the name, qualifications, and registration number of the newly assigned engineer to the DCBO for review and approval. The project owner shall notify the CPM of the DCBO's approval of the new engineer within five days of the approval.

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone DCBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. The discrepancy documentation shall become a controlled document and shall be submitted to the DCBO for review and approval and refer to this Condition of Certification.

Verification: The project owner shall submit a copy of the DCBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for the disapproval, along with the revised corrective action required to obtain the DCBO's approval.

TSE-4 For the power plant switchyard, outlet line and termination, the project owner shall not begin any construction until plans for that increment of construction have been approved by the DCBO. These plans, together with design changes and design change notices, shall remain on the site for one

year after completion of construction. The project owner shall request that the DCBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the monthly compliance report:

1. receipt or delay of major electrical equipment (**Table 1** of **TSE-1**);
2. testing or energization of major electrical equipment; and
3. the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: Prior to the start of each increment of construction, the project owner shall submit to the DCBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, and outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.

TSE-5 The project owner shall ensure that the design, construction, and operation of the proposed transmission lines, generator tie-lines, or related structures and facilities will conform to all applicable LORS, and the requirements listed below. The project owner shall submit the required number of copies of the design drawings and calculations, as determined by the DCBO. Once approved, the project owner shall inform the CPM and DCBO of any anticipated changes to the design and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and DCBO for review and approval.

1. The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code of Regulations (Title 8); Articles 35, 36 and 37 of the High Voltage Electric Safety Orders, National Electric Code (NEC) and related industry standards.
2. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
3. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
4. The project conductors shall be sized to accommodate the full output of the project.
5. Termination facilities shall comply with applicable SCE interconnection standards.

6. The project owner shall provide to the CPM:

- a. The Special Protection System sequencing and timing if applicable,
- b. A letter stating that the mitigation measures or projects selected by the transmission owners for each reliability criteria violation, for which the project is responsible, are acceptable, if applicable.
- c. Any updates to the executed LGIA signed by the SCE and the project owner.
- d. Approval from LADWP indicating that the Willow Rock Energy Storage Center gen-tie line underground section can be built in the LADWP transmission corridor.

Verification: Prior to the start of construction or start of modification of transmission lines, gen-tie lines, or related structures and facilities, the project owner shall submit to the DCBO for approval:

- a. Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code of Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.
- b. For each element of the transmission facilities identified above, the submittal package to the DCBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions" and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8; Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC), and related industry standards.
- c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an engineering description of the equipment and configurations covered by requirements of Condition of Certification **TSE-5**.
- d. Generator Special Facilities Agreement shall be provided concurrently to the CPM and DCBO. Substitution of equipment and substation configurations shall be identified and justified by the project owner for DCBO and CPM approval.
- e. Any changes or updates to the executed LGIA signed by the SCE and the project owner.
- f. Prior to the start of construction of any project modification requiring approval of the SCE, provide the interconnection approval to the CPM. Interconnection approval for modification of existing facilities can be in the form of an approved Material Modification or approval of the proposed changes to project and the existing interconnection facilities. Within 15 days after cessation of construction the project owner shall provide

a statement to the CPM from the registered engineer in responsible charge (signed and sealed) that the switchyard and transmission facilities conform to the above-listed requirements.

- g. A signed letter from LADWP indicated that the construction of the underground Willow Rock Energy Storage Center gen-tie line in the LADWP transmission corridor is acceptable.

TSE-6 The project owner shall be responsible for the inspection of the transmission lines, generator tie-lines, or related structures and facilities during and after project construction, and any subsequent CPM and DCBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, applicable interconnection standards, NEC, and related industry standards. In case of non-conformance, the project owner shall inform the CPM and DCBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 90 days after first synchronization of the project, the project owner shall transmit to the CPM and DCBO:

- a. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, and applicable interconnection standards, NEC, related industry standards.
- b. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission lines, generator tie-lines, or related structures and facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the **Compliance Monitoring Plan**.

Transmission Line Safety and Nuisance Conditions of Certification

TLSN-1 The project owner shall construct the proposed 230-kV transmission lines according to the requirements of CPUC GO-52, GO-95, GO-128, GO-131-E, Cal. Code of Regs., tit. 8, sections 2700 *et seq.*, *High Voltage Electrical Safety Orders*, Cal. Code of Regs., tit. 14, sections 1250-1258, Fire Prevention Standards for Electric Utilities, and SCE's EMF reduction guidelines.

Verification: At least 30 days prior to the start of construction of the transmission lines or related structures and facilities, the project owner shall submit to the

compliance project manager (CPM) a letter signed by a California licensed and registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall ensure that the route of the transmission lines is kept free of combustible material, as required under the provisions of GO-95 and section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results, and any fire prevention activities carried out along the proposed route and provide such summaries in the Annual Compliance Report on transmission line safety and nuisance-related requirements.

TLSN-3 The project owner shall ensure that all permanent metallic objects within the transmission line route are grounded according to industry standards.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

TLSN-4 The project owner shall measure the maximum strengths of the line EMF at the edge of the rights-of-way to validate the estimates the applicant has provided for these fields. These measurements shall be made (a) according to the standard procedures of the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) and (b) before and after energizing. The measurements shall be completed no later than six months after the start of operations.

Verification: The project owner shall file copies of the pre-and post-energizing measurements with the CPM within 60 days after completion of the measurements.

Air Quality Conditions of Certification

AQ-SC1 Air Quality Construction Mitigation Manager (AQCM): The project owner shall designate and retain an on-site AQCM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site. The on-site AQCM may delegate responsibilities to one or more AQCM Delegates. The AQCM and AQCM Delegates shall have full access to all areas of construction on the project site and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCM and AQCM Delegates may have other responsibilities in addition to those described in this condition. The AQCM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4**, and **AQ-SC5**.

Verification: At least 30 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the AQCMP for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes that would not comply with the performance standards identified in **AQ-SC4** from leaving the project site. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

Report monthly on the following fugitive dust mitigation measures that shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**:

1. All soil being actively excavated or graded and all crushed rocks shall be sufficiently watered or stabilized to prevent excessive dust. Watering or the application of soil stabilizers shall occur as needed with complete coverage of disturbed soils areas. Watering shall take place a minimum of three times daily where soil is being actively disturbed, unless dust is otherwise controlled by rainfall or use of soil stabilizers.
2. Vehicle speed for all on site (i.e., within the project boundary) construction vehicles shall not exceed 15 mph on any unpaved

surface at the construction site. Signs identifying construction vehicle speed limits shall be posted along onsite roadways, at the site entrance/exit, and along unpaved site access roads.

3. Vehicle speeds on all offsite unpaved project-site access roads (i.e., outside the project boundary) construction vehicles shall not exceed 25 mph. Signs identifying vehicle speed limits shall be posted along unpaved site access roads and at the site entrance/exit.
4. All onsite unpaved roads and offsite unpaved public project-site access road(s) shall be effectively stabilized of dust emissions using water or EKAPCD-approved dust suppressants/palliatives, sufficient to minimize visible wind-blown dust at nearby residences or public roads. During the dry season, unpaved road surfaces and vehicle parking/staging areas shall be watered or otherwise stabilized immediately prior to periods of high use (e.g., worker commute periods, truck convoys). Reclaimed (non-potable) water shall be used to the extent available and feasible.
5. The amount of the disturbed area (e.g., grading, excavation, cavern) shall be reduced and/or phased where possible.
6. All disturbed areas shall be sufficiently watered or stabilized by EKAPCD-approved methods to prevent excessive dust. Watering frequency or the use of soil stabilizers shall be increased whenever wind speeds exceed 15 mph or, as necessary, to minimize visible wind-blown dust at nearby residences or public roads. If water is used in place or to supplement soil stabilizers, then reclaimed (non-potable) water shall be used to the extent available and feasible.
7. All disturbed areas anticipated to be inactive for periods of 30 days or more shall be treated to minimize wind-blown dust emissions. Treatment may include, but is not limited to, the application of an EKAPCD-approved chemical dust suppressant, gravel, hydro-mulch, revegetation/seeding, or wood chips.
8. All active and inactive disturbed surface areas shall be stabilized, where feasible.
9. Equipment and vehicle access to disturbed areas shall be limited to only those vehicles necessary to complete the construction activities.
10. Where applicable, permanent dust control measures shall be implemented as soon as possible following completion of any soil-disturbing activities.
11. Stockpiles of dirt or other fine loose material shall be stabilized by watering or other appropriate methods sufficient to reduce visible dust plumes. If necessary and where feasible, three-sided barriers shall be constructed around storage piles and/or piles shall be covered by use of tarps, hydro-mulch, woodchips, or other materials sufficient to minimize wind-blown dust.

12. All trucks hauling dirt, sand, soil, excavated materials or other loose materials shall be covered or shall maintain at least six inches of freeboard (minimum vertical distance between top of the load and top of the trailer) in accordance with California Vehicle Code section 23114.
13. Gravel pads, grizzly strips, or other material track-out control methods approved for use by EKAPCD shall be installed where vehicles enter or exit unpaved roads onto paved roadways.
14. Haul trucks and off-road equipment leaving the site shall be washed with water or high-pressure air, and/or rocks/grates at the project entry points shall be used, when necessary, to remove soil deposits and minimize the track-out/deposition of soil onto nearby paved roadways.
15. During construction paved road surfaces adjacent to the site access road(s), including adjoining paved aprons, shall be cleaned, as necessary, to remove visible accumulations of track-out material. If dry sweepers are used, the area shall be sprayed with water prior to sweeping to minimize the entrainment of dust. Reclaimed water shall be used to the extent available.
16. Portable equipment, 50 horsepower or greater, used during construction activities (e.g., portable generators) shall require California statewide portable equipment registration (issued by CARB) or an EKAPCD permit.
17. Signs shall be posted at the project site entrance and written notifications shall be provided a minimum of 30 days prior to initiation of project construction to residential land uses within 1,000 feet of the project site. The signs and written notifications shall include the following information: (a) Project Name; (b) Anticipated Construction Schedule(s); and (c) Telephone Number(s) for designated construction activity monitor(s) or, if established, a complaint hotline.
18. The designated construction monitor shall document and immediately notify EKAPCD of any air quality complaints received. If necessary, the project operator and/or contractor will coordinate with EKAPCD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.
19. The main access roads through the facility will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction, and delivery areas for operations materials (chemicals, replacement parts, etc.) will be paved or treated prior to taking initial deliveries.

20. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Drainage, Erosion, and Sedimentation Control Plan (DRESC) as described in **WATER-1**, when such DRESC measures are necessary so that this condition does not conflict with the requirements of the DRESC.
21. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include the following to demonstrate control of fugitive dust emissions:

- a. A summary of all actions taken to maintain compliance with this condition;
- b. Copies of any complaints filed with the EKAPCD in relation to project construction; and
- c. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing the additional mitigation measures described in the verification below and how they will be implemented to meet these fugitive dust control performance standards.

The AQCMM or Delegate shall implement the following procedures for additional mitigation measures if visible dust plumes as defined above are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The project owner may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report to include:

- a. A summary of all actions taken to maintain compliance with this condition;
- b. Copies of any complaints filed with the EKAPCD in relation to project construction; and
- c. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval.

The following off-road diesel construction equipment mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**:

1. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the conditions set forth herein.
2. All construction diesel engines with a rating of 25 hp or higher shall meet, at a minimum, the Tier 4 Final California Emission Standards

for Off-Road Compression-Ignition Engines, as specified in Cal. Code of Regs., tit. 13, section 2423(b)(1), unless a good faith effort to the satisfaction of the CPM that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. In the event that a Tier 4 Final engine is not available for any off-road equipment larger than 50 horsepower, a Tier 4 Interim or Tier 3 engine shall be used or that equipment shall be equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 3 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons:

- a. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question; or
 - b. The construction equipment is intended to be on site for 10 days or less; or
 - c. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.
3. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item 2 above occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists:
 - a. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
 - b. The retrofit control device is causing or is reasonably expected to cause engine damage.
 - c. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
 - d. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

4. All heavy earth-moving equipment and heavy-duty construction-related trucks with engines meeting the requirements of item 2 above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.
5. All diesel heavy construction equipment shall not idle for more than five minutes. Vehicles that need to idle as part of their normal operation (such as concrete trucks) are exempted from this requirement. Notification shall be provided to trucks and vehicles in loading or unloading queues that their engines shall be turned off when not in use for more than 5 minutes.
6. Construction equipment will employ zero-emission or hybrid powertrains and electric motors when feasible.
7. Existing electric power sources shall be used to the extent feasible.
8. The hours of operation of heavy-duty equipment and/or the quantity of equipment in use shall be limited to the extent feasible.

Verification: The AQCM shall include in the Monthly Compliance Report the following to demonstrate control of diesel construction-related emissions:

- a. A summary of all actions taken to control diesel construction related emissions;
- b. A list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that equipment has been properly maintained; and
- c. Any other documentation deemed necessary by the CPM, and the AQCM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 New Source Review Permits: The project owner shall provide the CPM copies of any EKAPCD issued Authority to Construct (ATC) and Permit to Operate (PTO) for the facility. The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the EKAPCD or U.S. Environmental Protection Agency (USEPA), and any revised permit issued by the EKAPCD or USEPA, for the project.

Verification: The project owner shall submit any ATC, PTO, and proposed air permit modification to the CPM within 5 working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-SC7 The project owner shall perform readiness testing and maintenance on only one (1) diesel-fired emergency generator or the diesel fire water pump in a single hour.

Verification: The project owner shall demonstrate compliance with this condition in the Quarterly Operational Reports.

AQ-SC8 The project owner shall submit to the CPM Quarterly Operation Reports, following the end of each calendar quarter, that include operational and emissions information as necessary to demonstrate compliance with the Conditions of Certification herein. The Quarterly Operation Report shall specifically note or highlight incidences of noncompliance.

Verification: The project owner shall submit the Quarterly Operation Reports to the CPM no later than 30 days following the end of each calendar quarter.

District Final Determination of Compliance Conditions (EKAPCD 2024)

The following EKAPCD conditions apply to each unit of equipment, and the proposed facility as a whole.

0570001-003: 2,500-kW Kohler emergency generator set model KD2500, driven by 3,621-bhp Liebherr Machines Bulle Model KD62V12-6CNS, EPA Certified (Tier 4) diesel fueled piston engine with turbocharger, after cooler, and Selective Catalytic Reduction (SCR). (EPA family PLHAL103.ESP and S/N TBD.)

0570004: Emergency fire pump, driven by 460-bhp Cummins Model QSX15, EPA Certified (Tier 3) diesel fueled piston engine with turbocharger and after cooler. (EPA family RCEXL015.AAH and S/N TBD.)

AQ-1 Engine shall be equipped with turbocharger and charge air cooler. (Rule 210.1 BACT Requirement.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-2 Elapsed time meter shall be installed and maintained indicating cumulative hours of engine operating time. (Rule 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-3 Engine shall be equipped with a permanently affixed placard readily available for inspection with the following engine information: brake horsepower, make, model, serial number, and Tier number. (Rule 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-4 Total hours of operation (excluding maintenance and testing) shall not exceed 200 hours per year without prior District approval. (Rule 210.1.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-5 Engine visible emissions shall be less than 5% opacity or Ringelmann No. 1/4 during normal operation, except for not more than 3 minutes in any one hour. (Rule 210.1 BACT Requirement.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-6 Fuel for diesel piston engine shall conform to California Air Resources Board standards for reformulated diesel fuel (low sulfur content, 0.0015% by weight). (Rule 210.1 BACT Requirement.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-7 Exhaust gas particulate matter concentration shall not exceed 0.1 grains/ft³ of gas at standard conditions. (Rule 404.1.)

Verification: The project owner shall submit to the CPM a manufacturer's certification that the equipment complies with this limit as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-8 Equipment shall be maintained according to manufacturer's specifications to ensure compliance with emission limitations. (Rules 209 and 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-9 Operation of equipment shall be conducted in compliance with all data and specifications submitted with application under which this permit is issued. (Rule 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-10 Engine shall comply with the requirements of California Code of Regulations Title 17, section 93115 (Airborne Toxic Control Measure for Stationary Compression Ignition (CI) Engine). (Cal. Code Regs., tit. 17, §§ 93115 – 93115.15)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-11 Maintenance and testing shall be limited to no greater than 50 hours per year. (Cal. Code Regs., Tit. 17, § 93115.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-12 Compliance with all operational conditions shall be verified by appropriate recordkeeping, including records of operational data needed to demonstrate compliance. Such records shall be kept on site in readily available format. (Rule 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-13 Operating record of equipment shall be maintained in format approved in writing by District kept for a minimum of three years and made available upon request of District personnel. Record shall include, at minimum, days and hours of operation, amount of fuel oil supplied to this engine, date(s) fuel was supplied, and engine maintenance check(s) including: air filters, fuel filters, oil filters, engine oil, exhaust system, coolant, and spark plugs (if so equipped), hours of operation for emergency use, hours of operation for maintenance and testing, hours of operation for all uses other than those specified in sections 93115.10(f)(1)(A) through (D), and the fuel used. (Cal. Code Regs., tit. 17, § 93115 and Rule 210.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-14 No emission resulting from use of this equipment shall cause injury, detriment, nuisance, annoyance to or endanger comfort, repose, health or safety of any considerable number of persons or public. (Rule 419 and Health & Saf. Code, § 41700.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-15 Facility shall comply with California Health and Safety Code sections 44300 through 44384. (Rule 208.1.)

Verification: The project owner shall make the site available for inspection of records by representatives of the District, CARB, and the CEC.

AQ-16 Should inspection reveal conditions indicative of non-compliance, compliance with any emission limitations shall be verified within 60 days of District request. Test results shall be submitted to the District within 30 days after test completion. (Rule 108.1 and 209.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**).

AQ-17 Maximum emissions rate of each air contaminant from each emergency generator shall not exceed following limits established pursuant to Rule 210.1 unless otherwise noted:

<u>Particulate Matter (PM10):</u>	0.02 gm/bhp-hr
	0.16 lb/hr
	3.83 lb/day
	0.02 ton/yr
<u>Sulfur Oxides (SOx as SO2):</u>	0.04 lb/hr
	0.88 lb/day
	4E-3 ton/yr
<u>Oxides of Nitrogen (NOx as NO2):</u>	0.50 gm/bhp-hr
	3.99 lb/hr
	95.80 lb/day
	0.40 ton/yr

Volatile Organic Compounds (VOC):

0.50 gm/bhp-hr

3.99 lb/hr

95.80 lb/day

0.40 ton/yr

Carbon Monoxide:

2.6 gm/bhp-hr

20.76 lb/hr

498.14 lb/day

2.08 ton/yr

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and recordkeeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). Compliance with hourly limits may be demonstrated by providing the CPM with a copy of the manufacturer's certification of emissions performance. Compliance with daily and annual limits may be demonstrated by multiplying hours of operation by manufacturer's certified emissions performance or EKAPCD-approved emission factors.

AQ-18 Maximum emissions rate of each air contaminant from the fire pump shall not exceed following limits established pursuant to Rule 210.1 unless otherwise noted:

Particulate Matter (PM10):

0.15 gm/bhp-hr (ATCM Standard)

0.15 lb/hr

3.65 lb/day

0.02 ton/yr

Sulfur Oxides (SOx as SO2):

0.01 lb/hr

0.12 lb/day

	1E-3 ton/yr
<u>Oxides of Nitrogen (NOx as NO2):</u>	2.85 gm/bhp-hr (ATCM Standard)
	2.89 lb/hr
	69.37 lb/day
	0.29 ton/yr
<u>Volatile Organic Compounds (VOC):</u>	0.15 gm/bhp-hr (ATCM Standard)
	0.15 lb/hr
	3.65 lb/day
	0.02 ton/yr
<u>Carbon Monoxide:</u>	2.6 gm/bhp-hr (ATCM Standard)
	2.64 lb/hr
	63.28 lb/day
	0.26 ton/yr

Compliance with maximum daily emission limits shall be verified by source operator (with appropriate operational data and recordkeeping to document maximum daily emission rate) each day source is operated and such documentation of compliance shall be retained and made readily available to District for period of three years. (Rule 210.1.)

Verification: The project owner shall submit to the CPM operating data to demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC8**). Compliance with hourly limits may be demonstrated by providing the CPM with a copy of the manufacturer's certification of emissions performance. Compliance with daily and annual limits may be demonstrated by multiplying hours of operation by manufacturer's certified emissions performance or EKAPCD-approved emission factors.

Public Health Conditions of Certification

- PH-1** The project owner shall develop and implement a Valley Fever Management Plan to minimize personnel and public exposure to potential Valley Fever. The Valley Fever Management Plan shall include the following:

- a. Equipment, vehicles, and other items shall be thoroughly cleaned of dust before they are moved off site to other work locations.
- b. Wherever possible, grading and trenching work shall be phased so that earth-moving equipment is working well ahead or downwind of workers on the ground.
- c. The area immediately behind grading or trenching equipment shall be sprayed with water before ground workers move into the area.
- d. In the event that a water truck runs out of water before dust is sufficiently dampened, ground workers being exposed to dust shall leave the area until a truck can resume water spraying.
- e. To the greatest extent feasible, heavy-duty earth-moving vehicles shall be closed-cab and equipped with a High Efficiency Particulate Arresting (HEPA)-filtered air system.
- f. Workers shall receive training in procedures to minimize activities that may result in the release of airborne *Coccidioides immitis* (CI) spores to recognize the symptoms of Valley Fever, and shall be instructed to promptly report suspected symptoms of work-related Valley Fever to a supervisor. Evidence of training shall be provided to the Kern County Planning and Natural Resources Department within five days of the training session.
- g. A Valley Fever informational handout shall be provided to all onsite construction personnel. The handout shall, at a minimum, provide information regarding the symptoms, health effects, preventative measures, and treatment. Additional information and handouts can be obtained by contacting the Kern County Public Health Services Department.
- h. Onsite personnel shall be trained on the proper use of personal protective equipment, including respiratory equipment. National Institute for Occupational Safety and Health (NIOSH)-approved respirators shall be provided to onsite personnel, upon request. When exposure to dust is unavoidable, provide appropriate NIOSH-approved respiratory protection to affected workers. If respiratory protection is deemed necessary, employers must develop and implement a respiratory protection program in accordance with Cal/OSHA's Respiratory Protection standard (Cal. Code Regs., tit. 8, § 5144).

Verification: At least 30 days prior to the start of the ground disturbance, the project owner shall submit the Valley Fever Management Plan to the CPM for review and approval. The CPM will notify the project owner of any necessary modifications to the plan within 15 days from the date of receipt. The project owner shall provide the CPM a Monthly Compliance Report to include a summary of all actions taken to maintain compliance with this condition.

Worker Safety And Fire Protection Conditions Of Certification

WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program which shall include a Sampling and Analysis Plan for monitoring wastewater from the cavern initial access construction if Method 1 is chosen, and a Sampling and Analysis Plan for routine sampling of excavated dust, soil, and rock removed from the cavern for the determination of hazardous wastes;
- a Construction Injury and Illness Prevention Program;
- a Rock Crusher Safety Program that includes a dust and particulate emissions controls;
- a Concrete Batch Plant Safety Program;
- a Construction Emergency Action Plan;
- an Emergency Response Plan;
- a Hazardous Material Business Plan (HMBP);
- a Spill Prevention, Control and Countermeasure Plan (SPCC);
- a Mining Safety and Health Plan that demonstrates compliance with all applicable MSHA regulations for the construction of the underground cavern; and
- a Construction Fire Prevention Plan that includes thoroughly detailed Fire Detection and Suppression Plans for both surface and underground construction activities, Emergency Rescue Plans for both surface and underground construction, and methods of access for emergency responders through locked gates at the surface and into the underground cavern.

The Personal Protective Equipment Program, the Exposure Monitoring Program, the Injury and Illness Prevention Program,

the Rock Crusher Safety Protocol, the Concrete Batch Plant Safety Protocol, and the SPCC shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan, Construction Emergency Response Plan, the Controlled Detonations Plan, the HMBP, and the Fire Prevention Plan shall be submitted to the Kern County Fire Department (KCFD) for review and comment prior to submittal to the CPM for approval. The Controlled Detonations Plan shall also be submitted to the Kern County Sheriff's Office for review and comment.

Verification: At least 90 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction and Safety and Health Program. At the same time, the project owner shall also provide to the CPM a copy of letters requesting comments submitted to KCFD and Kern County Sheriff's Office (KCSO). Written responses from the KCFD and KCSO, if any, detailing resolved comments shall be submitted to the CPM within 30 days of receipt by the Project Owner.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following items:

- an Operation Injury and Illness Prevention Plan;
- an Operations Emergency Action Plan that fulfills the requirements of California Public Utilities Code section 761.3(g);
- An Operations Emergency Response Plan;
- a Hazardous Materials Business Plan;
- a Spill Prevention, Control and Countermeasure Plan (SPCC);
- a Fire Prevention Plan (Cal. Code Regs., tit. 8, § 3221) that includes methods of access for emergency responders through locked gates;
- a Fire Protection System Impairment Program; and
- a Personal Protective Equipment Program (Cal. Code Regs., tit. 8, §§ 3401—3411).

The Operation Injury and Illness Prevention Plan, Hazardous Materials Business Plan, the SPCC Plan, Emergency Action Plan, Emergency Response Plan, Fire Prevention Plan, Fire Protection System Impairment Program, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval

concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan, Fire Protection System Impairment Program, and the Emergency Action Plan shall also be submitted to the KCFD for review and comment.

Verification: At least 30 days prior to the start of commissioning, the project owner shall submit to the CPM for review and approval the Operations and Maintenance Safety and Health Program. The project owner shall provide a copy to the CPM of letters requesting comments submitted to KCFD and written responses, if any from the KCFD detailing the resolved comments on the Operations Fire Prevention Plan, Fire Protection System Impairment Program, and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of compressed air energy projects, worker safety issues concerning underground mining, and relevant worker safety-related LORS. The CSS shall be capable of identifying workplace hazards relating to the construction activities; and has authority to take appropriate action to ensure compliance and mitigate hazards. The CSS shall:

- have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- ensure that the safety program for the project complies with Cal OSHA and federal regulations related to A-CAES projects;
- ensure that all construction and commissioning workers and supervisors receive adequate safety training;
- conduct accident and safety-related incident investigations and provide emergency response reports for injuries, and inform the CPM of safety-related incidents; and,
- ensure that all the plans identified in **WORKER SAFETY-1** and **WORKER SAFETY-2** are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the CSS. The contact information of any replacement CSS shall be submitted to the CPM within one business day.

The CSS shall submit in the Monthly Compliance Report (MCR) a monthly safety inspection report to include:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- summary report of safety management actions and safety-related incidents that occurred during the month;
- report of any continuing or unresolved situations and incidents that may pose danger to life or health;
- report of any visits from Cal OSHA and/or any complaints from workers to Cal OSHA; and,
- report of accidents, injuries, and near misses that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the DCBO for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. Those services shall be in addition to other work performed by the DCBO. The Safety Monitor shall be selected from an independent company not affiliated with the DCBO and report directly to the DCBO and would be responsible for verifying that the CSS, as required in **WORKER SAFETY-3**, implements all appropriate Cal OSHA and CEC safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall submit to the CPM a copy of the Project Construction Controlled Detonations Plan that contains a complete description of how explosives would be safely transported and used at the site, evacuation, security and fire prevention procedures, a blasting equipment list, and procedures for notification of nearby receptors. The Controlled Detonations Plan shall be prepared by a qualified, experienced, and licensed blasting contractor and in compliance with appropriate federal and state regulations addressing explosives and worker safety regulations, including: the Hazards Material Transportation Act (49 U.S.C. §§ 5101 *et seq.* and 49 CFR Part 171-177); the Organized Crime Control Act of 1970, Title XI (Public Law 91-452); Bureau of Alcohol, Tobacco, Firearms and Explosives (BATF) regulations (27 CFR Part 555), the California Fire Code Chapter 56, §§ 5603, 5604, and 5607, and Cal OSHA regulations Cal Code Regs., tit. 8, §§ 1550-1580 and 5236-5252). The

controlled detonations notification procedures included in the Controlled Detonations Plan shall include, but not be limited to:

1. At least 30 days before initiation of controlled detonations, the project owner shall notify, in writing, all residents or owners of dwellings or other structures within a 1-mile radius (or other distance as recommended by either the KCFD Chief or the KCSO) of proposed controlled detonations and describe how to request and submit a pre-controlled detonations survey. Notification shall include posting a written notice within the project site, in local newspapers, and on the Kern County public website describing proposed controlled detonations activities and how to obtain and submit a pre-controlled detonations survey.
2. The project owner shall determine the condition of the dwelling or structure and shall document any pre-controlled detonations damage and other physical factors that could more likely than not be affected by the controlled detonations. Structures such as pipelines, cables, transmission lines, cisterns, wells, and other water systems warrant special attention; however, the assessment of these structures may be limited to surface conditions and other readily available data.
3. Prior to finalizing the Controlled Detonations Plan, the project owner shall consult with jurisdictional authorities tasked with protecting waters of the state and implement avoidance and minimization measures, as required by California Department of Fish and Wildlife (CDFW), United States Army Core of Engineers (USACE), and regional water quality (Section 401) regulatory permits prepared for the project. Such protective measures shall be included in the Controlled Detonations Plan and/or incorporated by reference.
4. The explosives and blasting safety procedures to be included in the Controlled Detonations Plan shall include, but not be limited to the following:
 - a. using qualified, experienced, and licensed blasting contractors that shall perform controlled detonations using current and professionally accepted methods, products, and procedures to maximize safety and minimize the potential for wildfire ignition during controlled detonations operations;
 - b. both the quantity and duration of on-site explosives storage shall be minimized;

- c. explosive products shall be managed on-site so that they are either used in the borehole, returned to the delivery vehicle, or placed in secure containers for off-site disposal;
- d. explosives shall be stored in an approved structure (magazine);
- e. explosives storage facilities shall be bullet-resistant, weather-resistant, and fire resistant;
- f. magazines sites shall be in remote (out-of-sight) areas with restricted access, kept cool, dry, and well ventilated, and will be properly labeled and signed;
- g. controlled detonations are prohibited during extreme fire danger periods;
- h. fire suppression personnel shall be posted at controlled detonation sites at all times;
- i. refueling of vehicles carrying explosives shall not be allowed on the project site;
- j. smoking shall be prohibited during the loading, transporting, unloading, and use of explosives;
- k. vehicles carrying explosives shall not be parked or left unattended except in designated parking areas with approval of the KCFD Chief or State Fire Marshal;
- l. ignition devices shall be prohibited within 50 feet of an explosives' storage area;
- m. magazine sites shall be well ventilated and maintained so that they are clear of fuels and combustible materials;
- n. magazines shall be protected from wildfires that could occur in the immediate area;
- o. detonators shall be stored separately from other explosive materials;
- p. the most stringent spacing between individual magazines will be determined according to the guidelines contained in the BATF publication or state or local explosive storage regulations;
- q. all active controlled detonation zones shall have clear warning signs at key access points to ensure the public does not accidentally enter a controlled detonation zone;
- r. the blasting contractor shall use a signaling system to alert all onsite workers of an impending blast;
- s. following detonation, the blasting area shall be inspected for undetonated or misfired explosives;
- t. appropriate practices shall be developed and implemented to prevent misfires;

- u. the controlled detonation areas shall also be inspected for hazards such as falling rock and rockslides;
- v. special attention shall be given to preventing potential hazards in the controlled detonation areas resulting from flying rock, destabilized walls, structures, presence of low flying aircraft, and dispersion of smoke and gases;
- w. loaded explosives shall be detonated as soon as possible and shall not be left in the blast holes overnight, unless weather or other documented safety concerns reasonably dictate that detonation should be postponed; and
- x. explosives shall be loaded to maintain good continuity in the column load to promote complete detonation. Industry accepted loading practices for priming, stemming, decking and column rise shall be attended to.

The Controlled Detonations Plan shall be submitted to the KCFD and the KCSO for review and comment prior to submittal to the CPM for approval.

Verification: At least 90 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Controlled Detonations Plan. At the same time, the project owner shall also provide to the CPM a copy of letters from the KCFD and the KCSO containing their comments on the Controlled Detonations Plan.

WORKER SAFETY-6 The project owner shall prepare and submit a Sampling and Analysis Plan (SAP) to conduct laboratory periodic testing of the water from the AVEK Water Agency to be used for dust control and surface soils from the dirt roads on the site, have a state certified laboratory conduct the analysis of hexavalent chromium, or provide copies of an equivalent analysis if available from AVEK, and submit both the SAP and lab results to the CPM for review and approval prior to the use or ground application of water from those wells.

Verification: At least 60 days prior to the starting of construction, the project owner shall submit the SAP to the CPM for review and approval. At least 30 days prior to the planned use of the AVEK supplied water, the project owner shall submit the laboratory findings to the CPM for review and approval of the use of the AVEK water for dust control and human consumption, and the surface soil tests shall be used to determine a baseline level of hexavalent chromium. At least every six months, sampling and analysis shall be repeated and the results submitted to the CPM for review.

WORKER SAFETY-7 The project owner shall develop and implement a worker Valley Fever Prevention and Response Plan that includes an enhanced

Dust Control Plan containing the requirements described in **AQ-SC3** and additionally requires:

1. The mandatory on-site use of earth moving and excavating equipment with environmental cabs (with air conditioning (AC) and HEPA filters) and keeping the doors of the cab closed;
2. Mandatory site worker use of dust masks (NIOSH N-95 or better) in areas where active trenching occurs, even if dust is not visually detected;
3. Implementation of enhanced dust control methods (increased frequency of watering to no less than three (3) times each day at locations where active trenching is conducted), use of dust suppression chemicals, etc. consistent with **AQ-SC3**) immediately whenever visible dust comes from or onto the site;
4. Specific training on Valley Fever as per Labor Code, section 6109, which requires that employers of workers in high-incidence counties (Kern County is included) shall provide effective awareness training on Valley Fever to all employees before work begins and annually by that date thereafter;
5. Medical referral protocol; and
6. Reporting of medically-diagnosed cases to the California Department of Public Health, Cal OSHA, and the CPM.

Verification: At least 60 days prior to the commencement of site mobilization, the Valley Fever Prevention and Response Plan shall be provided to the CPM for review and approval.

WORKER SAFETY-8 The project owner shall prepare and implement a detailed comprehensive Construction Underground Fire Protection Plan which shall include the following sections:

1. Pre-planning and hazard identification
2. Ventilation control
3. Combustible material management
4. Fire detection and alarm systems
5. Fire suppression systems
6. Emergency Response Plan that includes evacuation procedures and refuge chambers
7. Compliance with regulations from Cal OSHA, MSHA, and NFPA 122.
8. Worker and Management Training

9. Regular inspections and maintenance

Verification: At least 90 days prior to the start of mobilization of underground cavern construction activities, the project owner shall provide to the KCFD a copy of the plan for review and comment and to the CPM for review and approval.

WORKER SAFETY-9 The project owner shall adhere to all applicable provisions of the latest version of NFPA 850: Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations, and NFPA 122: Standard for Fire Prevention and Control in Metal/Nonmetal Mining and Metal Mineral Processing Facilities, as the minimum level of fire protection. The project owner shall interpret and adhere to all applicable NFPA 850 and NFPA 122 recommended provisions and actions stating "should" as "shall." In any situations where both NFPA 850, NFPA 122, and the state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850 and NFPA 122. At least 90 days prior to the start of construction of the fire protection system, the project owner shall provide all fire protection system specifications and drawings to the KCFD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

WORKER SAFETY-10 The project owner shall ensure that a portable automated external defibrillator (AED) is on site during construction, commissioning, and operations and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functional. During construction and commissioning the following persons shall be trained in its use and shall be on site whenever the workers that they supervise are on site: the Construction Project Manager or delegate, the CSS or delegate, and all shift foremen. During operations, all project employees on site shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable AED is available to be made available on site as soon as physically possible along with a copy of the training and maintenance program for review and approval.

WORKER SAFETY-11 The project owner shall do the following at the project site:

1. Provide at least two gates into the facility wide enough for emergency access with both equipped with Knox

Boxes for access by the KCFD, the California Highway Patrol (CHP), and KCSO;

2. Install remote fire or heat sensors at sufficient locations to cover the entire facility (e.g., thermal infrared);
3. Provide fire water flow of at least 1,500 gallons per minute;
4. Install closed-circuit television (CCTV) cameras with Pan, Tilt, Zoom (PTZ), and low-light capability that cover the entire area of the facility and which would have their own separate power supply;
5. Establish a Command and Control protocol for staff to perform emergency duties and responsibilities during the detection, initiation, and escalation of an on-site ground level or underground level fire or rescue operation;
6. Ensure that three certified professionals, one to conduct underground gas testing, one to serve as a safety inspector, and one Certified Industrial Hygienist (CIH) to conduct air sampling and analysis, are present onsite every day and visit the cavern at intervals as dictated by a plan reviewed and approved by the CPM;
7. Establish an annual joint training program with the KCFD that includes table-top exercises for fire and rescue operations;
8. Consult with the KCFD in preparing subsurface fire protection and rescue procedures; and
9. Hold a pre-construction and excavation conference with the CPM, Cal OSHA Mining and Tunneling Unit, the DCBO, and the DCBO Safety Monitor to review all safety plans for the cavern excavation and revise those plans as necessary.

Verification: At least 60 days prior to the starting of construction, the project owner shall provide all the information required above to the KCFD for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection. The project owner shall also schedule, after consultation and agreement of all parties involved, the pre-cavern construction and excavation conference at least 60 days prior to the start of cavern excavation and shall give the CPM at least 30 days written notice of the meeting. The project owner shall also provide a letter that the KCFD, CHP, and KCSO have been given access to the Knox boxes.

WORKER SAFETY-12 The project owner shall either:

1. Reach an agreement with the KCFD regarding funding to provide mitigation for direct and cumulative project-related impacts, or
2. If no agreement can be reached, provide funding for a fully equipped Urban Search and Rescue (USAR) Unit and building, including necessary equipment for use in Eastern Kern County, and staffing costs during the construction phase and agreements to pay for emergency response if the USAR is not delivered before construction begins, which shall consist of a lump sum of \$1,900,000 for the USAR, plus a lump sum payment in the amount of \$2,400,000 for the first year of staffing and made annually until the final Certificate of Occupancy for operations is issued by Kern County or as authorized by the CEC, or if construction begins and the new USAR Unit has not been delivered, then the applicant shall sign an agreement with the KCFD to reimburse costs for responding to incidents at the Willow Rock site. Such an agreement will terminate once the USAR Unit is delivered, and the staffing annual payment is made.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall provide to the CPM for review and approval either:

- a. A copy of the agreement with the KCFD, or
- b. Documentation that a letter of credit has been provided to the KCFD in the amounts listed above and that a letter of credit will be provided each year (plus yearly negotiated increases), in the amounts listed above, or an agreement to reimburse the KCFD for the costs for responding to incidents at the Willow Rock site until the USAR Unit is completed and occupied.

Hazards and Hazardous Materials Conditions of Certification

HAZ-1 The project owner shall prepare a Hazardous Materials Business Plan (HMBP) and a Spill Prevention Control and Countermeasure (SPCC) Plan, one of each for construction and one of each for operations and provide these plans to the Kern County Public Health Services Department - Hazardous Materials Program (the CUPA), for review and comment and to the Compliance Project Manager (CPM) for review and approval.

Verification: At least 60 days prior to the start of construction and 60 days prior to the start of operation, the project owner shall prepare and submit the respective HMBP and SPCC Plan to the Kern County Public Health Services Department - Hazardous Materials

Program, for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to the Kern County HazMat Compliance Program requesting review and comment.

At least 30 days prior to the start of construction and 30 days prior to the start of operation, the project owner shall provide copies of any comment letters received from the Kern County Public Health Services Department - Hazardous Materials Program along with any changes to the respective HMBP and SPCC plans for CPM review and approval. After CPM review and approval, the project owner shall provide complete copies of the final respective HMBP and SPCC Plan to the Kern County Public Health Services Department - Hazardous Materials Program, sending copies of the correspondence to the CPM.

HAZ-2 After the start of project operation, the project owner shall not use or change the quantity of hazardous materials that would require a change in the project's HMBP unless approved in advance by the CPM.

Verification: At least 30 days prior to changing the quantity of or using a new hazardous material onsite, the project owner shall notify and seek approval from the CPM. The project owner shall provide to the CPM, in the Annual Compliance Report, the HMBP's list of hazardous materials and quantities contained at the facility.

HAZ-3 The project owner shall report new or temporary hazardous waste generator numbers issued by the USEPA or California Department of Toxic Substances Control (DTSC) to the CPM prior to generating any hazardous waste during demolition, construction, or operations.

Verification: The project owner shall keep a copy of the identification number(s) on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once, unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM 30 days before the change occurs.

HAZ-4 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval.

The Construction Site Security Plan shall include the following:

1. perimeter security consisting of fencing enclosing the construction area;

2. security guards during hours when construction personnel are not present at the site;
3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
5. protocol for contacting law enforcement and the CPM in the event of suspicious activity, incident, or emergency; and evacuation procedures.

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-5 The project owner shall also prepare a site-specific security plan for the operational phase that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below as per the latest version of the NERC Security Guideline for the Electricity Sector (Security Guideline for the Electricity Sub-sector: Physical Security Response. Approved by the Critical Infrastructure Protection Committee (CIPC) on October 28, 2013) or more recent if and when available.

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (and with slats or other methods to restrict visibility if a fence is selected);
2. main entrance security gate, either hand operated or motorized;
3. evacuation procedures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
6. a statement (refer to sample, **Attachment B**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;
7. a statement(s) (refer to sample, **Attachment C**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM

- after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;
8. site access controls for employees, contractors, vendors, and visitors;
 9. a statement(s) (refer to sample, **Attachment D**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
 10. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the O&M building (or remotely) with cameras able to pan, tilt, and zoom, have low-light capability, and able to view 100 percent of the perimeter fence, and outside entrances to the site for the surface facilities (pumps, pressure vessels, heat exchangers, electrical generators, and O&M building; and,
 11. additional measures to ensure adequate perimeter security consisting of either:
 - a. perimeter breach detection or onsite motion detector capabilities; and
 - b. security guard(s) present 24 hours per day, seven days per week; or
 - c. facility personnel on site 24 hours per day, seven days per week.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures or may require additional measures such as protective barriers for critical facility components, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation (NERC), after consultation with both appropriate law enforcement agencies and the project owner.

Verification: At least 30 days prior to the initial receipt of hazardous materials onsite, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. In the annual compliance report, the project owner shall include signed statements similar to **Attachments B and C** that all current project employees and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security

plan. In the annual compliance report, the project owner shall include a signed statement similar to **Attachment D** that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZ-6 The project owner shall prepare and submit to the CPM a Soils Management Plan (SMP) prior to any ground disturbing activities. The SMP shall be prepared/approved by an environmental professional, a California Registered Civil Engineer, or a California Registered Geologist with sufficient experience in hazardous waste management. The purpose of the SMP is to establish appropriate management practices and procedures for handling impacted soil and/or groundwater or other materials that may be encountered during construction activities to ensure worker protection from toxicant exposure. The SMP shall be updated as needed to reflect changes in laws, regulations, or site conditions. All ground disturbing activities at the site and potential disposal of contaminated soil and/or groundwater shall be conducted in accordance with the SMP. Where actions are required in accordance with the SMP, an SMP summary report, which includes all analytical data and other findings, shall be submitted once the earthwork has been completed.

Topics covered by the SMP shall include, but not be limited to:

1. Land use history including description and locations of any known contamination.
2. The nature and extent of any previous investigations and remediation at the site.
3. The nature and extent of any unremediated contamination at the proposed site.
4. A listing and description of institutional controls such as the county's excavation ordinance and other local, state, and federal regulations and laws that would apply to the project.
5. Names and positions of individuals involved with site management and their specific roles.
6. An earthwork schedule.
7. A description of protocols for the investigation and evaluation of any previously unidentified contamination that may be encountered in time. The protocol shall be for temporary and permanent controls that may be required to reduce exposure to onsite workers, visitors, and the public.
8. A site-specific Health and Safety Plan (HSP) to be implemented by all contractors and subcontractors at the site. The HSPs shall be specific to each of the contractors' or subcontractors' scopes of work. The HSPs shall be prepared by a Certified Industrial Hygienist and would

protect onsite workers by including engineering controls, personal protective equipment, monitoring, and security to prevent unauthorized entry and to reduce construction related hazards. The HSPs shall address the possibility of encountering subsurface chemical contamination and include procedures to protect workers and the public. The HSPs shall be updated as needed if site conditions change significantly, such as discovery of contaminated soil or groundwater. Copies of the approved HSPs shall be kept at the project site.

12. Hazardous waste determination and disposal procedures for known and previously unidentified contamination.
13. Requirements for site-specific techniques at the site to minimize dust, manage stockpiles, run-on and run-off controls, waste disposal procedures, etc.
14. Copies of relevant permits or closures from regulatory agencies.

Verification: At least 45 days prior to any ground disturbance, the project owner shall submit the SMP to the Kern County Public Health Services Department - Hazardous Materials Program for review and comment and to the CPM for review and approval. An SMP summary shall be submitted to the CPM within 30 days of completion of any ground disturbance.

HAZ-7 The project owner shall provide the resume of an experienced and qualified environmental professional who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall reflect experience in remedial investigation and feasibility studies. The environmental professional performing the interviews and site reconnaissance shall possess sufficient education, training, and experience to assess the nature, history, and setting of the subject property/area and shall review and interpret the information used to form the basis of the findings, opinion and conclusions in the report.

The qualified person shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil and/or groundwater.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

HAZ-8 If suspected contaminated soil and/or groundwater is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), the qualified environmental professional shall inspect the site, determine the need for sampling to

confirm the nature and extent of contamination, and provide a written report to the project owner, the Kern County Public Health Services Department - Hazardous Materials Program and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the environmental professional shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the environmental professional, significant remediation may be required, the project owner shall contact the CPM and representatives of the Kern County Public Health Services Department - Hazardous Materials Program and possible oversight.

Verification: The project owner shall submit any final reports filed by the environmental professional to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

Solid Waste Management Condition of Certification

SOLID WASTE-1 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the Compliance Project Manager (CPM) for review and approval. The plans shall contain, at a minimum, the following:

1. A description of all waste streams, including projections of frequency, amounts generated, and hazard classifications.
2. Methods of managing each waste, including treatment methods and entities contracted for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.
3. A description of methods for maintaining waste shipping and disposal documents, including manifest and bills of lading, receipts and invoices. All waste shipping papers, receipts, and applicable documentation shall be readily available for review.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for review and approval.

The Operation Waste Management Plan shall be submitted to the CPM for review and approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

Biological Resources Conditions of Certification

BIO-1 Designated Biologist Selection. The project owner shall assign at least one Designated Biologist to the project (multiple personnel may be required to ensure compliance with Conditions of Certification). The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the California Energy Commission (CEC) Compliance Project Manager (CPM) for review and approval.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least three years of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

For work related to western Joshua tree, Crotch's bumble bee and/or burrowing owl, the above qualifications shall also apply. In addition, the Designated Biologist(s) must meet the following minimum qualifications:

1. Knowledgeable in the biology and natural history of western Joshua tree and its woodlands, Crotch's bumble bee and/or burrowing owl, exclusion and/or monitoring techniques as applicable, construction and operational impact monitoring;

2. Demonstrable experience implementing exclusion and/or monitoring techniques and construction and operational impact monitoring for western Joshua tree, Crotch's bumble bee or burrowing owl;
3. Demonstrable experience implementing conditions of a CDFW Incidental Take Permit or acting as a Designated Biologist, or other experience implementing a CDFW Incidental Take Permit as a Biological Monitor.

Verification: The project owner shall submit to the CPM resumes and any other relevant documentation for Designated Biologist(s) approval at least 75 days prior to the start of site mobilization and/or construction-related ground disturbance activities. No site mobilization or construction related activities shall commence until a Designated Biologist has been approved by the CPM.

If a Designated Biologist needs to be replaced, the specified information regarding the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

BIO-2 Designated Biologist Duties. The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and decommissioning activities. The project owner may request approval from the CPM to terminate the Designated Biologist's function during plant operation in writing and provide justification of the request. However, the project owner shall appoint a replacement Designated Biologist at any time as directed by the CPM and will ensure the same duties are performed during closure activities.

If no Designated Biologist is available at any time during the life of the project (including operation phase) and the CPM determines that project-related actions may affect biological resources, the CPM may direct the project owner to assign a replacement Designated Biologist, for short-term or long-term monitoring and reporting. The Designated Biologist may be assisted by the approved Biological Monitor(s) but remains the primary contact for the project owner and CPM.

The Designated Biologist Duties shall include the following:

1. Advise the project owner's Construction and Operation Managers on the implementation of the **Biological Resources** Conditions of Certification.
2. Ensure that all Conditions of Certification are met and that all reporting standards for each Condition of Certification are completed and submitted to the CPM and any other regulatory agencies in compliance with specified timelines.
3. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) (**BIO-6**) to be submitted by the project owner.
4. Be available to supervise other biological resource staff, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat.
5. Ensure that all sensitive biological resource areas are flagged, delineated, or marked, and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions.
6. Notify the CPM and CDFW of any observation of an unanticipated sensitive biological resource(s) encountered during all phases of the project. Unanticipated resources include sensitive species not addressed in the environmental document because of a perceived low potential to occur, species that are known to occur but have been proposed as a candidate for state or federal listing after the approval of the project, and common species whose range is unexpected in the project area. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the observation.
7. Inspect or direct the site personnel how to inspect active construction areas where animals may have become trapped prior to construction commencing each day. Inspect or direct the site personnel how to inspect the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. If site personnel perform these inspections, then they shall be trained by the Designated Biologist, and the name of the personnel and date

of training shall be included in a log in the Monthly Compliance Report.

8. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way. Inspect soil or spoil stockpiles and dust abatement watering for compliance with **BIO-7**. Inspect erosion control materials (e.g., hay bales) to confirm weed-free certification. Inspect weed infestations and monitor eradication measures to determine success. Inspect trash receptacles, monitor site personnel compliance with trash handling, pet prohibitions, and all other WEAP components (**BIO-5**).
9. Ensure the implementation of the post construction Conditions of Certification.
10. Notify the project owner and the CPM and CDFW directly per the requirements of **BIO-4** of any non-compliance with any **Biological Resources** Conditions of Certification during all phases of the project. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the non-compliance incident.
11. Notify the project owner, the CPM, and CDFW directly of any special-status species injury or mortality (notifications for Crotch's bumble bee or burrowing owl are addressed per **BIO-13** and **BIO-19**) Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday. The initial notification shall be followed by a formal written notification submitted to the CPM and CDFW within 48 hours of the observation.
12. Respond directly to inquiries of the CPM regarding biological resource issues by phone, email, or other correspondence.
13. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Reports and the Annual Compliance Report.

14. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits.
15. Maintain the ability to be in regular, direct communication with the CPM and representatives of CDFW, and USFWS, including notifying these agencies of dead or injured listed species and reporting special-status species observations to the California Natural Diversity Database (CNDDB).

Verification: The Designated Biologist shall submit in the Monthly Compliance Reports to the CPM copies of all written reports and summaries that document construction activities that have the potential to affect biological resources. The Designated Biologist's written records will be made available for the CPM's inspection on request at any time during normal business hours. During project operation, the Designated Biologist (s) shall submit record summaries in the Annual Compliance Reports unless their duties cease, as approved by the CPM.

BIO-3 Biological Monitor Selection. The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitor(s) to the CPM for approval and the CDFW for review and comment. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Verification: The project owner shall submit the specified information to the CPM for review and approval at least 30 days prior to the start of any site mobilization activities. Within 10 days of completion of training, the Designated Biologist shall submit a written statement to CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional biological monitors are needed during construction or for species specific surveys, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIO-4 Designated Biologist and Biological Monitor Authority. The project owner's construction/operation manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resource Conditions of Certification.

1. If required by the Designated Biologist and/or Biological Monitor(s), the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and

operation activities in areas specified by the Designated Biologist and/or Biological Monitor. The Designated Biologist shall:

- a. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
 - b. Inform the project owner and the construction/operation manager when to resume activities.
2. The Designated Biologist or Biological Monitor shall notify the project owner and the CPM of any work stoppage of site mobilization, ground disturbance, grading, construction, and operation activities and associated non-compliance incidents. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday.
 3. The Designated Biologist shall notify and advise the CPM of any corrective actions that have been taken or would be instituted as a result of the work stoppage.
 4. The CPM, in coordination with CDFW, as appropriate, will determine if corrective action has been effective and will direct the project owner to take further corrective action as needed.
 5. If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

Verification: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the morning following the incident, or Monday morning in the case of a weekend, or the next business day in the event of a state or federal holiday) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem within one (1) working day of initiating the corrective action.

BIO-5 Worker Environmental Awareness Program (WEAP). The project owner shall develop and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall submit the draft WEAP for review and approval from the CPM and CDFW for review and comment. The WEAP shall be administered to all onsite personnel who will enter the project site including but not limited to surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors

(but excluding delivery personnel), biologists, cultural, tribal, and paleontological monitors. An abbreviated WEAP (WEAP Light) can be provided to vendors, such as delivery personnel (e.g., building materials, concrete, heavy equipment, etc.), who periodically enter the project site and are limited to areas such as existing access roads and/or lay down areas. The WEAP Light shall also be submitted for review and approval from the CPM. The WEAP shall be implemented during site mobilization, vegetation clearing, preconstruction, construction, commissioning, operation, non-operation, and closure. All workers must complete the WEAP prior to commencing work on the project. The WEAP and the WEAP Light may be recorded for later electronic viewing by new workers who begin work after the initial presentations.

The WEAP shall:

1. Be developed by or in consultation with the Designated Biologist (see **BIO-1**) and consist of an on-site or training center presentation in which supporting written material and electronic media in English, as well as Spanish or other languages, as applicable, including photographs of protected species and their habitat, is made available to all participants;
2. Identify the lead agencies, provide an overview of the Conditions of Certifications, other regulatory permit requirements, and applicable LORS that must be complied with and the ramifications of non-compliance which may include fines, imprisonment, work stoppages, or loss of employment depending on the violation;
3. Identify the roles of environmental staff and define communication protocols and chain of command between environmental and construction staff. Define what actions monitors can approve such as stopping work under specific circumstances, providing guidance to comply with conditions, conducting surveys, and what actions monitors cannot approve such as directing work, expanding work areas from approved limits, changing Conditions of Certification requirements, or approving variances to permit conditions. Identify key field contacts and ensure that this information is posted in all break areas;
4. Provide examples of environmental signage and flagging that would be used to delineate work limits; areas for avoidance, state and or federal drainages, or other protected areas, evacuation routes, and approved staging areas;

5. Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas, and explain the reasons for protecting these resources; provide information to participants that no snakes or other wildlife shall be intentionally harmed (unless posing a reasonable and immediate threat to humans);
6. Describe standard environmental commitments and best management practices that apply to the project including but not limited to: storing trash in closed receptacles and removing weekly to prevent attracting animals, capping pipes and other cavities that could be used by birds and small mammals; collecting and removing the carcasses of dead animals; limiting work to daytime hours, limiting work during periods of high rainfall, preventing vehicles and equipment from operating within a stream unless specifically authorized by other permits or Conditions of Certification; restricting smoking to designated areas; storing chemicals and fuel in designated areas; spill prevention measures; and reporting requirements;
7. Identify project vehicle speeds on paved and unpaved access roads;
8. Place special emphasis on the protection of nesting birds, species of special concern and listed species including pictures and information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
9. Provide pictures of the sensitive plants and wildlife known to occur in the project area, including western Joshua tree, Crotch's bumble bee, desert tortoise, legless lizards, Swainson's hawk, bald and golden eagles, burrowing owl, loggerhead shrike, Mohave ground squirrel, American badger, desert kit fox, ringtail, and other sensitive plants and wildlife. Provide information on sensitivity to human activities, legal protection, reporting requirements, and how to identify construction avoidance zones for these species as marked by flagging, staking, or other means, as described above;
10. Provide an overview for all personnel of the risk of potential impacts to small mammals, birds, and reptiles from vehicle strikes on all project roads (paved and unpaved) during construction, operations, closure phases, reporting requirements, and protection measures;
11. Describe the risk of wildfires in desert communities and the measures that will be taken to reduce these risks such as avoiding parking in

tall vegetation, limits to where workers can smoke; the locations of fire safety equipment, contact information and the procedure should a wildfire be ignited, required tools for each piece of equipment such as a shovel, Pulaski, and fire extinguisher, restrictions on welding and controlled detonations, use of the Project Activity Level (PAL) system that describes what activities can occur based on specific weather conditions including Red Flag days;

12. Provide an overview of potential impacts to avian and bat species from collisions with the cooling towers, generation tie-line, and other features associated with the operations phase, reporting requirements, and protection measures;
13. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
14. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines. A small wallet card or pamphlet with key contacts and resource information shall be prepared and provided after the training. A hard hat sticker shall also be provided to each worker to demonstrate to the monitors that they have participated in the training.

The WEAP Light shall include a summary of the items above as they relate to the limited areas that vendors need to access such as existing access roads and/or lay down areas.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist and documented within the Monthly Compliance Reports.

Verification: At least 45 days prior to start of site mobilization the project owner shall provide to the CPM for review and approval the draft WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program. At least 10 days prior to site mobilization the project owner shall submit the approved final WEAP and implement the training for all workers.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least 6 months after the start of commercial operation.

Throughout the life of the project, the WEAP shall be repeated annually for permanent operational employees and shall be routinely administered within 1 week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Training acknowledgement forms shall be maintained by the project owner and shall be made available to the CPM upon request. Workers shall receive and be required to visibly display a hard-hat sticker or certificate that they have completed the training.

During project operation, signed statements for operational personnel shall be kept on file for 6 months following the termination of an individual's employment.

BIO-6 Biological Resources Mitigation Implementation and Monitoring Plan. The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP). The project owner shall provide the draft BRMIMP to the CPM for review and comment. No site mobilization or construction activities may occur prior to approval of the final BRMIMP by the CPM. Under no circumstances shall ground disturbance proceed without implementation of all applicable permit conditions. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include the following:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;
3. All biological resource mitigation, monitoring, and compliance measures required in state or federal agency terms and conditions, such as those provided in the National Pollution Discharge Elimination System (NPDES) Construction Activities Stormwater General Permit and Waste Discharge Certification;
4. A discussion of all sensitive biological resources that could be impacted by project site mobilization, construction, operation, and decommissioning;
5. A detailed description of measures that shall be taken to avoid or mitigate impacts on each special-status species potentially impacted by construction and operation, including remedial actions;

6. All required mitigation measures for each sensitive biological resource;
7. All locations on a map, at an approved scale (typically 1:6,000 or other scale with CPM approval), of special-status biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction and operation;
8. Aerial photographs, at an approved scale (typically 1:6,000 or other scale with CPM approval), of all areas to be disturbed during project construction activities; include one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. The aerial photographs shall include a reference map that shows the aerial map location in reference to the project site, reference key on each aerial, and displays the project boundary. Provide planned timing of aerial photography and a description of why times were chosen;
9. Provide a final accounting of the actual acreage to be permanently or temporarily impacted and a determination of whether more or less habitat compensation is necessary than the estimates in **BIO-14**;
10. All measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
11. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
13. All performance standards and remedial measures to be implemented if performance standards are not met;
14. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval;
15. All final versions of required plans including WEAP, Vegetation Management Plan, Weed Control Plan, Invasive Species Management Plan, Nesting Bird Management Plan, and all other individual biological mitigation and/or monitoring plans associated with the project shall be included as attachments; and

16. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the CNDDB, per CDFW requirements.

Verification: The project owner shall submit the draft BRMIMP to the CPM for review and approval at least 45 days prior to start of any site mobilization. The project owner shall provide the final BRMIMP to the CPM at least 10 days prior to start of any site mobilization.

If any federal permits have not yet been received when the final BRMIMP is submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition(s). The project owner shall submit to the CPM and CDFW the revised or supplemented BRMIMP within 10 days following the project owner's receipt of any additional federal permits. Any changes to the approved BRMIMP shall be submitted to the CPM at least 10 days prior to implementation and must be approved by the CPM in consultation with CDFW prior to implementation.

Implementation of BRMIMP measures shall be reported in the Monthly Compliance Reports by the Designated Biologist (e.g., survey results, construction activities that were monitored, non-compliance incidences and resolution, species observed, etc.). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying which items of the BRMIMP have been completed, a summary of all CPM-approved modifications to mitigation measures made during the project's site mobilization and construction activities, and which mitigation and monitoring items are still outstanding.

To verify that the extent of construction disturbance does not exceed that described in these conditions, the project owner shall submit aerial photographs, at an approved scale, taken before and after construction to the CPM and CDFW. The first set of aerial photographs shall reflect site conditions prior to any preconstruction site mobilization and construction activities and shall be submitted prior to initiation of such activities. The second set of aerial photographs shall be taken subsequent to completion of construction and shall be submitted to the CPM for review and approval, and CDFW for review and comment, no later than 30 days after completion of construction. The project owner shall also provide a final accounting in whole acres of vegetation communities/cover types present before and after construction no later than 30 days after completion of construction. Construction acreages shall be rounded to the nearest acre. The project owner shall also provide Geographic Information Systems (GIS) shapefiles of all pre-and post-disturbance areas no later than 30 days after completion of construction.

BIO-7 General Impact Avoidance and Minimization Measures. The project owner shall ensure implementation of the following measures during site mobilization, construction, operation, and closure to manage their project site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Avoid Controlled Detonations at Night. Controlled detonations shall be limited to daylight hours and shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise, unless authorized by the CPM. Sunrise and sunset times are established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located. The schedule of controlled detonations shall be provided to the Designated Biologist and/or Biological Monitors. The Designated Biologist and/or Biological Monitors shall monitor, observe, and record wildlife reactions during the controlled detonations to assess animal behavior and to determine how species in adjacent habitat are affected, unless approved by the CPM to discontinue monitoring.
2. Limit Disturbance Areas. The boundaries of all areas to be temporarily or permanently disturbed (including staging areas, access roads generation tie-line pole locations, etc.) shall be delineated with stakes and flagging prior to any site mobilization, vegetation clearing, ground disturbance, or construction activities in consultation with the Designated Biologist. All construction sites, laydown areas, and parking locations shall be fenced to prevent potential access to the site by small animals including but not limited to desert tortoise. Fencing shall not be required around generation tie-line line pole locations. Any deviations of the fencing requirements shall be approved by the CPM. Spoils shall be stockpiled away from the edges of drainages and stabilized to ensure sediment laded water does not enter the drainage. All disturbances, vehicles, and equipment shall be confined to the flagged areas.
3. Minimize Road Impacts. New and existing roads that are planned for construction, widening, or other improvements shall not extend beyond the flagged impact area as described above. All vehicles passing or turning around would do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads or the construction zone, the route shall be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

4. Minimize Traffic Impacts. Vehicular traffic during project site mobilization, construction and operation shall be confined to existing routes of travel to and from the project site, and cross-country vehicle and equipment use outside designated work areas shall be prohibited. The speed limit shall not exceed 25 miles per hour on paved or stabilized unpaved roads within the project area, on maintenance roads for linear facilities, or on access roads to the project site. No vehicle shall exceed 10 miles per hour on unpaved areas within the project site, except on stabilized unpaved roads. Project vehicles shall abide by posted speed limits on paved public roads outside the project site.
5. Inspect Pipes and Trenches. At the end of each workday, the Designated Biologist, Biological Monitor, and/or site personnel (approved and trained by the Designated Biologist, as described under **BIO-2**) shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If site personnel are inspecting trenches, bores, and other excavations and wildlife is trapped, they shall immediately notify the Designated Biologist and/or Biological Monitor. If backfilling is not feasible, all trenches, bores, and other excavations shall be covered to prevent wildlife entrapment or sloped at a 3:1 ratio at the ends to provide wildlife escape ramps. Should wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the animal to a safe location. Any wildlife encountered during construction shall be allowed to leave the construction area unharmed.
6. Prevent Wildlife Entrapment. All pipes, tubes, ducting, or other cavities shall be capped to prevent wildlife entrapment. Portable toilets shall require vent pipes to be screened to prevent cavity using birds from becoming trapped in the pipe.
7. Reservoir Management Plan. The project owner shall submit a Reservoir Management Plan to the CPM for review and approval, in consultation with CDFW, prior to construction of the reservoir. The Plan shall include information on how wildlife entrapment shall be minimized at the reservoir. This shall include fencing height, type of fencing material (e.g., privacy slats, mesh size) number and location of wildlife escape ramps, inspection and reporting procedures, annual reporting of the number and type of species entrapped, injured, or killed. Fencing shall be designed to serve as a visual barrier and effectively deter wildlife from entering the enclosed reservoir area.

The Plan shall include details of the design of the floating interlocking reservoir cover, including features that minimize wildlife impacts, and

identify additional wildlife deterrent measures as needed to prevent access and contact with reservoir water. Measures shall address both the installation and operation phases of the reservoir to avoid and minimize impacts to wildlife.

In addition, the Plan shall include a process for evaluating the efficacy of the cover, ramps, and other wildlife protection features with monthly reporting during the first year of reservoir operation and annual reporting thereafter for the life of the project, unless an alternative reporting schedule is approved by the CPM. Monthly reports during Year 1 shall include inspection dates, status of all exclusion features, and a log of observed or reported wildlife interactions. Annual reports shall summarize all wildlife incidents, deterrent maintenance actions, and recommendations for improvements.

If any state or federally listed species are found to be injured or killed as a result of reservoir operations, the project owner shall notify the CPM and CDFW and shall implement appropriate remedial actions as directed by the CPM, in consultation with CDFW. The Plan shall outline potential remedial measures, including modifications to exclusion features, installation of wildlife deterrents, operational changes, or habitat protection actions, subject to CPM review and approval. The CPM, in consultation with CDFW, may require amendments to the Reservoir Management Plan based on mortality or recurring deficiencies in deterrent infrastructure. The goal of the Plan shall be to ensure that wildlife mortality is avoided.

8. Unexpected Wildlife. The Designated Biologist or Biological Monitor shall ensure that any unexpected special-status wildlife species such as California condor, desert tortoise, Mohave ground squirrel, or other species are fully avoided during construction. Should an unexpected wildlife species be detected a non-disturbance buffer shall be implemented based on the species ecology or species-specific Condition of Certification, and work shall be suspended in that area until the animal leaves on its own volition. Any observations of unexpected wildlife should comply with notification requirements provided in **BIO-2**, Item 6.
9. Bat Roost Protection and Mitigation
 - a. Active Bat Maternity or Hibernacula. If active maternity roosts or hibernacula are found during surveys by an approved bat biologist, submitted for approval under **BIO-3**, the structure, tree or feature occupied by the roost shall be avoided (i.e., not removed) until the young have matured or the hibernacula

period is over. When an active maternity roost or hibernacula is present within 500 feet of a construction site an approved bat biologist shall conduct an initial assessment of the roost's response to construction activities including controlled detonations and recommend buffer expansion if there are signs of disturbance from the roost. The buffer may be adjusted based on site conditions, topography, type of work activity, or other ecological evidence, with the approval of the CPM.

- b. Avoid Removing or Disturbing Bat Roosts. Active bat roosts shall not be disturbed and shall be provided a minimum buffer of 300 feet where pre-existing disturbance is moderate or 500 feet where preexisting disturbance is minimal. Moderate disturbance may include areas subject to regular human activity or traffic noise up to 60 dBA and limited artificial lighting. Minimal disturbance refers to areas with little or no recent human activity, low ambient noise levels (typically below 45 dBA), no artificial lighting, and a generally undisturbed natural setting. All buffer distances and need for monitoring active maternity roosts or hibernacula shall be approved by the CPM.

If suitable roost sites are to be removed, or otherwise impacted by the project, the approved bat biologist shall conduct targeted roost surveys of all identified sites. A minimum of two separate survey visits shall be conducted at each potential roost site, unless fewer surveys are approved by the CPM. Surveys shall be timed to capture variation in bat use and environmental conditions. If initial results are inconclusive or as recommended by the bat biologist, additional survey visits may be required by the CPM.

- c. Roost Site Removal. A qualified bat biologist shall survey potential roost sites prior to their disturbance or removal, per Item 8b. Any structures (natural or artificial) that show evidence of significant bat use within the past year should be retained whenever feasible. If such a structure must be removed or disturbed, the project owner shall create alternative roost sites in coordination with the CPM and CDFW. If removal or disturbance of trees or other identified roost sites cannot be avoided, removal of active roost sites shall be conducted outside the maternity season to avoid mortality of maternity colonies.

10. Prepare a Wildlife Protection and Relocation Plan. The project owner, in coordination with the Designated Biologist, shall prepare a Wildlife Protection and Relocation Plan (WPRP) to provide guidance and protocols when avoiding or handling common and sensitive species that are located within the project area. The WPRP shall include measures for handling rattlesnakes or other snakes found in or near work areas and access roads and provide these guidelines to all Biological Monitors, safety staff, and other personnel. Killing or harming rattlesnakes or other wildlife is not authorized, unless there is an immediate and unavoidable threat to human safety and relocation is not feasible. The WPRP shall include methods to salvage or relocate common and sensitive wildlife during ground disturbance activities including clearing, grubbing, and grading operations when feasible to off-site habitat or out of harm's way. The species shall be salvaged or relocated when conditions will not jeopardize the health and safety of the Designated Biologist or Biological Monitor.
11. Minimize Lighting Impacts. To minimize adverse effects of artificial light on wildlife, exterior lighting fixtures associated with project construction shall be downward facing, fully shielded, and designed and installed to minimize backscatter, reflection, minimize skyward illumination, minimize spillover onto adjacent wildlife habitat. Lights used shall be lower on the light spectrum (lower Kelvins with fewer short-wavelength blue light emissions).
12. Use Non-toxic Soil Binders. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants and shall be approved by the CPM prior to use.
13. Minimize Impacts from Pest Control. Anticoagulants shall not be used for rodent control. Pre-emergent and other herbicides with documented residual toxicity shall not be used. Herbicides shall be applied in conformance with federal, State, and local laws and according to the guidelines for wildlife-safe use of herbicides in **BIO-9** (Integrated Weed Management Plan).
14. Minimize Standing Water. Water applied to dirt roads and construction areas (trenches or spoil piles) for dust abatement shall use the minimal amount needed to meet safety and air quality standards to prevent the formation of puddles, which could attract predators of special-status species to construction sites. During construction, site personnel shall patrol these areas to ensure water does not puddle and attract crows and other wildlife to the site, and

shall take appropriate action to reduce water application rates where necessary.

15. Handling of Road-killed Animals. Report all inadvertent deaths of special-status species to the appropriate project representative, including roadkill. Species name, identifiable physical characteristics of the animal (sex, age class, length, weight), and other pertinent information shall be noted and reported in the Monthly Compliance Reports. During construction, injured or dead animals detected by personnel in the project area shall be reported immediately to the Designated Biologist and/or Biological Monitor, who shall remove the carcass or injured animal promptly. During operations, the Environmental Compliance Monitor for the project owner shall be notified and they shall contact the Designated Biologist and/or Biological Monitor for further instructions. The Designated Biologist shall notify the project owner, the CPM, and CDFW directly of any special-status species injury or mortality. Notifications shall occur immediately and no later than the following morning, or Monday morning in the case of a weekend, or the next business day in the case of a state or federal holiday per **BIO-2**. Additionally, the Designated Biologist shall contact the CPM, CDFW and/or USFWS within 1 working day of receipt of the carcass for guidance on disposal or storage of the carcass. The project owner shall follow instructions that are provided by the appropriate agency contact. The veterinary fees for the treatment of injured wildlife shall be covered by the project owner for project-related injuries or wildlife found injured on the project site.
16. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working conditions to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials or wastes. The Designated Biologist and/or Biological Monitor shall be informed immediately of any hazardous spills. Any on-site servicing of vehicles or construction equipment shall take place only at a designated area approved by the Designated Biologist. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.
17. Remove Trash Weekly. During construction all trash and food-related waste including micro-trash shall be placed in secure, self-closing containers to prevent access by wildlife and removed weekly or more frequently from the site. Workers shall not feed wildlife or bring pets to the project site.

18. No Firearms. Except for law enforcement or security personnel, no workers or visitors to the site shall bring firearms or weapons to the project site.
19. Avoid Use of Toxic Substances. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants;
20. Minimize Disturbance Areas. Limit the size of any vegetation and/or ground disturbance to the minimum area needed for safe completion of project activities, and limit ingress and egress to defined routes;
21. Weed and Monofilament Free Wattles. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations. Monofilament plastic shall not be used for erosion control. In addition, non-native species shall not be used in landscaping plans and erosion control;
22. Conform to APLIC Guidelines. The generation tie-line and all associated components shall be designed, installed, and maintained in accordance with the Avian Power Line Interaction Committee's (APLIC's) *Suggested Practices for Avian Protection on Power Lines* (APLIC 2006) and *Reducing Avian Collisions with Power Lines* (APLIC 2012), or most recent APLIC guidance, to reduce the likelihood of large bird electrocutions and collisions;
23. Aviation Lighting. If required, to the extent feasible, any aviation warning lighting shall employ only strobed, strobe-like or blinking incandescent or LED lights, preferably with all lights illuminating simultaneously. Minimum intensity, maximum "off-phased" dual strobes are preferred, and no steady burning lights (e.g., L-810s) shall be used;
24. Herbicide Use. During construction and operation, the project owner shall conduct pesticide management in accordance with standard BMPs. The BMPs shall include non-point source pollution control measures. The project owner shall use a licensed herbicide applicator and obtain recommendations for herbicide use from a licensed Pest Control Advisor. Herbicide applications must follow USEPA label instructions. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to non-target plants and wildlife. The project owner shall only use pesticides for which a "no effect" determination has been issued by the USEPA's Endangered Species Protection Program for any species likely to occur within the project area, per **BIO-13** If rodent control must be conducted, zinc phosphide or an equivalent product shall be used; and

25. Minimize Stormwater Impacts. Standard best management practices (BMPs) from the project Storm Water Pollution Prevention Plan, if required, shall be implemented during all phases of the project (construction, operation, and decommissioning) where storm water run-off from the site could enter adjacent drainages. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into jurisdictional waters. All disturbed soils within the project site shall be stabilized to reduce erosion potential, both during and following construction.

Verification: All general impact avoidance and minimization measures shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported by Designated Biologist in the Monthly Compliance Reports during construction and reported in Annual Compliance Reports during operation, including but not limited to the requirements cited above and in **BIO-2**.

The project owner shall submit the draft Reservoir Management Plan to the CPM for review and comment, in coordination with CDFW, at least 45 days prior to the start of any construction-related activities associated with the reservoir. The project owner shall provide the final Reservoir Management Plan to the CPM at least 10 days prior to any construction-related activities associated with the reservoir.

The project owner shall submit the draft WPRP to the CPM for review and comment at least 45 days prior to the start of project site mobilization. The project owner shall provide the final WPRP to the CPM at least 10 days prior to project site mobilization.

Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

BIO-8 Vegetation Management Plan. The project owner shall develop a Vegetation Management Plan (VMP). The VMP shall contain the requirements to stabilize temporarily disturbed areas, including proposed stabilization measures, seed mixes, schedules, success criteria, reporting requirements, and any remediation activities. No site mobilization or construction activities may occur prior to approval of the final VMP by the CPM.

The VMP shall be developed by a qualified botanist or restoration ecologist approved by the CPM. The Plan shall identify all areas of permanent and temporary impacts and describe how temporarily disturbed areas in desert areas shall be stabilized to prevent the establishment and spread of invasive species. Invasive weeds are defined as Cal-IPC High or Moderate species except where allowances for annual grasses as described below.

The Plan shall specify success criteria and materials and methods for site preparation, reseeding, maintaining, and monitoring revegetated areas in the following categories. Successful establishment of native desert scrub communities is not required, since temporary impacts are being considered as permanent to offset impacts to listed species, and revegetation efforts shall include an initial seeding event followed by weed management.

A. The goal of revegetation on these sites shall be to stabilize disturbed areas and prevent the establishment of California Invasive Plant Council (Cal-IPC) High or Moderate species that could colonize adjacent habitats. Permanent, and temporary impacts shall be offset through compensatory mitigation (**BIO-14**);

B. At a minimum, all temporary disturbed areas shall be recontoured, scarified, and stabilized with a seed mix consisting of local natives, including grasses and wildflowers preferred by Crotch's bumble bee, and shrubs. At a minimum the VMP shall include but not be limited to the following requirements.

1. **Site Maps.** The Plan shall include the types and acreages of habitats to be restored. These areas shall be identified on maps with sufficient detail for a desktop review and provided as GIS files. The VMP shall provide drawings and or schematics outlining the location of seedings and/or plantings.
2. **Revegetation Methods.** Describe the methods of active revegetation to be used depending on site location and habitat. Active revegetation is defined as any area that receives seed or container plants, irrigation (if proposed), weeding, and monitoring. The methods shall include any proposed site preparation such as topsoil salvage, re-contouring, decompaction, pre-installation weeding, or other proposed methods.
3. **Topsoil Salvage Requirements.** Topsoil and the seed bank it contains shall be conserved on areas where soil is excavated to the degree possible based on the five-year construction timeframe, or alternate timeframe as approved by the CPM. Topsoil salvage shall occur provided the area does not support any Cal-IPC Rank Moderate or High with the exception of Brome and Mediterranean grasses. Salvage shall be accomplished by:
 - a. Woody material such as Joshua trees shall be removed from the soil surface and piled in an area that will be out of the way during construction. The upper 6 to 8 inches of soil, where present, shall be

scraped from the disturbance footprint and piled into a windrow in an area that shall not be disturbed during construction.

- b. Topsoil stockpiles shall be clearly marked for avoidance.
 - c. Windrows shall be immediately protected from wind and rain erosion by covering them or hydro-mulching. Erosion protection shall be renewed as needed.
 - d. Salvaged topsoil shall be respread on areas that shall be revegetated following construction. Salvaged topsoil versus subsoil shall be used for this purpose unless the location is identified as weed infested using the methods outlined in **BIO-9**.
4. **Seed Mix and Application.** Describe the proposed seed mix, quality control requirements, and application methods such as hydroseeding, broadcast seeding, imprinting, use of container plants, cuttings, or other treatments.
- a. The proposed seed mix shall be acquired from local sources unless approved by the CPM, in consultation with CDFW.
 - b. Describe the timing of the seed application and measures to ensure that hydroseeding equipment has been cleaned prior to use on the project site.
 - c. The methods shall describe any proposed use of slurry binders, soil stabilizers, or use of mycorrhizal fungi.
 - d. Describe the proposed timing of the seeding and other revegetation efforts such as container plantings, cuttings, or other methods.
 - e. It is recommended that coarse woody debris from damaged Joshua trees be strategically placed across the revegetation areas to foster the development of micro habitats for plants and wildlife.
5. **Success Criteria.** The VMP shall include success criteria and percent cover for each of the proposed temporarily disturbed areas. Prior to initial ground disturbance of any areas that would be treated, the restoration ecologist shall develop a baseline goal for treatment including the percentage cover and type of weeds and the grass and forb cover. The goal of the VMP is to prevent the establishment of high-priority invasive weeds that are considered controllable (i.e. species that can be effectively suppressed or eliminated through

standard management practices) such as Russian thistle (*Salsola tragus*) and Sahara mustard (*Brassica tournefortii*).

After 5 years upland areas shall be dominated by native annuals, forbs, and low growing perennials with a total cover of 60 percent. Cover of high-priority invasive species rated by Cal-IPC High or Moderate species shall not exceed 5 percent total cover with the exception of brome grasses (*Bromus* spp.) or Mediterranean grass (*Schismus barbatus*), which shall be managed to the extent feasible to control spread.

6. **Implementation Schedule.** The VMP shall include a defined implementation schedule and plan including any revegetation activities including conducting biological or cultural resources clearance surveys, avian monitoring, or other license requirements; ensuring soil conditions are prepared for treatment, and the implementation of any required erosion control devices.
7. **Site Preparation.** All work areas shall be clearly delineated prior to revegetation work; and this shall include any soil preparation measures, including locations of recontouring, de-compacting, imprinting, or other treatments; details for topsoil storage, as applicable; plant material collection and acquisition guidelines, plants from the project site, as well as obtaining replacement plants from outside the project area (sources for plant materials shall be limited to locally occurring native species from the local area if needed); a plan drawing or schematic depicting the temporary disturbance areas described above; time of year that the planting or seeding shall occur and the methodology of the planting; a description of the irrigation, if used; success criteria; a monitoring program to measure the success criteria, commensurate with the Plan's goals and contingency measures for failed revegetation efforts not meeting success criteria.
8. **Plant Acquisition.** Plant acquisition shall be limited to locally collected seed, and cuttings if used, unless approved by the CPM, in consultation with the CDFW.
9. **Final Site Grading and Seeding.** The VMP shall include proposed plans for final site grading and seeding, developed in consideration of site-specific conditions and subject to approval by the CPM. At final grade, the last few inches shall not be compacted to more than 75 percent to facilitate penetration by plant roots, unless otherwise approved by the CPM based on soil type and site conditions. Salvaged topsoil shall be spread over the finish grade, which shall

retain surface roughness, such as small ridges, where appropriate to enhance seedling wind protection and moisture collection from rain and fog.

Hydroseed or drill seeding with soil stabilization seed mixture shall be applied between October 1 and mid-November, unless alternate timing is approved by the CPM. The hydroseed or drill seed mix shall contain a mulch and binder to retard wind erosion by providing a crust over the soil surface. Native plant seeds shall be added to the hydroseed mixture or hand broadcasted onto the site just prior to hydroseeding. Care shall be taken to avoid premature germination of native species caused by prolonged immersion in the hydroseeding equipment.

On slopes, the project owner shall augment the erosion control seed mixture with seed of species native to the region, based on seed availability and habitat conditions. Seed mixtures appropriate for desert habitats shall be developed using native species sourced from the region and shall be approved by the CPM. The VMP shall include details of seed sources, application methods, and any proposed deviations from these guidelines with supporting rationale.

10. **Maintenance and Monitoring.** The revegetation areas shall be monitored and maintained for a minimum of 5 years by a qualified botanist or restoration ecologist. At the end of the five-year monitoring period the qualified botanist or restoration ecologist in consultation with the Designated Biologist shall prepare a final monitoring report detailing the success of the revegetation efforts and shall provide recommendations, if needed. This final monitoring report shall be submitted to the CPM for review and approval. After the initial 5-year monitoring period, the CPM shall determine if additional monitoring or remedial actions are required.

Invasive weed management shall be started within 3 months of planting or seeding, or earlier if weeds have begun to flower, unless alternate timeframe is approved by the CPM. Weeding shall proceed as frequently as necessary to prevent weeds from spreading off the project site into the adjacent area and to prevent seed set. An effort shall be made to cut weeds before they develop seeds to minimize the spread of invasive weeds. Any new Cal-IPC High or Moderate species weed species not currently present in the project area prior to construction shall be eradicated (see **BIO-9** and **BIO-10**).

11. **Reporting.** Quarterly and annual revegetation status reports shall include a map of all areas planted or managed, percent weed cover, status of revegetation efforts including percent native cover and survivorship, and any remedial actions taken.

Verification: The project owner shall submit the draft VMP to the CPM for approval at least 45 days prior to the start of any site mobilization. The project owner shall provide the final VMP to the CPM and CDFW at least 7 days prior to start of any site mobilization. Any changes to the approved VMP must be approved by the CPM. Quarterly, annual, and final revegetation status reports shall be submitted to the CPM for review and approval no more than 30 days after each reporting period.

BIO-9 Integrated Weed Management Plan. The project owner shall develop an Integrated Weed Management Plan (IWMP). The IWMP shall be prepared in consultation with the Designated Biologist and shall include accurate and up-to-date maps depicting the location of weed occurrences across the project site and generation-tie line alignment. The IWMP shall be submitted to the CPM for review and approval. The IWMP shall contain all required measures to identify, control, and manage existing and potential weed infestations on the project site. No site mobilization, ground disturbance, or construction activities may occur prior to approval of the final IWMP by the CPM. The IWMP shall be implemented prior to any site mobilization, and during the construction, operation, and decommissioning phases of the project.

2. **Weed Definition.** The IWMP shall describe the methods of preventing or controlling the introduction or spread of weeds or new weed infestations. For the purposes of the IWMP, “weeds” shall include all plants designated as noxious weeds or pest plants by the California Department of Food and Agriculture (CDFA), including those listed in Title 3, California Code of Regulations Section 4500 or assigned a CDFA pest rating of A, B, or Q, or the agencies most recent ranking system. Weeds shall also include any other non-native plant species ranked in the *California Invasive Plant Inventory* by the California Invasive Plant Council (Cal-IPC) or its most recent ranking system.
3. **Weed Risk Assessment.** The IWMP shall provide an assessment of the project’s potential to spread invasive non-native weeds rated Cal IPC High or Moderate species into new areas, or to introduce new non-native invasive weeds into the project site. This IWMP must list known and potential non-native and invasive weeds occurring on the project site and in the project region and identify threat rankings, including Cal-IPC and CDFA, and potential consequences of project-related occurrence or spread for each species.

This assessment shall include, but is not limited to, weeds that (1) are currently ranked as having a high or moderate for ecological impact in the California Invasive Plant Inventory maintained by the Cal-IPC (Cal-IPC 2025), (2) aid and promote the spread of wildfires, and (3) have the potential to displace native vegetation communities.

4. **Success Criteria.** The IWMP shall identify goals for control of each species (e.g., eradication, suppression, or containment) likely to be found within the project area. The goals shall include the following success criteria:
 - With the exception of brome and Mediterranean grasses which are ubiquitous in the project area, all plant species with rates of dispersal and establishment listed as “High” or “Moderate” on the California Invasive Plant Inventory shall have documented absence, or have been removed from the site for at least three years, for the CPM to deem the site control successful.
 - The site shall not contain more than 5% exotic plant species rated by Cal-IPC as High or Moderate for the CPM to deem the site control successful.

The IWMP shall include the following measures to guide weed inventory, prevention, control, and monitoring activities:

5. The project owner shall inventory the entire project site, covering all areas subject to ground-disturbing activity, including, but not limited to, construction work sites, staging areas, and any potential new or improved access roads. Weed occurrences shall be mapped and described according to species, density, and area covered. The map shall be updated at least once per year during the construction phase.
2. Weed infestations identified in the pre-construction weed inventory shall be evaluated to identify potential for project-related spread. The IWMP shall identify any infestations to be controlled or eradicated prior to start of project construction, or other site-specific weed management requirements (e.g., avoidance of soil transport and site-specific vehicle washing where threat or spread potential is high).
3. The CPM shall be notified via email within 30 days if any weed species detected on the project site has not been previously recorded in Kern or Los Angeles County, based on available records from the CDFA, the Cal-IPC, the Calflora Database, or other relevant regional floristic data sources.

4. Control and follow-up monitoring of pre-construction weed treatment sites shall follow methods identified in appropriate sections of the IWMP. The monitoring section shall also describe methods for post-eradication monitoring to evaluate success of control efforts and any need for follow-up control.
5. The IWMP shall specify methods to minimize potential transport of weed seeds onto the project site, or from one section of the project site to another. The project site may be divided into "weed zones," based on known presence or likelihood of invasive species in specific areas. The IWMP shall specify inspection procedures for construction materials and equipment entering the project area. Vehicles and equipment shall be inspected and cleaned at entry points to specified portions of the project site, and prior to leaving work sites where weed occurrences must be contained locally.
6. The IWMP shall include prevention measures based on Prevention Best Management Practices for Transportation and Utility Corridors (<https://www.cal-ipc.org/resources/library/publications/tuc/>) and Cal-IPC's Preventing the Spread of Invasive Plants: Best Management Practices for Land Managers (<https://www.cal-ipc.org/resources/library/publications/landmanagers/>) or most recent guidance.
7. Construction equipment shall be cleaned of dirt and mud that could contain weed seeds, roots, or rhizomes. Equipment shall be inspected to ensure it is free of any dirt or mud that could contain weed seeds, and the tracks, outriggers, tires, and undercarriages shall be thoroughly washed, as needed. Special attention shall be given to axles, frame, cross members, motor mounts, underneath steps, running boards, and front bumper/brush guard assemblies. Other construction vehicles (e.g., pick-up trucks) that frequently enter and exit the site shall be inspected and washed on an as-needed basis. Tools (e.g. chainsaws, hand clippers, pruners, etc.) shall also be cleaned of dirt and mud before entering project work areas.
8. All vehicles shall be washed off-site when possible. If off-site washing is infeasible, on-site cleaning stations shall be set up at designated locations to clean equipment before it enters the work area. Wash stations shall be located away from native habitat or special-status species occurrences. Wastewater from cleaning stations shall not be allowed to run off the cleaning station site. A daily log shall be maintained for all vehicle and equipment washing

activities stating the location, date and time, types of equipment, methods used, and personnel present.

9. Erosion control materials (e.g., straw wattles, hay bales) shall be certified free of weed seed before they are brought onto the site. The IWMP shall prohibit on-site storage or disposal of mulch or green waste that may contain weed material. Mulch or green waste shall be removed from the site in a covered vehicle to prevent seed dispersal and transported to a licensed landfill or composting facility.
10. The IWMP shall specify guidelines for any soil, sand, gravel, mulch, or fill material that will be imported into the project area, transported from site to site within the project area, or transported from the project area to an off-site location, to prevent the introduction or spread of weeds to or from the project area.
11. The IWMP shall specify methods to survey for weeds during construction and operation; and shall identify the botanists responsible for weed monitoring and identification. The botanists shall be approved pursuant to **BIO-1** and/or **BIO-3**. The IWMP shall include a monitoring schedule to ensure timely detection and immediate control of weed infestations to prevent further spread. Surveying and monitoring for weed infestations shall occur at least two times per year, to coincide with the early detection period for early season and late season weeds (i.e., species germinating in winter and flowering in late winter or spring, and species germinating later in the season and flowering in summer or fall).
12. The IWMP shall include methods for marking invasive weeds on the project site and for recording and communicating these locations to weed control personnel. The map of weed locations (referenced above under Item 1) shall be updated at least annually and provided to the CPM in both Arc-GIS -compatible digital format (e.g. shapefiles) and PDF map format.
13. The IWMP shall specify manual and chemical weed control methods to be employed. The IWMP shall include only weed control measures with a demonstrated record of effectiveness for target weeds, based on the best available information, including relevant agency guidance, peer-reviewed studies, and documented control successes for the target species. The plan shall describe methods for promptly scheduling and implementing control activity when any weed infestation is present, to ensure timely and effective weed control. Weed infestations shall be

controlled or eradicated within 10 days upon detection, and prior to seed production, to prevent further spread. If detected after seed production, measures shall be taken to prevent further spread, including containment, seed removal, and increased monitoring.

14. All proposed weed control methods must minimize the extent of any disturbance to native vegetation, limit ingress and egress to defined routes, and avoid damage from herbicide use or other control methods to any environmentally sensitive areas identified within or adjacent to the project site. Herbicide use must comply with the following restrictions unless approved by the CPM in consultation with CDFW.
 - a. Herbicide applicators must follow the best management practices described by the Guidance to Protect Habitat from Pesticide Contamination published by the Xerces Society for Invertebrate Conservation or most recent guidance;
 - b. Herbicides marked with the U.S. Environmental Protection Agency's bee hazard icon shall be avoided;
 - c. Herbicides shall not be sprayed onto any native flowering plant, with special care to avoid special status plants and foraging species used by bumble bees.
 - d. Only herbicides with a short residual toxicity to bees shall be used. Pesticide toxicity shall be verified using UC Agriculture and Natural Resource's Bee Precaution Database, or equivalent current resource.
 - e. Targeted application methods shall be used instead of broadcast spraying whenever feasible.
 - f. All herbicide application must be conducted by a Licensed and Certified Pesticide Applicator, licensed by the California Department of Pesticide Regulation (CDPR), and shall be applied as directed by the manufacturer and all applicable federal, state, and local regulations.
15. Weed infestations shall be treated at least annually until eradication, suppression, or containment goals are met. For an infestation to be considered eradicated, no new seedlings or resprouts shall be observed for three (3) consecutive, normal rainfall years. Upon approval by the CPM, weed control efforts may be discontinued for that site.

16. Manual control shall include well-timed removal of weeds or their seed heads with hand tools. Removed seed heads and plants shall be disposed of in accordance with guidelines from the Kern County Agricultural Commissioner, if such guidelines are available. If no guidelines are available, all materials shall be sealed in bags and transported to a licensed green-waste or composting facility to prevent seed dispersal.
17. The IWMP shall include specific plans for any herbicide use based on known locations. The plan shall indicate where herbicides will be used, which herbicides will be used and specify techniques to be used to avoid drift or residual toxicity to native vegetation or special-status plants and wildlife. An updated herbicide work plan shall be developed based on the results of ongoing weed surveys and submitted annually with the annual monitoring report and updated weed location maps.
18. Herbicides shall not be applied during or within 72 hours of predicted rain. Only water-safe herbicides shall be used in drainage areas or within channels (engineered or not) where they could run off into downstream areas. Herbicides shall not be applied when wind velocities exceed six (6) mph. All herbicide applications shall follow U.S. Environmental Protection Agency label instructions and shall be in accordance with federal, state, and local laws and regulations. Any herbicide proposed for usage must be approved in advance by the CPM and use shall not conflict with **BIO-13**.
19. The IWMP shall specify a reporting schedule, with no less than one report submitted annually, and shall define the contents of each report and reports shall be submitted by the project owner to document weed control activities, including treatment methods, locations, dates, monitoring results, and effectiveness of control measures.

Verification: The project owner shall submit the draft IWMP to the CPM for review and approval at least 60 days prior to start of any pre-construction site mobilization activities. The project owner shall provide the final IWMP to the CPM and CDFW at least 7 days prior to the start of any site mobilization. Any changes to the approved IWMP must be approved by the CPM. The annual report shall be submitted within 30 days of completion of the late season surveys.

BIO-10 Invasive Species Management Plan. The project owner shall develop and implement an Invasive Species Management Plan (ISMP). The ISMP shall be prepared in consultation with the Designated Biologist and shall

include an education program (see **BIO-5**) to describe the risk that invasive species pose to native wildlife and the control methods required during pre-construction site mobilization, and during the construction, operation, and decommissioning phases of the project. The ISMP shall be submitted to the CPM for review and approval. The ISMP shall include the following:

1. **Invasive Species Education Program.** The program shall consist of a presentation by the Designated Biologist(s) or Biological Monitor(s) that includes a discussion of the invasive species currently present within the project site as well as those that may pose a threat to or have the potential to invade the project site. The discussion shall include a physical description of each species and information regarding their habitat preferences, local and statewide distribution, modes of dispersal, and ecological impacts. The program shall also include a discussion of best management practices (BMPs) to be implemented at the project site to avoid the introduction and spread of invasive species into and out of the project site. The program shall provide interpretation for non-English speaking workers. The presentation may be recorded for later electronic viewing by new workers who begin work after the initial presentations. The program shall be repeated annually for the life of the project. Copies of program materials shall be maintained at the project site for workers to reference as needed. The program shall be included as part of the WEAP training and implemented, as required under **BIO-5**.
2. **Invasive Species.** The ISMP shall describe the best management practices (BMPs) that prevent the introduction, transfer, and spread of invasive species, including plants, animals, and microbes (e.g., algae, fungi, parasites, bacteria, etc.), from one project site and/or waterbody to another. If decontamination is not done on site, transport contaminated equipment in sealed plastic bags and keep separate from clean gear. For locations known to be infested with invasive species, use dedicated equipment that is only used in infested waters and store this equipment separately. Prevention BMPs and guidelines for invasive plants are available California Invasive Plant Council's website at: <https://www.cal-ipc.org/solutions/prevention/> and for invasive mussels and aquatic species are available at the Stop Aquatic Hitchhikers website: <https://stopaquatic hitchhikers.org/> or most recent guidance. These measures shall be adapted to conform when working in desert areas without connectivity to intermittent or perennial water sources.

3. **Inspection of Project Equipment.** Inspect all vehicles, tools, boots, and other project-related equipment and remove all visible soil or mud, plant materials, and animal remnants. All water must be drained from equipment prior to entering and exiting the project site and/or between each use in different waterbodies.
4. **Decontamination of Project Equipment.** All tools, waders and boots, and other equipment that will enter the project site and/or between each use in different waterbodies, shall be decontaminated to avoid the introduction and transfer of organisms between waterbodies. Decontamination methods and protocols shall be outlined in the ISMP and may include techniques to clean gear and equipment such as thorough drying, hot water treatment, freezing, or other scientifically supported practices. All equipment must be thoroughly cleaned prior to decontamination, with particular attention paid to areas where organisms may be trapped (e.g., seams, laces, net corners, etc.). Repeat decontamination shall be required if the equipment/clothing is removed from the site, used within a different waterbody, and returned to the project site or different waterbody. Methods shall follow current best management practices as outlined in the CDFW Aquatic Invasive Species Decontamination Protocol or most current guidance. Decontamination measures can be adapted based on site-specific conditions when working in desert areas without connectivity to intermittent or perennial water sources. Decontamination measures shall ensure that terrestrial arthropods such as Argentine ants do not invade adjacent desert lands.
5. **Decontamination of Vehicles and Equipment.** Vehicles and other project-related equipment too large to immerse in a hot water bath shall be decontaminated by using effective methods designed to eliminate potential biological contaminants. This may include using pressurized hot water, flushing of internal systems, and thorough draining and drying. Methods shall follow current best management practices as outlined in the CDFW Aquatic Invasive Species Decontamination Protocol or most current guidance. Decontamination procedures can be adapted to conform when working in desert areas without connectivity to intermittent or perennial water sources. Decontamination measures shall ensure that terrestrial arthropods such as Argentine ants do not invade adjacent desert lands.
6. **Decontamination Sites.** The project owner shall identify a decontamination site approved by the CPM. The project owner shall

ensure the decontamination of vehicles and other project-related gear and equipment is located in a designated location where runoff can be contained and not allowed to pass into CDFW-jurisdictional areas and other sensitive habitat. Preferably this will consist of an off-site location such as a construction yard or other approved vehicle washing location. Rinse water shall be disposed of at least 100 feet from any surface water.

7. **Notification of Invasive Species.** If an invasive species not previously known to occur within the project site is discovered during project activities the project owner or Designated Biologist shall notify the CPM and CDFW within 24-hours, or by Monday if during the weekend, or by the next business day if during a state or federal holiday. The report shall include photos and a completed Suspect Invasive Species Report (available online at: <https://wildlife.ca.gov/Conservation/Invasives/Report>). In addition, the project owner or Designated Biologist shall provide an email to the Invasive Species Program at: invasives@wildlife.ca.gov or current CDFW email for reporting. Notification may also be provided by calling (866) 440-9530 or current CDFW phone number for reporting. Upon receiving guidance from the CPM, in coordination with CDFW, the project owner will take further action, as appropriate to the species.

Verification: The project owner shall submit the draft ISMP to the CPM for review and approval at least 45 days prior to the start of any site mobilization activities. The project owner shall provide the final ISMP to the CPM at least 7 days prior to start of any site mobilization. No site mobilization, ground disturbance, or construction activities may occur prior to approval of the final ISMP by the CPM.

BIO-11 Special-Status Plant Avoidance Measures. The Designated Biologist and/or Biological Monitor(s) shall conduct floristic pre-construction surveys for special-status plants. Surveys shall be conducted with the appropriate protocols approved by the CPM during the appropriate season in all suitable habitat within the project disturbance areas and access roads and within 100 feet of disturbance areas, where accessible. Surveys shall be conducted by qualified botanists or biologists approved by the CPM, pursuant to **BIO-1** and/or **BIO-3**.

The field surveys and reporting shall conform to current CDFW botanical field survey protocol (CDFW 2018) or more recent updates. With respect to areas potentially directly disturbed during the construction of the generation tie-line, protocol surveys conforming to the current CDFW botanical field

survey protocol (CDFW 2018) are required for areas that have not previously been surveyed by the project owner to date. During each year of construction, and prior to site mobilization and ground disturbance, the project owner shall identify proposed survey areas to the CPM for review and approval prior to initiating annual botanical surveys. The survey plan shall identify proposed survey areas and the rationale for any areas not proposed for surveys. The survey plan shall include maps, at an approved scale, clearly defining each proposed survey area.

Any special-status plant species (including state and federally listed threatened or endangered species, candidates for listing, and all California Rare Plant Ranks (CRPR) 1A, 1B, 2, 3, and 4 ranked species) detected shall be documented in the pre-construction survey reports. The results shall be submitted to CPM, CDFW, and USFWS (should federally listed plants be discovered) for review. The reports shall describe any conditions that may have prevented target species from being located or identified, even if they are present as dormant seeds or below-ground root stock (e.g., poor rainfall, disturbance, or wildfire). In some cases, follow-up surveys may be necessary to adequately evaluate impacts. Pre-construction field survey reports shall include maps, at an approved scale, showing locations of survey areas, reference populations, and special-status plants.

The results of these surveys will inform the implementation of appropriate avoidance and minimization measures, as outlined below:

1. **Avoidance.** Where feasible, any special status plant shall be protected by establishment of a minimum 50-foot non-disturbance buffer. The buffer area shall be clearly staked, flagged, and signed for avoidance prior to the beginning of site mobilization and maintained throughout the construction phase. The buffer zone shall be of sufficient size to prevent direct or indirect disturbance to the plants from site mobilization and construction activities, erosion, inundation, or dust.

The final buffer distance shall be determined by a qualified biologist or botanist, approved under **BIO-1** and/or **BIO-3**, based upon the proposed use of the immediately adjacent areas and the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, water availability, edaphic physical and chemical characteristics).

For tree or shrub species, the buffer shall be no less than twice the drip line (i.e., two times the distance from the trunk to the canopy edge) to protect and preserve the root systems. For herbaceous

species, the buffer shall be a minimum of 50 feet from the outer edge of the occupied habitat or the individual.

If a smaller buffer is necessary due to other site-specific constraints, the project owner, in coordination with the Designated Biologist or qualified botanist shall develop and implement site-specific protection measures, such as monitoring, to avoid the impacts to the species, if possible. The measure shall be subject to approval from the CPM, in consultation with CDFW. Such measures may include placing decking or pads above dormant species to prevent their loss and limit soil compaction.

2. **Compensatory Mitigation.** If avoidance is not feasible, the project owner shall mitigate impacts to any state or federally listed plants that are subject to disturbance from project activities. Should a State listed plant be subject to disturbance the project owner would be required to implement standard categories of mitigation applicable for take coverage through CESA which includes seed salvage, propagation, and the preservation of lands occupied by the species. The measures shall be subject to approval from the CPM, in consultation with CDFW. In addition, the project owner shall provide compensatory mitigation for CRPR 1 or 2 ranked species if project activities result in the loss of more than 10 percent of a defined occurrence due to direct or indirect impacts to soils, vegetation, or water transport that could affect the species' viability. Western Joshua tree is addressed separately under **BIO-12 and BIO-14**.

An occurrence, or local population, shall be defined as the number of individuals occurring on the project site or all plants within a 0.25-mile buffer.

- For perennial species, percent avoidance shall be based on population size or number of individuals avoided.
- For annuals, avoidance shall be based on occupied habitat, which includes habitat containing the species' micro-habitat preferences (e.g., such as "soil types and moist depressions").

Occupied habitat shall be calculated on both the project site and compensation lands as including each special status plant occurrence and a surrounding 100-foot buffer area to account for seed bank.

The project owner shall provide compensation lands at the following minimum ratios:

- 3:1 for any state or federally listed plants
 - 2:1 ratio for CRPR 1 or 2 ranked species
3. **Compensatory Mitigation by Acquisition:** The requirements for the acquisition, initial protection and habitat improvement, and long-term maintenance and management of special-status plant compensation lands shall include the following:

Selection Criteria for Acquisition Lands. The compensation lands selected for acquisition may include any of the following three categories:

- a. **Occupied Habitat, No Habitat Threats.** The compensation lands selected for acquisition shall be occupied by the target plant population and shall be characterized by site integrity and habitat quality that are required to support the target species and shall be of equal or better habitat quality than that of the affected occurrence. The occurrence of the target special-status plant on the proposed acquisition lands should be viable, stable, or increasing (in size and reproduction).
 - b. **Occupied Habitat, Habitat Threats.** Occupied compensation lands characterized by habitat threats may also be acquired if the population could be reasonably expected to recover with habitat restoration efforts (e.g., off-highway vehicles (OHV) or grazing exclusion, or removal of invasive non-native plants) and is accompanied by a Habitat Enhancement/Restoration Plan.
 - c. **Unoccupied but Adjacent.** The project owner may also acquire habitat for which occupancy by the target species has not been documented, if the proposed acquisition lands are adjacent to occupied habitat. The project owner shall provide evidence that acquisitions of such unoccupied lands would improve the defensibility and long-term sustainability of the occupied habitat by providing a protective buffer around the occurrence and by enhancing connectivity with undisturbed habitat. This acquisition may include habitat restoration efforts where appropriate, particularly when these restoration efforts will benefit adjacent habitat that is occupied by the target species.
4. **Review and Approval of Compensation Lands Prior to Acquisition.** The project owner shall submit a formal acquisition

proposal to the CPM describing the parcel(s) intended for purchase. This acquisition proposal shall discuss the suitability of the proposed parcel(s) as compensation lands for special-status plants in relation to the criteria listed above and must be approved by the CPM, in coordination with CDFW and/or USFWS.

5. **Compensation Lands Management Plan.** The project owner shall prepare a management plan for the compensation lands in consultation with the entity that will be managing the lands. The objective of the management plan shall be to support and enhance the long-term viability of the target special-status plant occurrences. The Compensation Lands Management Plan shall be submitted for review and approval to the CPM, in coordination with the CDFW and/or USFWS.
6. **Integrating Special-Status Plant Mitigation with Other Mitigation lands.** If all or any portion of the acquired compensation lands for Crotch's bumble bee, burrowing owl, waters of the state, or other required compensation lands meets the criteria above for special-status plant compensation lands, the portion of the other species or habitat compensation lands that meets any of the criteria above may be used to fulfill that portion of the obligation for special-status plant mitigation.
7. **Compensation Lands Acquisition Requirements.** The project owner shall comply with the following requirements relating to acquisition of the compensation lands after the CPM has approved the proposed compensation lands:
 - a. **Preliminary Report.** The project owner, or an approved third party, shall provide a recent preliminary title report, initial hazardous materials survey report, biological analysis, and other necessary or requested documents for the proposed compensation land to the CPM and CDFW. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM. For conveyances to the State, approval may also be required from the California Department of General Services and the Wildlife Conservation Board.
 - b. **Title/Conveyance.** The project owner shall acquire and transfer fee title to the compensation lands, a conservation easement over the lands, or both fee title and conservation easement, as required by the CPM. Any transfer of a conservation easement or

fee title shall be to CDFW if accepted by CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to Government Code, section 65965), or to BLM or other public agency approved by the CPM. If an approved non-profit organization holds fee title to the compensation lands, a conservation easement shall be recorded in favor of CDFW or another entity approved by the CPM. If an entity other than CDFW holds a conservation easement over the compensation lands, the CPM may require that CDFW or another entity approved by the CPM, in consultation with CDFW, be named a third-party beneficiary of the conservation easement. The project owner shall obtain approval of the CPM of the terms of any transfer of fee title or conservation easement to the compensation lands.

- c. **Initial Protection and Habitat Improvement.** The project owner shall fund activities that the CPM requires for the initial protection and habitat improvement of the compensation lands. These activities will vary depending on the condition and location of the land acquired, but may include trash removal, construction and repair of fences, invasive plant removal, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The habitat improvement funds may be held and expended by a qualified non-profit organization, CDFW or another public agency, provided that the entity is qualified to manage compensation lands (pursuant to Government Code, section 65965) and is authorized to participate in implementing the required activities on the compensation lands, upon approval of the CPM, in consultation with CDFW.

If CDFW accepts fee title to the compensation lands, the project owner shall provide the habitat improvement fund directly to CDFW or its designee.

- d. **Property Analysis Record.** Upon identification of the compensation lands, the project owner shall conduct a Property Analysis Record (PAR) or PAR-like analysis to establish the appropriate amount of the long-term maintenance and management fund to pay the in-perpetuity management of the compensation lands. The PAR or PAR-like analysis must be approved by the CPM

before it can be used to establish funding levels or management activities for the compensation lands.

- e. **Long-term Maintenance and Management Funding.** The project owner shall deposit a capital long-term maintenance and management fee in a dedicated interest bearing account held by governmental entity, special district, or nonprofit organization or other CPM approved entity, in the amount determined through the Property Analysis Record (PAR) or PAR-like analysis conducted for the compensation lands.

The CPM, in consultation with CDFW, may designate another non-profit organization to hold the non-refundable, long-term maintenance and management fee if the organization is qualified to manage the compensation lands in perpetuity.

If CDFW takes fee title to the compensation lands, CDFW shall determine whether it will hold the long-term management fee in the special deposit fund or designate another entity to manage the long-term maintenance and management fee under CDFW oversight.

In addition to the costs listed above under Items a-d, the project owner shall be responsible for all other costs related to acquisition of compensation lands and conservation easements, including but not limited to: title and document review costs incurred from other state agency reviews, overhead related to providing compensation lands to CDFW or an approved third party, escrow fees or costs, environmental contaminants clearance, and other site cleanup measures.

- f. **Mitigation Security.** The project owner shall provide financial assurances to the CPM to guarantee that an adequate level of funding is available to implement any of the mitigation measures required by this condition that are not completed prior to the start of site mobilization and ground-disturbing activities.

Financial assurances shall be provided to the CPM, and copy to the CDFW, in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security") approved by the CPM. The actual costs to comply with this condition will vary depending on the actual costs of acquiring compensation habitat, the costs of initially improving the habitat,

and the actual costs of long-term management as determined by a PAR report.

Prior to submitting the evidence of Security, the project owner shall obtain the CPM's approval of the form of the Security. The CPM may draw on the Security or approve of the security beneficiary to draw on the security, if the CPM determines the project owner has failed to comply with the requirements specified in this condition. Funds from the Security may solely be used for implementation of the requirements of this condition.

Use of the Security by the CPM or other approved entity does not relieve the project owner of its obligations under this condition if the Security is insufficient to fully cover required measures. Any unused portion of Security shall be returned to the project owner, in whole or in part, upon successful completion of the associated requirements in this condition.

8. **Monitoring.** Annual monitoring and documentation of salvaged plants shall include, but not be limited to, details of plants salvaged, stored, and transplanted (salvage and transplanting locations, species, number, size, condition, etc.); adaptive management efforts implemented (date, location, type of treatment, results, etc.); and evaluation of success of transplantation. Transplanted species may not be placed in areas subject to future land disturbance and must be protected by a conservation easement that prohibits disturbance and ensures conservation of the site in perpetuity. Conservation lands would be acquired consistent with the specifications identified above under Item b. Title /Conveyance. Annual monitoring shall occur for a minimum of three years post-relocation to ensure the plants become established and are not at risk from weeds or other impacts, unless approved by the CPM. The results of annual monitoring shall be reported in an Annual Monitoring Report specific to salvaged or propagated plants for a minimum of three years. Additional monitoring may be necessary if determined upon review of the annual reports by the CPM that the success criteria are not met. Success criteria shall include maintaining habitat occupied by the impacted species at the identified ratios and number of plants for any occupied habitat affected by the project.
9. **Propagation and Relocation Strategy.** If salvage and relocation is not believed to be feasible for special-status plants, then the project owner shall consult with California Botanic Garden, or another qualified entity, to develop an appropriate propagation and relocation

strategy, based on the life history of the species affected. The Special-Status Plant Propagation and Relocation Plan shall include at minimum: (a) collection and salvage measures for plant materials (e.g., cuttings), seed, or seed banks, to maximize success likelihood; (b) details regarding storage of plant, plant materials, or seed banks; (c) location of the proposed propagation facility, and proposed methods; (d) time of year that the salvage and other practices will occur; (e) success criteria; and (f) a detailed monitoring program, commensurate with the plan's goals. The draft Special-Status Plant Propagation and Relocation Plan shall be submitted to the CPM for review and approval and to the CDFW for review and comment. The final plan approved by the CPM shall be submitted prior to any salvage or relocation.

Verification: The project owner shall submit the proposed annual survey plan 45 days prior to commencing the surveys to the CPM for review and approval. The project owner shall submit the results of each annual survey to the CPM for review and approval no more than 45 days after the completion of the surveys.

Should mitigation be required the project owner shall submit the Habitat Enhancement/Restoration Plan, Formal Acquisition Proposal, Compensation Lands Management Plan, Recent Preliminary Title Report, and Property Analysis Record (PAR) and Security to the CPM for review and approval and the CDFW/USFWS if applicable for review and comment no later than 45 days prior to construction. If plant propagation is proposed as mitigation the project owner shall submit the Special-Status Plant Propagation and Relocation Plan to the CPM for review and approval and the CDFW/USFWS if applicable for review and comment no later than 45 days prior to construction.

The project owner shall submit the Annual Monitoring Reports to the CPM for review and approval no more than 30 days after each reporting period.

BIO-12 Western Joshua Tree Avoidance, Minimization, and Mitigation Measures. To avoid, minimize, and mitigate impacts to western Joshua tree (WJT), the project owner shall ensure the following are implemented:

1. **Western Joshua Tree Census, Relocation Plan and Conservation Fund Fees.** The project owner shall submit an updated Western Joshua Tree Census and final Western Joshua Tree Relocation Plan to the CPM for review and approval, and to CDFW for review and comment, prior to any site mobilization or ground-disturbing activities within 50 feet of any WJT. The updated census shall confirm the location of previously mapped WJTs, survey the portions of the project area that were not previously surveyed by the

project owner due to site access constraints, and incorporate any new WJT stems or trunks that have arisen since completion of the prior surveys. The updated census shall include all WJT within the project area and a 50-foot buffer around the project area, including but not limited to, the Willow Rock site, generation tie-line, new access roads, laydown areas, staging areas, and other facilities. Additionally, the project owner shall update the Western Joshua Tree Relocation Plan if necessary to account for any newly identified or previously unmapped WJTs. The Western Joshua Tree Relocation Plan shall include, at a minimum, the following:

- a. Name and contact information for the project owner;
- b. APNs for locations where trees are proposed for removal (with maps at an approved scale);
- c. Name and qualifications of the desert native plant specialist overseeing relocation efforts;
- d. Details of the locations where trees will be transplanted, including landowner name(s), address(es), APN(s), maps, approximate distance from original tree location, approximate difference in elevation from original tree location; site description including habitat and previous impacts;
- e. A calculation of the number of trees to be relocated based on the CDFW Relocation Guidelines and Protocols (<https://wildlife.ca.gov/Conservation/Environmental-Review/WJT/Permitting/WJTCA-ITP#apply>) or most recent guidelines. The total number of relocated trees shall be a percentage of the number of trees lethally taken for the project and must at least meet or exceed the CDFW calculation for each size class depending on the method used (i.e., tree spade removal, bare root, or a combination of both).
- f. A Tree Relocation Spreadsheet that includes a unique identifier (tree ID), size class, original location and recipient site locations (lat/long), relocation area name, anticipated removal and transplanting dates, the relocation method used, storage information (if applicable), overall tree health assessment, photos, and any other pertinent information for each tree proposed for relocation;
- g. A signed statement from the landowner from each relocation site granting the project owner permission to relocate trees to their land,

provide access to implement the maintenance and monitoring measures, and allow staff to access the property to conduct compliance inspections (if trees will be relocated outside of the project area).

- h. In addition to submitting an updated Western Joshua Tree Census prior to site mobilization as specified in **BIO-12**, Item 1, the project owner shall conduct an updated Western Joshua Tree census prior to site mobilization for each phase of construction in any areas that were surveyed more than 12 months prior but remained undisturbed, as confirmed in consultation with CDFW. This requirement applies to all project components that will be disturbed, including, but not limited to, the Willow Rock site, the generation tie line, new access roads, laydown areas, staging areas, and other facilities. The project owner shall update the Western Joshua Tree Relocation Plan to account for any newly identified trees and provide this prior to site mobilization for each phase of the project. The survey methods and schedule shall be included in the Western Joshua Tree Relocation Plan.

Upon review and approval by the CPM of the Final Western Joshua Tree Relocation Plan, the CPM will provide an invoice for the required mitigation fee. Based on preliminary data submitted by the applicant, this is estimated to be \$319,580.00 for Option 1 – Without Berm and \$457,394.75 for the Option 2 - With Berm (see **Table 7.A-3**); however, the total fee shall be dependent on the final number of trees and class sizes that are authorized for take, and based on the amount of fees in effect pursuant to California Fish and Game Code section 1927.8(b) at the time of the review and approval of the Final Western Joshua Tree Relocation Plan. The project owner shall submit the mitigation fee payment to the CDFW Region 4 office by check or money order with a copy of the invoice attached. No impacts to WJT shall be authorized until confirmation by CDFW that the mitigation fee has been received from the project owner. The check shall be submitted to the following address, or most current Region 4 office location:

California Department of Fish and Wildlife Region 4
1234 E. Shaw Avenue
Fresno, CA 93710
reg4assistant@wildlife.ca.gov

(559) 243 – 4005 ext. 151

2. **Western Joshua Tree Relocation Post-Relocation Reporting and Annual Reporting.** The project owner shall have a Designated Biologist approved by the CPM oversee all Western Joshua Tree Relocation activities. At the completion of relocation, the project owner shall submit a post-relocation report, consistent with current CDFW Western Joshua Tree Relocation Guidelines and Protocols (April 2025), no more than 30 days after relocation is completed and shall conduct annual monitoring of each relocated tree for a period of 3 years, or as required by current CDFW guidelines. An annual status report shall be submitted to the CPM for review and approval, and to CDFW for review and comment. Each report shall include a health assessment of each relocated tree (with unique identifiers), a description of current habitat conditions (including any new disturbances), and representative photos and maps. The content of the reports shall be detailed in the Western Joshua Tree Relocation Plan.
3. **Notification of New Stem or Trunk:** If a new WJT stem or trunk is identified prior to or during construction or operation, once the project site has been fully cleared of the WJT identified in the census, if a new western Joshua tree stem or trunk arises from the ground, regardless of whether it germinates from seed, a trunk re-sprout occurs, or otherwise, project owner shall prepare a Notification of New Stem or Trunk and submit it to the CPM before conducting or resuming project activities that will impact any WJT individual that was not included in the census and included in the invoice, including any new WJT stem or trunk that arises from the ground (e.g., new sprouts or resprouts) [that are size class A or B]. The Notification of New Stem or Trunk shall include the following about any new WJT:
 - a. A unique identifier for each WJT (i.e., WJT ID);
 - b. GPS location for each WJT (latitude and longitude);
 - c. At least one color photo of each WJT identified;
 - d. Size class for each WJT (size class A is any WJT less than one meter in height, size class B is any WJT one meter or greater but less than five meters in height, size class C is any WJT greater than five meters in height);

- e. Anticipated impact for each WJT (i.e., removal, relocation, trimming, or encroachment, or no impact);
- f. If the WJT will be encroached upon (individual will not be removed and project activities will take place within 15 meters of the base of the WJT), the distance from the base where project activities will take place; and
- g. A map showing the location of new WJT in relation to WJT for which take is authorized by the license.

The project owner shall submit the Notification of New Stem or Trunk prior to conducting activities that may result in take of or impacts to the new stem or trunk (i.e., removal, trimming, relocation, or encroachment). After the CPM has confirmed the number and size class of individual WJT to be impacted, an invoice for the mitigation fees pursuant to the Western Joshua Tree Conservation Act (WJTCA) at Fish and Game Code section 1927.3, subdivisions (d)-(e) shall be issued to the project owner by the CPM as required under Item 1.

The Notification of New Stem or Trunk and invoice shall be submitted to the CPM and serve as the basis for CPM authorization of additional take coverage for the new WJT individual(s) provided that the Notification of New Stem or Trunk the project owner submits is complete and mitigation fees are received prior to any impacts to any new WJT individuals identified in the Notification of New Stem or Trunk.

- 4. WJT Stockpiles:** If dead and or removed WJT are stockpiled on site, they shall not be placed within 50-feet (approximately 15 meters) of a WJT that are being preserved on site, relocated on site, or encroached upon.
- 5. Recurring Assessment:** The project owner shall conduct a Recurring Assessment of the project site to determine whether any new WJT individuals have emerged. The Recurring Assessments shall begin six months after the completion of ground-disturbing activities for each phase of project construction and be repeated annually for the duration of construction activities following the initial assessment, then every five years for the life of the project, unless approved by the CPM. If a new WJT is found, the project owner shall prepare and submit a Notification of New Stem or Trunk and submit it to the CPM before conducting project activities that will impact it. The project

owner shall submit the results of the Recurring Assessment as part of Annual Status Report and during operation the results shall be submitted as part of the Annual Compliance Report.

- 6. No-Work Buffers:** The project owner shall ensure no work is conducted within the no-work buffers for WJT that will be preserved on site. Prior to beginning relocation, the project owner shall minimize work within the buffer of WJT that will be relocated to the maximum extent possible. After relocation, the project owner shall ensure no work is conducted within the no-work buffer for relocated WJT. The no-work buffers are as follows:
- 50 feet (approximately 15 meters) surrounding any WJT individual that is five meters or greater in height
 - 25 feet (approximately 7.5 meters) surrounding any WJT individual is one meter or greater but less than 5 meters in height
 - 10 feet (approximately 3 meters) surrounding any WJT individual less than one meter in height

The project owner shall mark no-work buffers using fencing, stakes and ropes, or stakes and flagging of a different color than the color used to identify WJT individuals authorized to be taken. If WJT individuals occur in groups, the project owner may mark a single 50-foot (approximately 15-meter) buffer around the entire group, measured from the base of the trunk of the outer-most WJTs. Any adjustments to the buffer size shall be approved by the CPM, in coordination with CDFW. The project owner shall maintain the no-work buffer markings for the duration of project construction. After all construction activities are completed, the project owner must remove all materials used to mark no-work buffers.

- 7. Trenching:** During storm events, the project owner shall not perform trenching activities within 50 feet (approximately 15 meters) of WJT preserved on site or relocated on site, as soils around the root zone of WJT may be more susceptible to erosion during such events. The project owner shall only perform trenching activities during periods of dry weather (with less than a 40 percent chance of rain), unless approved by the CPM. Within at least 12 hours prior to the onset of predicted rain (40 percent chance of rain or more based on the National Weather Service) or immediately upon the onset of unpredicted rain, the project owner shall ensure that all trenching

activities are ceased, all associated erosion control measures shall be in place, and all motorized equipment and fueling materials shall be removed from areas where runoff from these items can be reasonably foreseen to come into contact with WJT preserved on site, or relocated on site, or encroached upon. Trenching halted due to rain may resume when rain ceases. The project owner shall monitor the National Weather Service 72-hour forecast for the project site. Weather forecasts shall be documented and shall be provided upon request by the CPM.

Verification: The project owner shall submit the draft Western Joshua Tree Relocation Plan to the CPM review and approval, in consultation with CDFW, no less than 45 days prior to commencing any project activities that will impact western Joshua trees, including site mobilization and/or construction. The project owner shall submit the final Western Joshua Tree Relocation Plan and pay the WJTCA mitigation fees prior to any project activities that will impact western Joshua trees.

The annual status report for the relocated western Joshua tree shall be submitted to the CPM for review and approval, in consultation with CDFW, by January 31 of the following year.

If a new WJT stem or trunk is detected, the project owner shall submit a Notification of New Stem or Trunk to the CPM and to CDFW for review and comment prior to any project activities that may impact the new WJT. No impacts may occur until the CPM approves the notification and CDFW has received applicable mitigation fees.

BIO-13 Crotch's Bumble Bee Impact Avoidance, Minimization, and Mitigation Measures for Take. To avoid, minimize, and mitigate take of Crotch's bumble bee, the project owner shall ensure the following are implemented during all phases of the project:

The Designated Biologist and/or Biological Monitor(s) shall conduct pre-construction surveys and monitoring for Crotch's bumble bee. Surveys shall be conducted by a qualified entomologist(s) or biologist(s) familiar with the life history and ecology of Crotch's bumble bee. All proposed surveyors shall be approved by the CPM, in coordination with the CDFW, pursuant to **BIO-1** and/or **BIO-3**.

Surveys shall cover all project work areas, including staging and parking areas, plus a 200-foot buffer, where accessible to account for ground borne vibration associated with controlled detonations, unless a smaller buffer is approved by the CPM. Surveys shall follow the non-invasive protocols established by CDFW in "Survey Considerations for California Endangered

Species Act (CESA) Candidate Bumble Bee Species” or more recent CDFW-approved methods, as available (CDFW 2023a).

1. Crotch's Bumble Bee Mortality Reduction and Relocation

Plan. The project owner shall submit a Crotch’s Bumble Bee Mortality Reduction and Relocation Plan to the CPM for review and approval, and to the CDFW for review and comment, prior to beginning any site mobilization or ground disturbing activities. The Crotch’s Bumble Bee Mortality Reduction and Relocation Plan shall include a map of the project area indicating where Crotch’s bumble bee are likely to occur; a detailed description of the survey methodology (survey details shall be in accordance with the Colony Active Period Season - Pre-Construction Survey described below under Item 3); bumble bee identification and handling methods; measures that will be implemented to minimize impacts to foraging bees during ground disturbing and vegetation removal activities; measures to minimize impacts to overwintering bees during overwintering habitat removal; and measures to minimize impacts to bumble bee nests that are discovered during project activities. The plan shall identify nest relocation techniques and locations where Crotch’s bumble bee nests will be relocated to; an assessment of the habitat and floristic resources found within the relocation sites; and a detailed description of the relocation process including method of removal, transport, and relocation.

The Mortality Reduction and Relocation Plan shall provide the name and contact information for a native bumble bee researcher who will assist and/or consult on techniques to relocate Crotch’s bumble bee nests and the procedure for notification, collection, and salvage of Crotch’s bumble bee carcasses. Only the CPM-approved Designated Biologist(s), or personnel following direction from and under the supervision of the CPM-approved Designated Biologist(s), are authorized to handle and transport Crotch’s bumble bee individuals and Crotch’s bumble bee nests for salvage. Handling of Crotch’s bumble bee individuals and nests by any personnel not specifically authorized by the CPM is prohibited.

Upon written approval of the Crotch’s Bumble Bee Mortality Reduction and Relocation Plan by the CPM, it shall be implemented and remain in effect for the duration of the project license. The plan may be updated by the project owner, in consultation with and subject to the approval of the CPM, to reflect best available science, address unanticipated issues associated with implementation, or update mitigation and conservation strategies. In such cases, the

CPM will contact the project owner to discuss needs to update the plan. Any proposed changes to the Crotch's Bumble Bee Mortality Reduction and Relocation Plan shall be submitted, in writing, to the CPM for approval prior to the implementation of any proposed modifications.

2. **Overwintering Season Surveys (Pre-Construction and During Operation).** If initial ground disturbing construction activities in any given work area occurs during the overwintering season (November 1 through January 31), the CPM approved Designated Biologist(s) and/or Biological Monitor(s) shall conduct overwintering season surveys within areas of suitable habitat (i.e., where vegetation and floral resources occur) in each area planned for project activities no more than 10 days in advance of vegetation removal or ground disturbance in that area of the project site.

If ground disturbing activities during operation occur within areas of suitable habitat (i.e., where vegetation and floral resources occur) during the overwintering season, the CPM-approved Designated Biologist(s) shall conduct overwintering season surveys throughout the project site in areas planned for ground disturbance no more than 10 days in advance of ground or vegetation removal activities, unless approved by the CPM.

Overwintering season surveys shall look for potential Crotch's bumble bee overwintering queens and hibernacula such as leaf litter, logs, and rodent burrows. If overwintering queens or other Crotch's bumble bee are found utilizing hibernacula during surveys, the project owner shall implement the Overwintering Site Buffer (see Item 5, below).

3. **Colony Active Period Season (Pre-Construction and Pre-Maintenance).** If initial ground disturbing construction activities, including site mobilization, in any given work area occur during the Colony Active Period (February 1 to September 30), the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall search for Crotch's bumble bee throughout the area planned for project activities in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan.

Survey efforts for each area shall include at least two visual surveys consisting of meandering transects occurring no more than 10 days prior to the start of ground and vegetation disturbing activities in that area. The CPM approved Designated Biologist(s) and/or Biological

Monitor(s) shall conduct the surveys at least four days apart, with the second survey occurring within two days prior to starting ground and/or vegetation removal activities in that area. The survey duration shall be appropriate to the size of the area planned for project activities plus 50 feet based on the metric of a minimum of one person-hour of searching per three acres of suitable habitat.

The CPM approved Designated Biologist(s) and/or Biological Monitor(s) shall conduct surveys between 7:00 AM and 6:00 PM (Pacific Time) on sunny days between 55-and 95-degrees Fahrenheit with sustained wind speeds measuring less than 10 miles per hour. Survey efforts are further detailed in the Crotch's Bumble Bee Mortality Reduction and Relocation Plan, and any variances to the Survey Protocol, including variances to survey temperatures or timing, shall be submitted to the CPM for review and approval prior to implementation.

If ground disturbing activities occur during operation within areas of suitable habitat during the colony active period, the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall search for Crotch's bumble bee throughout the areas planned for ground disturbance in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan.

If ground disturbing activities are halted for longer than three days within a work area supporting suitable habitat during the Colony Active Period defined as the Queen Flight Season (February 1 through March 31), the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall perform a minimum of one additional survey in the work area in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan prior to reinitiating project activities in the work area.

If a Crotch's bumble bee nest is detected during project surveys or any project activities, the project owner shall implement the Crotch's Bumble Bee Mortality Reduction and Relocation Plan unless the nest can be avoided per the Crotch's Bumble Bee Nest Site Buffer measures (Item 6).

4. **Pre-Construction Survey and Observation Submittal (Construction, Operation, and Maintenance).** The project owner shall provide the Colony Active Period Season - Pre-Construction Survey (Item 3) results or Overwintering Survey Results (to the CPM no more than ten days prior to initiating or resuming

(Item 2) if initial disturbance not complete) project activities in each work area, unless alternate timing is approved by the CPM. The CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall notify the CPM if an overwintering individual and/or nest is observed within 100-feet of the project area during site mobilization, construction, or operation.

Pre-construction surveys and observational submittals shall include a Keyhole Markup Language (KML) map, or KML-Zipped (KMZ) map, and Geographic Information System (GIS) shapefiles of all Crotch's bumble bee detections and/or nests found during survey efforts or during any incidental observations, and photographs of the individual or nest. The map shall include an outline of the project site, and any distinct work area(s) surveyed within the project area, title, north arrow, scale bar, and legend.

5. **Overwintering Site Buffer (Construction, Operation, and Maintenance).** If any overwintering Crotch's bumble bee are found during focused overwintering surveys, during ground and/or vegetation disturbing activities, including site mobilization or construction activities, or during operation of the project, the project owner, in consultation with the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall immediately stop and prohibit all ground disturbing activities within 50 feet of the queen and/or hibernaculum. The project owner shall delineate the 50-foot buffer and notify all workers not to enter the environmentally sensitive area. This buffer may be adjusted with the approval of the CPM based on project activities and potential to disturb the nest.

If an overwintering queen is exposed, the CPM approved Designated Biologist(s) shall implement the Crotch's Bumble Bee Mortality Reduction and Relocation Plan. The CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall record the queen's global positioning system (GPS) location (including datum and horizontal accuracy in feet) and include photographs and a map of the queen's location as detailed in Item 4 (Pre-Construction Survey and Observation Submittal). Upon notice from the CPM, the project owner shall increase the size and modify the environmentally sensitive area buffer accordingly.

6. **Crotch's Bumble Bee Nest Site Buffer (Construction, Operation, and Maintenance).** If a Crotch's bumble bee nest is identified during Colony Active Period Season focused surveys, during ground and/or vegetation disturbing site mobilization or construction

activities, or during operation of the project, the project owner shall ensure establishment of a 50-foot no disturbance buffer around each nest. Buffers shall remain in place until the nest has senesced, project activities are complete, or the nest has been relocated in accordance with the Crotch's Bumble Bee Mortality Reduction and Relocation Plan. This buffer may be adjusted with the approval of the CPM based on project activities and potential to disturb the nest.

To determine if a nest has senesced, the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) shall monitor the nest for senescence in late summer and fall (September-October). Nest senescence can typically be denoted after the presence of reproductives (gynes and males) are observed. Nests shall be monitored for a minimum of one hour per day for three consecutive days during optimal weather conditions (i.e., from 7:00 AM to 6:00 PM, low wind, and low cloud cover conditions, etc.). If there has been no nest activity after the above conditions are met, or the nest has been relocated, the no disturbance buffer may be removed upon approval of the CPM. Survey efforts shall be further detailed in Crotch's Bumble Bee Mortality Reduction and Relocation Plan (Item 1).

7. Daily Work Area Monitoring (Construction and Operation).

The CPM approved Designated Biologist(s) and/or Biological Monitor(s) shall be on-site during all initial ground disturbing site mobilization and/or construction activities in any given work area to visually monitor for Crotch's bumble bee and to detect flight activity. Visual sweeps of each work area shall occur prior to beginning daily project activities, and a minimum of three times throughout the workday, unless alternate timing is approved by the CPM.

The CPM approved Designated Biologist(s) shall be on-site during all ground disturbing operation activities occurring within areas of suitable habitat. The Designated Biologist(s) and/or Biological Monitor(s) shall visually monitor for Crotch's bumble bee and to detect flight activity. Visual sweeps of each work area shall occur prior to beginning ground disturbing activities, and a minimum of three times throughout the workday for the duration of ground disturbing activities, unless alternate timing is approved by the CPM.

8. Crotch's Bumble Bee Observations and Notification. All workers shall inform the CPM-approved Designated Biologist(s) and/or Biological Monitor(s) if a Crotch's bumble bee nest is observed within or near a work area during implementation of any project

activity, including ground or vegetation disturbing construction or operation activities. If a nest is observed all activities occurring within 50 feet of the nest shall cease and the project owner shall implement a 50-foot no disturbance buffer. If an overwintering Crotch's bumble bee nest cannot be avoided, then Item 1 (Crotch's Bumble Bee Mortality Reduction and Relocation Plan) shall be implemented.

9. **Weed Management Plan.** See **BIO-9** (Integrated Weed Management Plan).
10. **Pesticide and Herbicide Use.** The project owner shall not use substances such as herbicides, insecticides, or rodenticides except for the following conditions:
 - Herbicides may be used if needed for noxious weed control or habitat restoration and enhancement.
 - Pesticides (including insecticides) may only be applied post construction in indoor areas where contact with wildlife and foraging Crotch's bumble bee could not occur.

Prior to any such use of herbicides or pesticides, the project owner shall consult with the CPM and may only use herbicides or pesticides upon the CPM's express written approval for each type of use. The project owner shall ensure that any herbicide use only occurs when Crotch's bumble bees are dormant, or when flowers within the application area are no longer in bloom, unless authorized by the CPM to control weeds.

11. **Document Crotch's Bumble Bee Observations.** Survey data shall be submitted to the CNDDDB and shall include specifying the type of observation (e.g. individual bee or nest), type of vegetation cover, slope, aspect, GPS location, distance to foraging location (if known), and any other relevant conditions noted. Negative survey results shall also be reported to the CNDDDB.

Verification: The project owner shall submit the draft Crotch's Bumble Bee Mortality Reduction and Relocation Plan no less than 45 days prior to commencing the surveys to the CPM for review and approval and to the CDFW for review and comment. The project owner shall provide the final plan to the CPM and CDFW at least 7 days prior to the start of any site mobilization.

The project owner shall submit the results of each survey to the CPM for review and approval and to the CDFW for review and comment no more than 45 days after the completion of the surveys.

The project owner shall submit information describing the findings of the bumble bee surveys and implementation of any avoidance measures in the Monthly Compliance Report (per **BIO-6**) and the Annual Compliance Report, during operation, to the CPM.

BIO-14 Habitat Management Land Acquisition for western Joshua tree woodlands, Crotch's Bumble Bee, and Western Burrowing Owl

To mitigate for impacts to western Joshua tree woodlands, Crotch's bumble bee, and western burrowing owl the project owner shall fulfill the following requirements:

The project owner shall mitigate for impacts to Crotch's bumble bee and western burrowing owl habitat by one or a combination of both of the following methods, subject to prior approval by the CPM in coordination with CDFW, with the final amount to be calculated as described below.

a) Credit Purchase: Purchase 843 acres – or an adjusted value calculated based on the assessment of the defined project disturbance footprint – of Crotch's bumble bee and western burrowing owl mitigation or conservation bank credits at a location approved in advance by the CPM, in coordination with CDFW; and/or

b) Habitat Management Lands: Provide for both the permanent protection and management of 843 acres – or an adjusted value calculated based on the assessment of the defined project disturbance footprint – of Habitat Management (HM) lands pursuant to Item 3 (Habitat Management Lands Acquisition and Protection) and the calculation and deposit of the management funds pursuant to Item 5 (Endowment Fund).

The proposed mitigation lands shall also include additional acres of western Joshua tree woodland at the same 3:1 ratio should the identified community be impacted along the optional transmission line route, or if a community is identified based on updated surveys or natural community mapping and/or CPM guidance on the Willow Rock site.

The amount of mitigation actually required may be adjusted up or down from the 843 acres provided here, based on the final accounting conducted under **BIO-6** and calculated based on the project's actual direct permanent and temporary loss of suitable Crotch's bumble bee and western burrowing

owl habitat, identified prior to ground disturbance as approved by the CPM, in consultation with CDFW.

Mitigation lands shall not be required for areas of the project site that are avoided and areas of the project site or transmission line construction that comprise roadway rights-of-way that support disturbed or developed habitat or are subject to routine vegetation management unless they have the potential to support sensitive plants or wildlife. The project owner shall submit detailed maps identifying areas of permanent and temporary habitat loss, areas avoided, and areas exempt under this condition for approval by the CPM, in consultation with CDFW prior to site mobilization. Maps shall be provided in a format acceptable to the CPM.

The purchase of mitigation or conservation bank credits or permanent protection and funding for perpetual management of HM lands must be complete before starting project activities, or within 18 months of the date of the site mobilization, if Security is provided pursuant to the Security (Item 11) below for all uncompleted obligations.

1. **Cost Estimates.** For the purposes of determining the Security amount, it is estimated the cost for the CPM or its contractors to complete acquisition, protection, and perpetual management of the HM lands is as follows:
 - a. Land acquisition costs for HM lands identified in the Item 3 (Habitat Management Lands Acquisition and Protection) below, estimated at \$2,698.00/acre for 843 acres: \$2,274,414.00, or an adjusted value calculated based on the assessment of the defined project disturbance footprint. The adjusted Security amount shall be determined by the CPM, in coordination with CDFW, based on the final acre amount calculated, as detailed above. Land acquisition costs are estimated using local fair market current value per acre for lands with habitat values meeting mitigation requirements.
 - b. All other costs are necessary to review and acquire the land in fee title and record a conservation easement as described below in Item 3b. (Conservation Easement) below: \$558,750.00. These costs would be adjusted based on the assessment of the defined project disturbance footprint.
 - c. Start-up costs for HM lands, including initial site protection and enhancement costs as described in the Item 3f (Start-up Activities) below, estimated at \$344,549.00 for 843 acres or an adjusted value

calculated based on the assessment of the defined project disturbance footprint.

- d. Interim management period funding as described in the Item 4 (Interim Management) (Initial and Capital)) below, estimated at \$466,799.00 for 843 acres or an adjusted value calculated based on the assessment of the defined project disturbance footprint.
- e. Long-term management funding as described in the Item 5 (Endowment Fund) below, estimated at \$2,918,823.00 for 843 acres or an adjusted value calculated based on the assessment of the defined project disturbance footprint. Long-term management funding is estimated initially for the purpose of providing Security to ensure implementation of HM lands management.
- f. Related transaction fees including but not limited to account set-up fees, administrative fees, title and documentation review and related title transactions, expenses incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW as described in the Item 10 (Reimburse CDFW), estimated at \$13,600.00 for 843 acres or an adjusted value calculated based on the assessment of the defined project disturbance footprint..
- g. All costs associated with the CPM engaging an outside contractor to complete the mitigation tasks, including but not limited to acquisition, protection, and perpetual funding and management of the HM lands and restoration of temporarily disturbed habitat. These costs include but are not limited to the cost of issuing a request for proposals, transaction costs, contract administration costs, and costs associated with monitoring the contractor's work \$45,479.00 for 843 acres or an adjusted value calculated based on the assessment of the defined project disturbance footprint.
- 2. **Mitigation Bank Credits.** If the project owner elects to purchase credits to complete Crotch's bumble bee, and western burrowing owl compensatory mitigation obligations, then project owner shall purchase 843 acres, or an adjusted value calculated based on the assessment of the defined project disturbance footprint. The adjusted Security amount shall be determined by the CPM, in coordination with CDFW, based on the final acre amount calculated in accordance with **BIO-14**, of Covered Species credits from a mitigation or conservation bank approved in advance by the CPM prior to initiating project activities, or no later than 18 months from the start of site mobilization, if Security is provided pursuant to Item

11 (Security) below. Prior to the purchase of credits, the project owner shall obtain CPM approval to ensure the mitigation or conservation bank is appropriate to compensate for the impacts of the project. The project owner shall submit to the CPM a copy of the Bill of Sale(s) and Payment Receipt prior to initiating site mobilization or within 18 months from start of site mobilization, if Security is provided.

3. **Habitat Management Lands Acquisition and Protection.** If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall:
 - a. Fee Title. Transfer fee title of the HM lands to CDFW pursuant to terms approved in writing by CDFW. Alternatively, the CPM, in consultation with CDFW, may authorize a governmental entity, special district, non-profit organization, for-profit entity, person, or another entity to hold title to and manage the property provided that the district, organization, entity, or person meets the requirements of Government Code sections 65965-65968, as amended.
 - b. Conservation Easement. If CDFW does not hold fee title to the HM lands, CDFW shall act as grantee for a conservation easement over the HM lands or shall, in its sole discretion, approve a non-profit entity, public agency, or Native American tribe to act as grantee for a conservation easement over the HM lands provided that the entity, agency, or tribe meets the requirements of Civil Code section 815.3. If CDFW elects not to be named as the grantee for the conservation easement, CDFW shall be expressly named in the conservation easement as a third-party beneficiary. The project owner shall obtain written approval from the CPM, in coordination with CDFW, of any conservation easement before its execution or recordation. No conservation easement shall be approved by the CPM unless it complies with Civil Code sections 815-816, as amended, and Government Code sections 65965-65968, as amended and includes provisions expressly addressing Government Code sections 65966(j) and 65967(e). Because the "doctrine of merger" could invalidate the conservation interest, under no circumstances can the fee title owner of the HM lands serve as grantee for the conservation easement.
 - c. HM Lands Approval. The project owner shall obtain CPM written approval of the HM lands, in coordination with CDFW, before acquisition and/or transfer of the land by submitting, at least 90 days

before acquisition and/or transfer of the HM lands, documentation identifying the land to be purchased or property interest conveyed to an approved entity as mitigation for the project's impacts on western Joshua tree woodland, Crotch's bumble bee, and western burrowing owl.

- d. **HM Lands Documentation.** The project owner shall provide a recent preliminary title report, Phase I Environmental Site Assessment, and other necessary documents (please contact CPM for document list). All documents conveying HM lands and all conditions of title are subject to approval from the CPM; and if applicable, the Wildlife Conservation Board, and the Department of General Services.
 - e. **Land Manager.** Designate both an interim and long-term land manager, approved by the CPM, in consultation with CDFW. The interim and long-term land managers may, but need not, be the same. The interim and/or long-term land managers may be the landowner or another party. The land manager shall prepare a draft management plan for CPM review and approval, in consultation with CDFW, and written approval as part of the HM lands acquisition process. The project owner shall notify the CPM of any subsequent changes in the land manager within 30 days of the change. If CDFW will hold fee title to the mitigation land, CDFW will also act as both the interim and long-term land manager unless otherwise specified. The grantee for the conservation easement cannot serve as the interim or long-term manager without the express written authorization of the CPM, in consultation with CDFW.
 - f. **Start-up Activities.** Provide for the implementation of start-up activities, including the initial site protection and enhancement of HM lands, once the HM lands have been approved by the CPM. Start-up activities include, at a minimum: (1) conducting a baseline biological assessment and land survey report within four months of recording or transfer; (2) developing and transferring GIS data if applicable; (3) establishing initial fencing; (4) conducting litter removal; (5) conducting initial habitat restoration or enhancement, if applicable; and (6) installing signage.
4. **Interim Management (Initial and Capital).** Provide for the interim management of the HM lands. The project owner shall ensure that the interim land manager implements the interim management of the HM lands as described in the final management plan and conservation easement approved by the CPM, in consultation with

CDFW. The interim management period shall be a minimum of three years from the date of HM land acquisition and protection and full funding of the Endowment and includes expected management following start-up activities. Interim management period activities described in the final management plan shall include fence repair, continuing trash removal, site monitoring, and vegetation and invasive species management.

The project owner shall either (1) provide Security to the CPM for the minimum of three years of interim management that the land owner, the project owner, or land manager agrees to manage and pay for at their own expense, (2) establish an escrow account with written instructions approved in advance in writing by the CPM to pay the land manager annually in advance, or (3) establish a short-term enhancement account with a CPM-approved entity for payment to the land manager.

5. **Endowment Fund.** If the project owner elects to provide for the acquisition, permanent protection, and perpetual management of HM lands to complete compensatory mitigation obligations, then the project owner shall ensure that the HM lands are perpetually managed, maintained, and monitored by the long-term land manager as described in this Condition of Certification, the conservation easement, and the final management plan approved by the CPM. After obtaining CPM approval, in consultation with CDFW, of the HM lands, the project owner shall provide long-term management funding for the perpetual management of the HM lands by establishing a long-term management fund (Endowment). The Endowment is a sum of money, held in a CPM-approved (in consultation with CDFW) fund that is permanently restricted to paying the costs of long-term management and stewardship of the mitigation property for which the funds were set aside, which costs include the perpetual management, maintenance, monitoring, and other activities on the HM lands consistent with the Condition of Certification, the conservation easement, and the management plan required by Item 3e (Land Manager). Endowment as used in the Certification shall refer to the endowment deposit and all interest, dividends, other earnings, additions and appreciation thereon. The Endowment shall be governed by this license, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended. After the interim management period, the project owner shall ensure that the designated long-term land manager implements the management and monitoring of the HM

lands according to the final management plan. The long-term land manager shall be obligated to manage and monitor the HM lands in perpetuity to preserve their conservation values in accordance with this license, the conservation easement, and the final management plan. Such activities shall be funded through the Endowment.

6. **Identify an Endowment Manager.** The Endowment shall be held by the Endowment Manager, which shall be either the CEC and/or CDFW or another entity qualified pursuant to Government Code sections 65965-65968, as amended.
 - a. The project owner shall submit to the CPM for review and approval, a written proposal that includes: (i) the name of the proposed Endowment Manager; (ii) whether the proposed Endowment Manager is a governmental entity, special district, nonprofit organization, community foundation, or congressionally chartered foundation; (iii) whether the proposed Endowment Manager holds the property or an interest in the property for conservation purposes as required by Government Code section 65968(b)(1) or, in the alternative, the basis for finding that the Project qualifies for an exception pursuant to Government Code section 65968(b)(2); and (iv) a copy of the proposed Endowment Manager's certification pursuant to Government Code section 65968(e).
7. **Calculate the Endowment Funds Deposit.** After obtaining CPM written approval, in consultation with CDFW, of the HM lands, long-term management plan, and Endowment Manager, the project owner shall prepare an endowment assessment (equivalent to a Property Analysis Record (PAR)) to calculate the amount of funding necessary to ensure the long-term management of the HM lands (Endowment Deposit Amount). Note that the endowment for the easement holder should not be included in this calculation. The project owner shall submit to the CPM, in consultation with CDFW, for review and approval the results of the endowment assessment before transferring funds to the Endowment Manager.
 - a. **Capitalization Rate and Fees.** The project owner shall obtain the capitalization rate from the selected Endowment Manager for use in calculating the endowment assessment and adjust for any additional administrative, periodic, or annual fees.
 - b. **Endowment Buffers/Assumptions.** The project owner shall include in the endowment assessment assumptions the following buffers for

endowment establishment and use that will substantially ensure long-term viability and security of the Endowment:

- c. 10 Percent Contingency. A 10 percent contingency shall be added to each endowment calculation to hedge against underestimation of the fund, unanticipated expenditures, inflation, or catastrophic events.
- d. Three Years Delayed Spending. The endowment shall be established assuming spending will not occur for the first three years after full funding.
- e. Non-annualized Expenses. For all large capital expenses to occur periodically but not annually such as fence replacement or well replacement, payments shall be withheld from the annual disbursement until the year of anticipated need or upon request to Endowment Manager and the CPM, in consultation with CDFW.
- 8. **Transfer Long-term Endowment Funds.** The project owner shall transfer the long-term endowment funds to the Endowment Manager upon the CPM's approval of the Endowment Deposit Amount identified above.
- 9. **Management of the Endowment.** The approved Endowment Manager may pool the Endowment with other endowments for the operation, management, and protection of HM lands for local populations of Crotch's bumble bee and western burrowing owl but shall maintain separate accounting for each Endowment. The Endowment Manager shall, at all times, hold and manage the Endowment in compliance with this Certification, Government Code sections 65965-65968, as amended, and Probate Code sections 18501-18510, as amended.

Notwithstanding Probate Code sections 18501-18510, the Endowment Manager shall not make any disbursement from the Endowment that will result in expenditure of any portion of the principal of the endowment without the prior written approval of the CPM in its sole discretion. The project owner shall ensure that this requirement is included in any agreement of any kind governing the holding, investment, management, and/or disbursement of the Endowment funds.

Notwithstanding Probate Code sections 18501-18510, if the CPM, in consultation with CDFW, determines in its sole discretion that an

expenditure needs to be made from the Endowment to preserve the conservation values of the HM lands, the Endowment Manager shall process that expenditure in accordance with directions from the CPM. The Endowment Manager shall not be liable for any shortfall in the Endowment resulting from the CPM's decision to make such an expenditure.

10. **Reimburse CDFW.** The project owner shall reimburse CDFW for all reasonable costs incurred by CDFW related to transfer of the HM lands to CDFW, if applicable, including, but not limited to transaction fees, account set-up fees, administrative fees, title and documentation review and related title transactions, costs incurred from other state agency reviews, and overhead related to transfer of HM lands to CDFW.
11. **Security:** The project owner may proceed with project activities only after the project owner has ensured the funding (Security) to complete any activity required by the Item 3 (Habitat Management Land Acquisition and Protection) that has not been completed before project activities begin. Permittee shall provide Security as follows:
 - a. **Security Amount.** The Security shall be in the amount of \$6,622,414.00 or in the amount identified in the Item 1 (Cost Estimates) specific to the obligation that has not been completed. This amount is determined by the CPM and is based on cost estimates which are sufficient for the CEC or its contractors to complete land acquisition, property enhancement, startup costs, initial management, long-term management, and monitoring.
 - b. **Security Form.** The Security shall be in the form of an irrevocable letter of credit or another form of Security approved in advance in writing by the CPM, in consultation with CDFW.
 - c. **Security Timeline.** The Security shall be provided to the CPM before starting site mobilization.
 - d. **Security Holder.** The Security shall be held by the CPM or in a manner approved in advance in writing by the CPM.
 - e. **Security Transmittal.** The project owner shall transmit security to the CPM by way of an approved instrument such as an escrow agreement, irrevocable letter of credit, or other.

- f. **Security Drawing.** The Security shall allow the CPM to draw on the principal sum if the CPM, in its sole discretion, determines that the project owner has failed to comply with this Condition of Certification.
- g. **Security Release.** The Security (or any portion of the Security then remaining) shall be released to the project owner after the CPM has conducted an on-site inspection and received confirmation that all secured requirements have been satisfied, as evidenced by either:
 - i. Copy of Bill of Sale(s) and Payment Receipt(s) or Credit Transfer Agreement for the purchase of Crotch's bumble bee and/or western burrowing owl credits. OR
 - ii. Written documentation of the acquisition of the HM lands.
 - iii. Copies of all executed and recorded conservation easements.
 - iv. Written confirmation from the approved Endowment Manager of its receipt of the full Endowment.
- 12. **Additional Funding.** The CPM, in consultation with CDFW, may require the project owner to provide additional HM lands and additional funding to ensure the impacts of the taking are minimized and fully mitigated, as required by law, if the project owner does not complete these requirements within the specified timeframe.

Verification: The project owner shall provide verification that the required acquisition, protection and transfer of all HM lands and record any required conservation easements no later than 18 months from the date of start of site mobilization, even if a security is provided. The project owner shall provide the Draft Management Plan to the CPM for review and approval and to CDFW for review and comment no later than 60 days prior to construction. The project owner shall submit the Final Management Plan to the CPM and CDFW no later than 7 days prior to construction.

BIO-15 Special-Status Reptile Avoidance and Minimization Measures. The Designated Biologist(s) and/or Biological Monitor(s) shall conduct pre-construction surveys for special-status reptiles, including coast horned lizard and multiple species of legless lizards. Surveys shall be conducted by qualified biologists, approved by the CPM pursuant to **BIO-1** and **BIO-3**.

- 1. **Surveys.** Prior to ground-disturbing or vegetation removal activities, including during site mobilization and construction, within 100 feet of habitat that has the potential to support legless or horned lizards, the Designated Biologist(s) and/or Biological Monitor(s) shall conduct

surveys to detect this species. An annual survey plan shall be submitted to the CPM for review and approval.

One week prior to any ground disturbance and within 24 hours of beginning work in suitable habitat, the Designated Biologist and/or Biological Monitor(s) shall conduct surveys for these species, unless an alternate timeframe is approved by CPM. Survey methods may include the placement of cover boards prior to the surveys and gently raking in soft friable soils, leaf litter, and debris piles, or other methods approved by the CPM.

The surveys shall be timed to coincide with the time of day and year when these species can be detected. Prior to conducting the surveys, the biologist shall locate the microhabitats for these species and determine a location to place cover boards or rake soils. A map of proposed survey areas shall be provided to the CPM for review and approval prior to initiating the surveys.

2. **If Detected.** If special-status reptiles are detected the Designated Biologist and/or Biological Monitor(s) shall remain in the work area throughout the duration of activities to ensure that impacts are avoided. If it is not possible to allow the animal to leave the work area on its own, the Designated Biologist(s) and/or Biological Monitor(s) shall relocate it to the nearest suitable habitat out of harm's way.
3. **Notification.** The project owner or Designated Biologist(s) shall notify the CPM and CDFW within 24-hours if either of these species are detected and include this information in Monthly Compliance Reports.
4. **Release Locations Criteria.** Prior to capturing or relocating either species, the most appropriate release location(s) shall be determined in adjacent habitat as close as possible to the capture point.
5. **Mortality or Serious Injury.** If the cumulative mortality or serious injury (i.e., compromising survival in the wild) across the entire project site during relocation activities exceeds more than three animals by species, the Designated Biologist(s) shall notify the CPM and CDFW within 24 hours and evaluate if a different method should be utilized or if additional measures are required.
6. **Reporting.** A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions,

and any observations or detections of sensitive reptiles shall be prepared and submitted to the CPM and CDFW. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of sensitive reptiles found during the surveys or project activities, and any relocation efforts shall be provided during monthly and annual compliance reporting.

Verification: The project owner shall submit the proposed annual survey plan 45 days prior to commencing the surveys to the CPM for review and approval and to the CDFW for review and comment. The project owner shall provide the final plan to the CPM at least 10 days prior to the start of any site mobilization. The project owner shall submit the pre-construction survey reports to the CPM and CDFW within seven days of completing the surveys.

BIO-16 Desert Tortoise Avoidance Measures. To avoid impacts to desert tortoise, the Designated Biologist(s) and/or Biological Monitor(s) shall conduct pre-construction surveys prior to site mobilization and/or construction. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW and/or USFWS, pursuant to **BIO-1** and **BIO-3**.

The Designated Biologist(s) shall also prepare and implement a Raven Management and Reporting Plan (Raven Plan), per Item 5, to minimize project-related predator subsidies and prevent any increases in raven numbers or activity within desert tortoise habitat during construction and operation phases.

1. **Surveys.** Prior to ground-disturbing or vegetation removal activities within 200 feet of the project site in suitable desert tortoise habitat the Designated Biologist(s) and/or Biological Monitor(s) shall conduct protocol surveys to detect this species on the Willow Rock project site and laydown areas if construction is not initiated prior to the 2026 spring survey season. Clearance surveys shall be conducted for all linear facilities prior to any ground disturbance. In addition, surveys shall be conducted one week prior to any ground disturbance and within 24 hours of beginning work in suitable habitat. Methods for clearance surveys and exclusion fence specifications shall be consistent with those described in the most recent *Desert Tortoise Field Manual* or more current guidance provided by CDFW and/or USFWS. Any potential burrows, sign, or tortoises shall be noted, recorded using a precision GPS device, and identified on project maps submitted to the CPM.

2. **Desert Tortoise Fencing.** The project owner shall install desert tortoise exclusion fencing around the project site, laydown, staging and parking areas. Exclusion fence specifications shall be approved by the CPM and be consistent with those described in the most recent Desert Tortoise Field Manual or more current guidance provided by CDFW and USFWS. Fencing shall not be required to conduct work at or along the generation-tie line corridor.

After the completion of fencing installation, the Designated Biologist(s) and/or Biological Monitor(s) shall conduct 5 meter clearance sweeps of the project site prior to site mobilization. Follow-up surveys shall also be conducted within fourteen (14) days preceding additional construction after a gap in significant construction activities of 60 calendar days or more. Surveys shall include 100 percent of the area disturbed and a surrounding buffer of 200 feet. A map of proposed survey areas shall be provided to the CPM for review and approval, and the CDFW and USFWS, for review and comment prior to initiating the surveys. New clearance surveys shall be conducted if the desert tortoise fence is breached (e.g., large gaps, torn fencing, or cavities that could allow desert tortoises to enter the site) for more than 24 hours.

3. **If Desert Tortoise Detected.** If adult or juvenile desert tortoises or potentially active burrows are detected during the pre-clearance surveys the Designated Biologist and/or Biological Monitor(s) shall contact the CPM, CDFW, and USFWS immediately for guidance. No work shall occur within 200-feet of any potential burrow or desert tortoise pending coordination with the CPM, CDFW, and USFWS. Handling of desert tortoise shall not be allowed pending the completion of appropriate take authorization from the CEC, in coordination with CDFW, and USFWS, per Item 4.
4. **Supplemental Mitigation for Desert Tortoise.** Desert tortoise are not expected to occur within the project site. If a desert tortoise is detected during construction or operation, and an incidental take is necessary, take authorization shall only be pursued if it is determined by the CPM after consultation with CDFW and USFWS, that such take would not jeopardize the species persistence in the region. Upon confirmation, standard desert tortoise incidental take authorization conditions to minimize and fully mitigate impacts shall be required. These standard measures, approved by the CPM after consultation with CDFW and USFWS, and based on the specific facts of the situation, may include:

- (1) Acquisition of permanent habitat compensation lands calculated on the importance of the habitat in the project area and standard USFWS and CDFW protocols;
 - (2) Tortoise burrow identification, monitoring, and possible burrow excavation by an authorized biologist;
 - (3) Establishment of exclusion or avoidance zones around active burrows or sightings;
 - (4) Worker environmental awareness training;
 - (5) Preparation and submittal of Monthly Compliance Reports; and
 - (6) Other measures as determined by the CPM, in consultation with CDFW and USFWS.
5. **Raven Management and Reporting Plan.** The Designated Biologist shall prepare and implement a Raven Management and Reporting Plan (Raven Plan) consistent with CDFW and USFWS raven management guidelines. The purpose of the Raven Plan shall be to minimize project-related predator subsidies (e.g. common ravens and coyotes) and prevent any increases in raven numbers or activity within desert tortoise habitat during construction and operation phases. The Plan shall address all project components and their potential effects on raven numbers and activity. The Raven Plan shall be reviewed and approved by CPM, in coordination with the CDFW and USFWS, prior to the start of site mobilization activities. The Raven Plan shall:
- Identify all potential project activities as well as structures, components, and other features that could provide predator subsidies or attractants. This includes but is not limited to: improperly managed food waste; road-killed animals; water storage facilities; pooled water from leaks, dust control, or wastewater; debris from brush and other vegetation clearing; as well perch or nest sites on project facilities and other infrastructure. As required by **BIO-7**, Item 18, all trash and food waste will be disposed of in secure, self-closing bins to prevent access by wildlife.
 - Describe specific management practices to avoid or minimize conditions that might increase raven numbers and predatory activities. This includes the following:

- Collect and dispose of animals killed on the site or project access roads to reduce food subsidies;
- Water used for the project shall be applied to avoid puddling;
- Inactive common raven nests will be removed in accordance with USFWS guidelines. If re-nesting occurs, further measures will be coordinated with the CPM, in coordination with CDFW and USFWS; and
- Active nests will be reported to CPM, CDFW, and USFWS for consideration of egg-oiling or other authorized management measures.
- The Designated Biologist and/or Biological Monitor shall oversee implementation of the Raven Plan.
- The project owner shall contribute to the USFWS Regional Raven Management Program by making a one-time payment of \$105 per acre of long-term or permanent project disturbance.
- 6. **Reporting.** A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions, and any observations or detections of desert tortoise or their sign will be prepared and submitted to the CPM, CDFW, and USFWS. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of desert tortoise found during the surveys or project activities, and any relocation efforts will be provided during monthly and annual compliance reporting.

Verification: The project owner shall submit the proposed annual survey plan 45 days prior to commencing the surveys to the CPM for review and approval and to the CDFW and USFWS for review and comment. The project owner shall submit the pre-construction survey reports to the CPM, CDFW, and USFWS no more than 45 days after each survey effort has been completed. The project owner shall submit the receipt of payment to the USFWS Regional Raven Management Program 14 days prior to site mobilization. A report documenting survey results shall be prepared and submitted to the CPM, CDFW, and USFWS within 14 days of completing the surveys.

BIO-17 Nesting Bird Avoidance and Minimization Measures. The project owner shall prepare and implement a Nesting Bird Management Plan (NBMP) in coordination with the Designated Biologist and submit to the CPM for review and approval. The project owner shall submit the resumes of avian

monitors under **BIO-1** and/or **BIO-3** prior to site mobilization and/or construction, if these activities are planned to occur during the breeding season. The NBMP shall describe methods to minimize potential project effects to nesting birds. Where scheduling allows the project owner shall clear or remove any vegetation, conduct site preparation in open or barren areas, or other project-related activities that may adversely affect breeding birds outside the nesting season.

Pre-construction nest surveys shall be conducted during the breeding season for local and migratory birds and will be timed to account for seasonal variation that occurs in the Mojave Desert (January 1 to August 31 for raptors and March 1 to August 31 for other species).

1. **Survey Requirements.** Surveys shall cover all potential nesting habitat and substrates within the project site and areas surrounding the project site within 500 feet of the project boundary, unless otherwise prohibited due to legal access or safety issues, upon approval from the CPM.
2. **Survey Schedules.** At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. Pre-construction surveys shall be conducted no more than 14 days prior to initiation of construction activity. One survey needs to be conducted within the 3-day period preceding initiation of site mobilization, brush clearing, ground disturbance, or construction activity. Surveys shall be repeated throughout site mobilization and construction phases to ensure that birds are not nesting on equipment or have moved into an area after the initial vegetation clearance has been completed.
3. **Nest and Avian Monitoring and Surveys During Construction.** Additional follow-up surveys shall be required if periods of construction inactivity exceed three weeks during January 1 through August 31 in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation.
4. **Nest Detection.** If active nests are detected during surveys, a no-disturbance buffer zone (protected area surrounding the nest) shall be established around each nest. Fencing and/or flagging will be used to delineate the no-activity zone. To minimize the potential to affect the reproductive success of the nesting pair, the extent of the no-activity zone shall be based several factors, including the distance of the activity to the nest, the type and extent of the proposed

activity, the duration and timing of the activity, the sensitivity and habituation of the species, and the dissimilarity of the proposed activity to background activities. The no-activities zone shall be large enough to avoid nest abandonment. Specific buffers shall also be proposed for any shrike caches should they be detected during construction.

The NBMP shall define species-specific or guild-specific default buffers to be applied if an active nest is encountered. These buffer distances shall be reviewed and approved by the CPM, in consultation with CDFW. The default buffers may be modified in the NBMP, with CPM approval. For special-status species, if an active nest is identified, the size of each buffer zone shall be determined by the Designated Biologist in consultation with the CPM (or as described in Conditions of Certification specific for those species). Nest locations shall be mapped using GPS technology.

The plan shall include a table outlining default buffer distances for specific avian groups during construction, detailing the avian groups, species potentially nesting within the project limits and survey area, and corresponding horizontal buffer distances based on disturbance level (DL) in feet, unless alternative table format is approved by the CPM. Typical default buffer distances are 500 feet for most raptors and 250 feet for most passerines, as well as other species or guild-specific buffers.

Nest buffers shall be delineated using the following process:

- Upon discovery of an active nest the default buffer identified in the NBMP shall be applied
 - The Designated Biologist(s) and/or Biological Monitor(s) with avian experience may adjust the buffer based on nest location characteristics (e.g. natural barriers), type and extent of project disturbance, and observed bird behavior. The nest buffer will be sufficiently large to avoid disturbance to the nesting birds and based on the default buffers included in the approved NBMP.
 - Nest buffer reductions for special status species shall be requested in writing via email to the CPM for review and approval.
5. **Active Nest Protection.** If active nests are detected during the survey, the Designated Biologist(s) or Biological Monitor(s) shall monitor all nests with buffers at least once per week, to determine whether birds are being disturbed. If signs of disturbance or distress

are observed, the Designated Biologist(s) or Biological Monitor(s) shall immediately implement adaptive measures to reduce disturbance, in coordination with the CPM. These measures could include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound dampening structures between the nest and construction activity. The Designated Biologist(s) or Biological Monitor(s) shall monitor the nest until it is determined that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the Designated Biologist(s) or Biological Monitor, disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a determination is made. Any nest buffer reduction would require full time monitoring if reduced from the levels identified in the approved NBMP.

6. **NBMP Content.** The NBMP shall include:
- a. definitions of default nest avoidance buffers for each species or group of species, depending on characteristics and conservation status for each species and the nature of planned project activities in the vicinity;
 - b. a notification procedure for buffer distance reductions should they become necessary;
 - c. a pre-construction survey protocol (surveys no longer than 3 days prior to starting work activity at any site);
 - d. a monitoring protocol, to be implemented until adjacent construction activities are completed or the nest is no longer active, including qualifications of monitors, monitoring schedule, and field methods, to ensure that any project-related effects to nesting birds shall be minimized;
 - e. a protocol for documenting and reporting any inadvertent contact with or effects to birds or nests;
 - f. Specify the responsibilities of construction workers and site personnel with regard to nests and nest issues and specify a direct communication protocol to the Biological Monitor and/or Designated Biologist;

- g. Specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options; and
- h. Specify a procedure for removal of inactive nests, including verification that the nest is inactive and a notification/approval process.

The NBMP will be applicable throughout the nesting season (from January 1 through August 31).

- 7. **Nest deterrents.** The NBMP shall describe any proposed measures or deterrents to prevent or reduce bird nesting activity on project equipment or facilities, such as buoys, visual or auditory hazing devices, bird repellents, securing of materials, and netting of materials, vehicles, and equipment.

It shall also include timing for installation of nest deterrents and field confirmation to prevent effects to any active nest; guidance for the contractor to install, maintain, and remove nest deterrents according to product specifications; and periodic monitoring of nest deterrents to ensure proper installation and functioning and prevent injury or entrapment of birds or other animals.

If an active nest is located on project facilities, materials or equipment, the project owner shall avoid disturbance or use of the facilities, materials or equipment (e.g., by red-tag) until the nest is no longer active.

- 8. **Nest Start Removal.** Prior to removing any suitable nesting habitat, preconstruction nesting bird surveys should inform as to where existing raptor nests, and other special status bird nests, occur throughout the project area. The locations of existing special status bird nests within the habitat removal footprint shall be recorded and mapped by a qualified biologist. Such nests shall be removed outside of the nesting bird season.

Due to the potential for nest building during active construction, a biological monitor shall be employed for the duration of project construction to regularly inspect for nest building attempts that may occur on/within construction equipment and/or within an area of active construction disturbance.

In the event nest building is detected, the biologist shall deter birds from nesting using non-invasive methods to modify the circumstances. In the event a nest is built, and eggs are laid, the nest shall

be considered active nest and shall be avoided. This may include placing a buffer around a piece of equipment or closing off a work area until the nest has fledged. This measure shall not be employed for state or federal special status species.

9. **Accidental Nest Disturbance.** The NBMP shall specify a procedure to be implemented following accidental disturbance of nests, including wildlife rehabilitation options. It also shall describe any proposed measures, and applicable circumstances, to prevent take of precocial young of ground-nesting birds such as killdeer or quail. The project owner shall identify an appropriate wildlife care facility before starting site mobilization. The location of the care facility shall be provided to the CPM prior to site mobilization. The project owner shall bear any costs associated with the care or treatment of project related injured birds. The project owner shall provide a letter report detailing the outcome of the care to the CPM.
10. **Reporting.** Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests (including helicopter traces), and any adjustments to buffer areas shall be updated and available to the CPM, weekly or other CPM-approved timeframe. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to the CPM.

The draft NBMP shall include a proposed format for regular reporting (e.g., spreadsheet available online, tracking each nest). In addition, the NBMP shall specify the format and content of nest data to be provided in regular monitoring and compliance reports. At the end of each year's nest season, the project owner shall submit an annual NBMP report to the CPM and CDFW. Specific contents and format of the annual report will be reviewed and approved by the CPM in consultation with CDFW.

Verification: At the end of each year's nest season, the project owner shall submit an annual NBMP report to the CPM and CDFW no more than 30 days after the end of the nesting season. The project owner shall submit pre-construction survey reports to the CPM and CDFW no more than 30 days after each survey effort has been completed. The project owner shall provide a letter report detailing the outcome of the care of any injured birds or nest failures to the CPM and the CDFW within 14 days of the incident.

BIO-18 Collision Avoidance and Minimization Measures. The project owner shall submit a proposed aerial marker installation plan that includes the types of markers to be used, their proposed installation locations, and a

corresponding map. The project owner shall identify which section of the generation tie-line is located within 5 miles of active Swainson's hawk nests as determined by the Designated Biologist(s) and/or Biological Monitor (s). The project owner shall install bird flight diverters or other suitable aerial markers on the generation tie-line in all areas within 5-miles of Swainson's hawk nests, as confirmed by a qualified biologist, approved per **BIO-1** and/or **BIO-3**. All aerial markers and locations shall be approved by the CPM, in consultation with CDFW. The project owner shall ensure that all aerial markers remain in good condition and functional for the life of the project. Damaged or missing markers shall be repaired or replaced promptly upon discovery. Routine inspections shall be conducted at intervals approved by the CPM, in consultation with CDFW.

Verification: The project owner shall identify which section of the generation tie-line is located within 5 miles of active Swainson's hawk nests no less than 45 days prior to construction of the gen-tie line. The project owner shall submit a proposed aerial marker installation plan to the CPM and CDFW no less than 30 days prior to the installation of bird flight diverters or aerial markers. The project owner shall submit a report to the CPM and CDFW no more than 30 days after the placement of bird flight diverters or aerial markers has been completed. Monitoring and maintenance of the markers shall be reported in the Annual Compliance Report during operation.

BIO-19 Burrowing Owl Impact Avoidance, Minimization, and Mitigation Measures for Take. The project owner shall implement the following measures to avoid, minimize and offset impacts to breeding and foraging burrowing owls during site mobilization, construction, operation, and decommissioning:

1. **Burrowing Owl Mortality Reduction Plan.** The project owner shall submit a Burrowing Owl Mortality Reduction Plan prepared by the Designated Biologist(s) for review and approval to the CPM, and CDFW for review and comment, prior to beginning any project activities including site mobilization, surveying, fencing, or ground disturbance. Burrow exclusion, burrow excavation, artificial burrow construction, and other relocation activities shall not proceed until this plan has been approved in writing by the CPM in coordination with the CDFW.

The Burrowing Owl Mortality Reduction Plan shall include, but not be limited to detailed description of survey methodology; detailed burrow exclusion and excavation methods; project activities that may be performed within burrowing owl avoidance buffers; identification of a wildlife rehabilitation center or veterinary facility capable of and willing to treat injured burrowing owl or care for at-risk burrowing

owl, burrowing owl eggs, and/or burrowing owl chicks; and procedure for collection and storage of burrowing owl (BUOW) carcasses. Only CPM approved Designated Biologist(s) (s), or personnel following directions from and under the supervision of the Designated Biologist(s), are authorized to handle and transport injured burrowing owl for treatment or impacted burrowing owl eggs for salvage. All other burrowing owl handling is prohibited.

Once the Burrowing Owl Mortality Reduction Plan is approved in writing by the CPM, it shall be used for the duration of the project unless updated by request of the CPM to reflect best available science, or to update mitigation and conservation strategies. If any updates are required, the CPM will contact the project owner to discuss potential updates. Any proposed changes to the Burrowing Owl Mortality Reduction Plan shall be submitted, in writing, to the CPM for review and approval and the CDFW for review and comment in writing prior to the implementation of any proposed modifications.

2. **Burrowing Owl Burrow Replacement Plan.** The project owner shall replace each known burrowing owl burrow (as defined below under Burrow Avoidance) that cannot be avoided within the project area with an artificial burrow to compensate for the loss of important shelter used by BUOW for protection, reproduction, and escape from predators. The project owner shall submit a Burrowing Owl Burrow Replacement Plan prepared by an approved Designated Biologist(s) to the CPM. Implementation of the Burrowing Owl Burrow Replacement Plan shall not proceed until this plan has been approved in writing by the CPM in coordination with the CDFW. The Burrowing Owl Burrow Replacement Plan shall include, but not be limited to: a discussion and map of potential artificial burrow replacement locations; description of the replacement burrow design and dimensions (e.g., depth and width of burrow, width of burrow entrance, orientation of burrow entrance, number and placement of entrances to natal burrows); artificial burrow installation methods; long-term artificial burrow protection and maintenance methods; and timing of BUOW burrow installation/construction.

Once the burrowing owl Burrow Replacement Plan is approved in writing by the CPM, it shall be used for the duration of the project unless it is updated by the CPM to reflect best available science, or to update mitigation and conservation strategies in which case the CPM will contact the project owner to discuss needed updates. If any updates are required, the CPM will contact the project owner to discuss potential updates. Any proposed changes to the Burrowing

Owl Mortality Reduction Plan shall be submitted, in writing, to the CPM for review and approval and the CDFW for review and concurrence in writing prior to the implementation of any proposed modifications.

3. **Burrowing Owl Pre-Construction Nesting Surveys and Reporting.** The Designated Biologist and/or Biological Monitor shall conduct preconstruction surveys for burrowing owls to identify potential, known, and/or nesting burrowing owl burrows. A potential burrowing owl burrow is any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl; a known burrowing owl burrow is a burrow that shows evidence the burrow is being used, known to have been used, or past use by a burrowing owl, or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.); and a nesting burrowing owl burrow is used for nesting (e.g. known burrowing owl burrow indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation. The survey area shall include the project disturbance area and surrounding 300-meter survey buffer, as accessible.

If surveys detect burrowing owls within 1,600 feet of proposed construction activities, the Designated Biologist shall provide to the CPM documentation indicating that non-disturbance buffer fencing has been installed no less than 10 days prior to the start of any project-related site disturbance activities. The documentation shall include information as specified in Items 4 and 5, or as otherwise requested by the CPM.

4. **Burrow Map.** The Designated Biologist(s) shall provide a Keyhole Markup Language (KMZ) map and GIS shapefiles to the CPM of all burrowing owl burrows found during the surveys conducted during the surveys required under Item 3 requirements (Burrowing Owl Pre-Construction Surveys and Reporting). The map shall show the details and locations of all burrowing owl sightings and potential, known, and nesting burrowing owl burrows as defined in the Burrowing Owl Burrow Avoidance section. The map shall include an outline of the project site, and any distinct work area(s) surveyed within the project area, title, north arrow, scale bar, and legend.

If a territory or nest is confirmed during the surveys the project owner shall notify the CPM and CDFW within 48 hours. In coordination with the Designated Biologist(s), CPM and CDFW, a

1,600 foot line of sight disturbance-free buffer shall be established and demarcated by fencing or flagging and placed on project maps. This buffer may be adjusted as determined by a qualified avian biologist in coordination with the CPM and CDFW. Nest locations shall be mapped using GPS technology and provided the CPM.

5. **BUOW Burrow Avoidance.** The Designated Biologist shall establish no-disturbance buffer zones around potential, known and nesting burrowing owl burrows according to the following guidelines:

a. If a potential burrowing owl burrow (any subterranean hole three inches or larger for which no evidence is present to conclude that the burrow is being used or any past use by a burrowing owl) is discovered, the Designated Biologist shall establish a minimum 50-foot no-disturbance buffer around the burrow.

b. If a known burrowing owl burrow (a burrow that is known to have been used or shows evidence of current or past use) or an "atypical" burrow (e.g., a pipe, culvert, buckled concrete, etc.) showing signs of occupancy (e.g. burrowing owl presence, whitewash, pellets, prey remains, etc.) is discovered, the Designated Biologist(s) shall establish a minimum no-disturbance buffer of at least 100 feet around the burrow. A no-disturbance buffer of at least 1,600 feet shall be established around known burrowing owl burrows currently occupied by burrowing owl during the nesting season (typically February 1 to August 31 in this area). Nest buffer reductions are described below.

c. If a nesting burrowing owl burrow (e.g. known burrowing owl burrow with indications of the presence of eggs, chicks, dependent young, and/or brooding or egg incubation) is discovered within or immediately adjacent to the project site, the project owner and/or Designated Biologist shall notify the CPM and CDFW immediately through email. A no-disturbance buffer of at least 1,600 feet shall be established around the nest burrow. A no-disturbance buffer of at least 1,600 feet shall be established around known burrowing owl burrows currently occupied by burrowing owl during the nesting season (February 1 to August 31).

If burrowing owl burrows cannot be avoided as described above, then the project owner shall follow Item 6 (Burrowing Owl Burrow Blockage), Item 7 (Burrowing Owl Burrow Excavation), and Item 1 (Burrowing Owl Mortality Reduction Plan), as appropriate. If the approved Designated Biologist determines burrowing owl are visibly stressed by project activities or by workers in the vicinity after these

no-disturbance buffers the Designated Biologist shall immediately increase the non-disturbance buffer to a distance where the visible stress is no longer observed. The increased no-disturbance buffers will be reviewed and approved by the CPM, in coordination with CDFW, based on their behavioral observations of the affected burrowing owl.

The buffers prescribed above shall not be reduced or otherwise modified without prior written approval from the CPM, in coordination with the CDFW. If the approved Designated Biologist(s) determines that specific project activities are not likely to affect the burrowing owl using known or nesting burrowing owl burrows due to the nature of the specific project activities, or due to objects or topography that might reduce potential noise disturbance and obstruct view of the project activities from the nest, then the CPM approved Designated Biologist(s) may email a written request to the CPM to reduce the buffer distance with documented observational data (Buffer Reduction Request). The CPM will review each Buffer Reduction Request on a case-by-case basis and provide a determination in response to each Buffer Reduction Request in writing. The CPM may request additional and ongoing biological monitoring prior to approving a Buffer Reduction Request.

6. **BUOW Burrow Blockage.** If the CPM has approved the blockage of a known burrowing owl burrow, the Designated Biologist shall block rather than destroy any unoccupied known burrowing owl burrow located within the buffer distances limits prescribed in Item 5 (Burrowing Owl Burrow Avoidance), but outside the discrete work area(s) within the project area(s) where ground and vegetation disturbing project activities will be performed. Burrows (including burrows in natural substrate and in under man-made structures) may be blocked only immediately after the CPM-approved Designated Biologist(s) has conducted four consecutive 24-hour periods of monitoring with infrared camera and determined that burrowing owl is not currently present. Burrow blockage shall be done in a manner that prevents burrowing animals from digging back into the burrow. All blocked burrows shall be monitored by the approved Designated Biologist(s) and/or Biological Monitor(s) at least once every 48 hours while the blockage is in place to ensure that the exclusion material is still intact. If burrowing owl regains access to the burrow, the project owner or Designated Biologist shall contact the CPM immediately and obtain written guidance regarding how to proceed. All blocked burrows shall be unblocked within 48 hours of completion of construction activities within the prescribed buffer distance.

7. **Burrowing Owl Burrow Excavation.** The approved Designated Biologist(s), and/or Biological Monitor under direct supervision of the approved Designated Biologist(s), shall excavate known or potential burrows that exhibit signs of current or past burrowing owl use or characteristics suggestive of a burrowing owl burrow (including burrows in natural substrate and in/under man-made structures) that cannot be avoided per guidance in Item 5 (Burrowing Owl Burrow Avoidance), that are within the project site. Burrows to be destroyed shall be fully excavated, filled with dirt, and compacted to ensure that burrowing owl cannot reenter or use the burrow during the period that project activities occur in the project site.
- a. Excavation of known burrowing owl burrows shall only occur after the approved Designated Biologist(s) has determined that burrowing owl is not currently present after 4 consecutive 24-hour periods of monitoring with infrared cameras. If the excavation process reveals evidence of current use by burrowing owl, then burrow excavation shall cease immediately, and camera monitoring as described above shall be conducted or resumed as applicable. burrowing owl burrows shall be carefully excavated with hand tools, or by mechanical means if a specific methodology is approved in writing by the CPM, until it is clear no individuals of burrowing owl are inside.
 - b. Potential burrowing owl burrows without any signs of burrowing owl use or characteristics suggesting it is a burrowing owl burrow may be excavated under the direct supervision of the approved Designated Biologist(s) without prior camera monitoring.
 - c. Nesting burrowing owl burrows used for nesting shall not be excavated until biological and camera monitoring confirm that the chicks have fledged and are no longer dependent on the nest and then only after written concurrence from the CPM. An established burrowing owl burrow no-disturbance buffer may be removed once the burrow is collapsed and the burrowing owl (s) is/are no longer using the burrow.
8. **Burrowing Owl Injury.** If a burrowing owl is injured or found dead within the vicinity of the project area, project owner shall notify the CPM of the injury or mortality to the burrowing owl immediately by email. The Designated Biologist(s) shall follow the Burrowing Owl Mortality Reduction Plan to either immediately transport injured individuals to a CPM-approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage

procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

9. **Burrowing Owl Observations and Notification.** All workers shall be trained to identify burrowing owl and shall inform the approved Designated Biologist(s) if a burrowing owl is seen within or near the project area during implementation of any project activity. All work in the vicinity of the burrowing owl which could harm the individual, shall cease until the individual moves from the project area of its own accord or the approved Designated Biologist(s) passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the CPM-approved Burrowing Owl Mortality Reduction Plan.
10. **Operation Activities Designated Biologist On-site.** The approved Designated Biologist(s) shall be onsite during all ground and vegetation disturbing activities. The approved Designated Biologist(s) shall be on-site during all non-emergency ground and vegetation disturbing project activities performed at night.
11. **Vehicle Parking (Site Mobilization, Construction and Operation).** During site mobilization, construction, operation, and maintenance activities or while implementing burrowing owl take minimization measures, the project owner shall not allow vehicles to park on top of known or potential burrowing owl burrows. Vehicles left overnight shall not be located within 50 feet of known burrowing owl burrows. Workers shall inspect for burrowing owl under vehicles and equipment every time the vehicles and equipment are moved. If a burrowing owl is present, the worker shall wait for the burrowing owl to move unimpeded to a safe location. Alternatively, the approved Designated Biologist(s) shall be contacted to passively encourage the burrowing owl to move away from the vehicle or equipment, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan.
12. **Pipes and Materials Inspection (Site Mobilization, Construction, Operation).** The project owner shall ensure that all pipes or similar materials stockpiled or replaced in the project area are capped or otherwise enclosed at the ends to prevent entry by burrowing owl. The project owner shall ensure that any permanent pipes or similar materials or structures are left open where burrowing owl or other species may enter them and become trapped. The approved Designated Biologist shall thoroughly inspect all such

materials for burrowing owl, before they are moved, buried, or capped. If a burrowing owl is discovered inside such material, that section of material shall not be moved until the animal has escaped of its own accord. Alternatively, the approved Designated Biologist may passively encourage the burrowing owl to move away from the pipes, culverts, or similar structures, in compliance with the timing and methods identified in the Burrowing Owl Mortality Reduction Plan.

13. **Ground and Vegetation Disturbing (Site Mobilization, Construction, and Operation).** Burrowing Owl Pre-Construction Surveys and Reporting (Item 3) shall be implemented within 30 calendar days prior to commencing ground or vegetation disturbing activities during operation in each distinct work area(s) within the project site. If the approved DB identifies any potential, known, or nesting BUOW burrows, the burrow(s) shall be monitored following the Burrowing Owl Burrow Blockage (Item 6) and Burrowing Owl Burrow Excavation (Item 7) as applicable, unless avoided per the Burrowing Owl Burrow Avoidance requirements (Item 5).
14. **Burrowing Owl Observations (Operation).** During operational activities within the project site, all workers shall inform the approved Designated Biologist if a burrowing owl is observed within or near the project area. All work in the vicinity of the burrowing owl, which could injure or kill the animal, shall cease immediately until the burrowing owl moves from the project area of its own accord or the approved DB passively encourages the individual to move out of harm's way, in compliance with the timing and methods identified in the approved Burrowing Owl Mortality Reduction Plan.
15. **Burrowing Owl Injury (Operation).** If a burrowing owl is injured or found dead within the vicinity of the project area, the project owner shall notify the CPM of the injury or mortality to the burrowing owl immediately. The approved Designated Biologist shall follow the approved Burrowing Owl Mortality Reduction Plan to either immediately transport injured individuals to a CDFW-approved wildlife rehabilitation center or veterinary facility or follow approved collection and storage procedures for deceased animals. The project owner shall bear any cost associated with care and recovery of any injured burrowing owl adults, nestling(s) or egg(s) and hacking (controlled release of captive reared young).

Verification: The Designated Biologist shall provide the preconstruction survey results to the CPM within 14 days of the completion of the survey. If surveys detect burrowing

owls within 1,600 feet of proposed construction activities, the Designated Biologist shall provide the CPM documentation indicating that a non-disturbance buffer has been installed no less than 10 days prior to the start of any project-related site disturbance activities. The documentation shall include information as specified in Items 4 and 5, or as otherwise requested by the CPM.

If pre-construction surveys detect burrowing owls or active burrowing owl burrows within the project disturbance area, the project owner shall provide to the CPM a Burrowing Owl Mortality Reduction Plan prior to the start of activities (the measures described in the plan shall be incorporated into the BRMIMP and implemented.) The plan shall be for review and comment by the CPM and shall be finalized no less than 30 days prior to commencing site mobilization.

The project owner shall submit the Burrowing Owl Mortality Reduction Plan and Burrow Replacement Plan to the CPM for review and comment at least 30 days prior to initiation of site mobilization. Within 30 days of the conclusion of the construction period, the project owner shall submit a final Burrowing Owl Mitigation Implementation Report detailing location of all burrowing owl observed, take measures implemented, and their effectiveness.

During operations, the project owner shall include in the Annual Compliance Report an accounting of all burrowing owl documented on site, including copies of the Designated Biologist and/or Biological Monitor's field notes, any buffer zones erected, maps, additional avoidance and minimization measures implemented, and their perceived effectiveness.

BIO-20 Swainson's Hawk Avoidance and Minimization Measures. The DB and/or Biological Monitor(s) shall conduct protocol surveys for Swainson's hawks and avoid all occupied nests. Survey schedule and requirements shall be as identified below unless otherwise authorized by the CPM in consultation with CDFW.

1. **Survey Requirements.** The Designated Biologist shall provide the resumes of proposed Swainson's hawks surveyors to the CPM for approval and the CDFW and USFWS for concurrence prior to conducting surveys, pursuant to **BIO-1** and/or **BIO-3**. Prior to conducting the surveys, the project owner or Designated Biologist shall provide a map identifying all potential nesting habitat in or within 0.5-miles of proposed disturbance areas during construction to the CPM and CDFW. One round of protocol surveys will be completed within 5-miles of the generation tie-line corridor, unless otherwise prohibited due to legal access or safety issues, to assist in the

location where aerial markers or bid flight diverters shall be installed. Surveys in Period I may not be used for this purpose.

Preconstruction surveys for Swainson's hawks shall occur annually during the construction phase of the project in all areas supporting suitable roosting or breeding habitat within 0.5 miles of project disturbance areas including but not limited to the SCE Whirlwind switching station, Willow Rock site, access roads, lay down areas, and generation tie-line alignment where active construction is proposed.

Surveys will be designed and carried out by a qualified biologist with experience in the natural history and nesting behavior of Swainson's hawks. The survey periods will follow a specified schedule: Period I occurs from 1 January to 31 March, Period II occurs from 1 April to 30 April, Period III occurs from 1 May to 30 May, and Period IV occurs from 1 June to 15 July. No fewer than three surveys per period in at least two survey periods excluding survey period I shall be completed immediately prior to the start of project construction, unless approved by the CPM, in coordination with CDFW.

2. **Nesting Season Inventory Data.** At a minimum, data collected during the nesting season surveys shall include the following: territory status (unknown, vacant, occupied, breeding successful, breeding unsuccessful); nest location, number observed; nesting chronology; number of young at each visit; photographs; and characterization of the habitat in which the nest is placed.
3. **Nest Detection.** If an active or occupied nest is confirmed during the surveys within 0.5 miles of the project site or gen-tie line the project owner shall notify the CPM and CDFW within 48 hours. In coordination with the CPM and CDFW a 0.5-mile line of sight disturbance-free buffer shall be established and demarcated by the DB with fencing or flagging and placed on project maps. This buffer may be adjusted as determined by a qualified avian biologist, approved pursuant to **BIO-1** and/or **BIO-3** in coordination with the CPM and CDFW. This buffer shall remain in place until the Designated Biologist has verified that the nest is no longer active or occupied. Nest locations shall be mapped using GPS technology and provided to the CPM.
4. **Active Nest Protection.** If surveys detect nesting Swainson's hawks, a 0.5 mile no-disturbance buffer zone shall be implemented around the nests until the end of the breeding season, or a qualified biologist determines that the nest is no longer active. Alternate buffer

zones may be proposed if there is compelling ecological justification for the reduction with the approval of the CPM, in coordination with the CDFW. Alternative buffers must be approved in writing by the CPM, in consultation with CDFW. The Designated Biologist or Biological Monitor shall monitor the nest until it is determined that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the Designated Biologist(s) or Biological Monitor(s), disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a determination is made.

5. **Accidental Nest Disturbance.** The project owner or Designated Biologist shall notify the CPM and CDFW within 48 hours if an active nest fails and if the failure was project related or predation.
6. **Reporting.** The Designated Biologist shall prepare a Swainson's Hawk Survey Report and submit the document to the CPM for review and approval and the CDFW for review and comment. Throughout the construction phase of the project, nest locations, project activities in the vicinity of nests, and any adjustments to buffer areas shall be updated and available to the CPM. Nest data and, if applicable, nest activity monitoring results and any adaptive management actions taken, shall be provided to CPM and CDFW in monitoring reports submitted as part of the Monthly Compliance Report, as data becomes available and if specific nest monitoring or any adaptive management actions are taken, and summarized in annual monitoring reports. All buffer reduction notifications and prompt notifications of nest-related non-compliance and corrective actions will be made via email to the CPM and CDFW. At the end of each year's nest season, the project owner shall submit an annual monitoring report to the CPM and CDFW. Specific contents and format of the annual report shall be submitted to the CPM for review and approval, in consultation with CDFW.

Verification: The project owner shall submit the resumes of the proposed Swainson's hawks biologists and avian monitors no less than 45 days prior to conducting the surveys and or site mobilization whichever comes first. The project owner shall submit pre-construction survey reports to the CPM and CDFW no more than 30 days after each survey effort has been completed. The project owner shall provide a letter report detailing the outcome of any nest failures to the CPM and the CDFW within 14 days of the incident.

BIO-21 Small Mammal Avoidance and Minimization Measures. The Designated Biologist and/or Biological Monitor(s) shall conduct pre-

construction surveys to identify areas that support dense concentrations of small mammal burrows that could be utilized by Tulare grasshopper mouse, Tehachapi pocket mouse, and San Joaquin pocket mouse. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**.

1. **Surveys.** Prior to any site mobilization, including ground-disturbing or vegetation removal activities, that will occur in suitable habitat during the general breeding season for pocket mice (May 1 through July 15) the Designated Biologist and/or Biological Monitor(s) shall conduct focused surveys to identify dense concentrations of potential burrows for pocket mice.

Surveys shall encompass work areas and a 50-feet buffer, unless approved by the CPM or otherwise prohibited due to legal access or safety issues. Any areas supporting dense concentrations of potential burrows for pocket mice shall be recorded using a precision GPS unit and included on maps.

In addition, prior to site mobilization on the Willow Rock project site and laydown areas a clearance survey conducted in the proposed work areas shall be conducted by the Designated Biologist and/or Biological Monitor(s) to identify any new or modified dense small mammal burrow concentrations that may have not been identified during pre-construction surveys.

2. **Salvage of Pocket Mice.** During initial grading the Designated Biologist(s) and/or Biological Monitor(s) shall make every effort to salvage small mammals such as pocket mice that may be displaced during initial ground disturbance. Mice will be collected, stored in a container that provides refuge, then relocated to adjacent habitat and placed under a shrub.
3. **Mortality or Serious Injury of Small Mammals.** If mortality or serious injury (i.e., compromising survival in the wild) occurs to any special status small mammal (e.g., Tulare pocket mouse, Tehachapi pocket mouse, San Joaquin pocket mouse, etc.), the project owner or Designated Biologist shall immediately contact the CPM to evaluate if additional measures are required, in coordination with CDFW.
4. **Reporting.** A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions, and any records of any areas supporting densely concentrated small mammal burrows or observations of special-status small mammals

will be prepared and submitted to the CPM and CDFW. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of these species found during the surveys or project activities, any salvage efforts that were implemented, and any mortalities or injuries that were reported will be provided during monthly and annual compliance reporting.

Verification: The project owner shall submit the pre-construction survey reports to the CPM and the CDFW no more than 30 days after each survey effort has been completed. Monitoring reports shall be submitted in the Monthly Compliance Report during construction and Annual Compliance Report, as needed, during operation.

BIO-22 American Badger, Desert Kit Fox, and Ringtail Avoidance and Minimization Measures. The Designated Biologist and/or Biological Monitor(s) shall conduct pre-construction surveys for American badger, desert kit fox, and ringtail. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented.

1. **Surveys.** Pre-construction surveys for American badger, desert kit fox, and ringtail shall be conducted within a 500-foot radius of all project disturbance areas, where legal access is granted, to detect individuals and dens. Surveys shall be conducted no more than 14 days prior to the start of project activities; however the project owner may elect to conduct additional surveys to map and detect potential dens that occur on or near disturbance areas.

Surveys shall be conducted using 20 meter (65-feet) spaced transects or less depending on topography to ensure 100 percent visual coverage of the survey area, unless approved by the CPM. Surveys shall be conducted during favorable weather conditions, avoiding periods of heavy wind or rain, fog, or other climate conditions that could potentially affect the ability of the surveyors to detect dens. All potential dens shall be examined for evidence of use by American badger, desert kit fox, or ringtail (i.e., scat, tracks, or fur). Any dens or den complexes identified during the surveys shall be classified as inactive, potentially active, or active.

The Designated Biologist and/or Biological Monitor(s) shall monitor all potentially active den entrances within 500-feet of project disturbance areas with infrared cameras for five consecutive days to determine den occupancy. Occupancy shall be determined through camera footage and/or by checking the apron of the den entrance(s) for tracks in loose dirt and by using a tracking medium (e.g.

diatomaceous earth). If desert kit fox or ringtail are detected during surveys, the project owner shall notify the CPM and CDFW immediately.

2. **If Dens are Detected.** If a desert kit fox or ringtail den is determined to be active, it shall be avoided by a minimum of 500 feet during the pupping season (January 1 through August 31 for desert kit fox; May 1 through August 31 for ringtail) and by a minimum of 200 feet outside of the pupping season (September 1 through December 31 for desert kit fox; September 1 through April 30 for ringtail). If an American badger den is determined to be active, it shall be avoided by a minimum of 250 feet during the pupping season (March 1 through August 31) and by a minimum of 100 feet during the non-pupping season (September 1 through February 28). Avoidance buffers shall be established by the Designated Biologist using staking, flagging, or other conspicuous materials. No project activities will be permitted within the avoidance buffers. The Designated Biologist may modify the avoidance buffer distances based on the location of the den, specific site conditions, and nature of proposed work activities, with prior written approval from the CPM in coordination with CDFW. The avoidance buffer shall remain in place until the Designated Biologist(s) confirms that the young have left the den or the den has been naturally abandoned or failed.
3. **Passive Relocation.** No passive relocation shall be allowed at any time if active ringtail dens are identified and confirmed during surveys or biological monitoring. If confirmed active American badger or desert kit fox dens cannot be avoided, the project owner shall submit an American Badger and Desert Kit Fox Eviction Plan to the CPM for review and approval and the CDFW for review and comment. The American Badger and Desert Kit Fox Eviction Plan shall address proposed eviction activities outside the pupping season, and shall include, at a minimum, the following:
 - Methods and materials used for construction and maintenance of one-way eviction doors;
 - Use of continuous camera monitoring of dens for at least five consecutive days to confirm that no American badger or desert kit fox individuals are present and to ensure none are trapped during eviction;
 - Specific timing of eviction activities;

- Design, materials, and methods used for construction and maintenance of artificial burrows and/or identification of location and discussion of preexisting, suitable, and unoccupied natural dens;
- Methods of den collapse; and
- Details regarding a “protect-in-place” option (i.e., evict but no collapse).

Passive relocation during the pupping season shall not be authorized. Passive relocation outside the pupping season shall be evaluated on a case-by-case basis by the CPM, in consultation with CDFW.

4. **Notification of Detection.** The project owner or Designated Biologist shall notify the CPM as well as CDFW within 24-hours if an American badger or desert kit fox, or any other special status mammal is detected during the surveys or during routine monitoring. The report shall include the number of animals detected, photos, and the location of the detection. Upon receiving notification, the CPM and CDFW may provide guidance for further action as appropriate to the species.
5. **Monitoring.** The Designated Biologist and/or Biological Monitor(s) shall remain onsite throughout the duration of any project activities that are conducted within 300 feet of the edge of the avoidance buffer. The biologist will have the authority to halt work, if it is determined that the animals are exhibiting increased levels of distress (e.g., displaying defensive behavior, pacing, leaving the den).
6. **Report Mortalities and Serious Injuries Immediately.** If any special status mammal species are found dead or injured during any project-related activities, the project owner or Designated Biologist shall immediately notify the CPM and CDFW and shall provide written notification to CPM and CDFW within 48 hours. The CPM and CDFW shall review the activities resulting in mortality and determine if additional protective measures are required.
7. **Reporting.** A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions, and any observations or detections of sensitive mammals or their dens will be prepared and submitted to the CPM and CDFW. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of these

species found during the surveys or project activities will be provided during monthly, quarterly, and annual compliance reporting.

Verification: The project owner shall submit the pre-construction survey reports to the CPM and CDFW no more than 30 days after each survey effort has been completed. If required, the project owner shall submit a draft American Badger and Desert Kit Fox Eviction Plan to the CPM for review and approval and CDFW for review and comment. As final plan shall be submitted no less than 7 days prior to implementation.

BIO-23 Mohave Ground Squirrel Avoidance and Minimization Measures. The Designated Biologist and/or Biological Monitor(s) shall conduct pre-construction surveys for Mohave ground squirrel prior to the start of any site mobilization or other ground-disturbing activities, if those activities begin after or concurrently with the 2026 survey season for Mohave ground squirrel. Surveys shall be conducted by qualified biologists approved by the CPM, in coordination with CDFW, pursuant to **BIO-1** and/or **BIO-3**. These measures shall be included in the BRMIMP and implemented.

1. **Pre-Construction Surveys.** To confirm non-occupancy status of the project site, the Designated Biologist(s) and/or Biological Monitor(s) shall conduct camera or live trapping prior to site mobilization, including any ground-disturbing or vegetation removal activities that will occur in suitable habitat. Surveys shall follow protocols approved by the CPM in coordination with CDFW. The Designated Biologist and/or Biological Monitor(s) shall conduct trapping for the Willow Rock site, P1 north and south, P2 and the VH property or a representative site mutually agreed upon by the CPM, in coordination with the CDFW. Surveys shall encompass work areas and a 50-foot buffer, unless approved by the CPM. Any observations shall be recorded using a precision GPS unit and included on maps submitted to the CPM.
2. **No Detection.** If surveys are negative, the site will be considered not occupied and construction may proceed upon approval by the CPM. No additional surveys would be required for the duration of construction unless a period of one year or more passes prior to any ground-disturbing activities. Additional follow-up surveys shall be required if periods of construction inactivity exceeds more than one year in any given area.
3. **If Detected.** If Mohave ground squirrels are detected a 300-foot non-disturbance buffer shall be established around the detection site where no construction activities may occur. This non-disturbance buffer shall remain in place until the CPM and CDFW have been consulted and have provided direction on appropriate next steps.

4. **Notification of Detection.** The project owner or Designated Biologist shall notify the CPM and CDFW within 24 hours of any Mohave ground squirrel detected during the surveys. The report shall include the number of animals detected, photographs (if available), and the location of the detection. Upon receiving notification, the CPM and CDFW will provide guidance for further action as appropriate to the species.
5. **Supplemental Mitigation for Mohave Ground Squirrel.** If Mohave ground squirrels are detected and an incidental take authorization is necessary and if the issuance of take authorization will not jeopardize the species persistence in the region, standard Mohave Ground Squirrel incidental take permit conditions to minimize and fully mitigate impacts shall be required as approved by the CPM after consultation with CDFW. These standard measures, as refined by the CPM based on the facts of the situation, may include:
 - (1) Acquisition of permanent habitat compensation lands, calculated on the importance of the habitat in the project area and standard CDFW protocols;
 - (2) Burrow excavation and avoidance measures;
 - (3) Establishment of avoidance zones;
 - (4) Worker environmental awareness training;
 - (5) Monthly Compliance Reports; and
 - (6) Any other measures as determined by the CPM in consultation with CDFW.
6. **Reporting.** A report documenting survey results, including surveyor name(s), date(s) of survey, location (with maps), weather conditions, and any observations or detections of Mohave ground squirrels shall be prepared and submitted to the CPM and CDFW. In addition, a monitoring report that includes the location, description, and duration of the activities, any observations or detections of the species found during the surveys or project activities shall be provided during monthly and annual compliance reporting.

Verification: The project owner shall submit survey protocols no less than 45 days prior to conducting the surveys and/or site mobilization whichever comes first to the CPM for review and approval and CDFW for review and comment. The project owner shall submit the pre-construction survey reports to the CPM and CDFW no more than 21 days after the survey effort has been completed.

BIO-24 Lake and Streambed Equivalency Conditions. The project owner shall implement the following measures to avoid, minimize and mitigate for potential direct and indirect impacts to jurisdictional waters of the state and to satisfy the requirements of California Fish and Game Code, sections 1600 through 1607:

1. **Copies of Requirements, Stop Work Authority:** The project owner shall provide a copy of the Streambed Impact Minimization and Compensation Measures identified in this Condition of Certification and any other water related permit conditions to all contractors, subcontractors, and the project owner's project supervisors. This includes copies of the Waste Discharge Requirement (WDR) required by **WATER-1**. Copies shall be maintained at each work site and be readily available during periods of active work and must be presented to any the CPM or CDFW upon demand. The CPM reserves the right to issue a stop work order after giving notice to the project owner, if the CPM, in consultation with CDFW, determines that the project owner is not in compliance with any of the requirements of this condition, including but not limited to the existence of any of the following:
 - a. The information provided by the project owner regarding streambed alteration is incomplete or inaccurate;
 - b. New information becomes available that was not known to the CPM or the CDFW at the time of project certification; or
 - c. The project or project activities as approved in the Final Commission Decision have changed.
2. **Provide Maps of Proposed Disturbance Areas.** The project owner shall provide detailed maps of all proposed temporary work areas that have the potential to result in temporary or permanent impacts to any jurisdictional feature. This includes providing maps of work areas around each of the generation tie-line poles, staging areas, pull and tensioning sites, or other work areas. Maps, at an approved scale of all proposed temporary and permanent work areas shall be provided to the CPM and CDFW prior to any site mobilization. At the conclusion of construction, the project owner shall provide a true-up of any jurisdictional features that were subject to temporary or permanent impacts.
3. **General Species Protection Measures.** Species specific protection measures including surveys and monitoring are included in separate

Conditions of Certification. General protective conditions applicable to all species are identified below.

4. **Best Management Practices:** The project owner shall comply with the following conditions to protect drainages near the project disturbance area:
 - a. **No In-Water Work.** The project owner shall not operate vehicles or equipment in ponded or flowing water except as described in this condition.
 - b. **Stream Diversion.** When work in a flowing stream is unavoidable, stream flow shall be diverted around or through the work area during construction operations. Any proposed Stream Diversion Plan shall be submitted to the CPM for review and approval, and the CDFW for review and comment.
 - c. **Diversion Method.** Stream flow shall be diverted using gravity flow through temporary culverts/pipes or pumped around the work site with the use of hoses. Any alternative methods shall be included in the Stream Diversion Plan submitted to the CPM under Item 5b.
 - d. **Work in Dry Weather.** The National Weather Service 72-hr forecast for the project area shall be monitored prior to work proposed in or near drainages. Project activities within drainages shall be restricted if the forecast predicts a 60% chance or more of a greater than ¼-inch of precipitation event within a 24-hour period, unless otherwise approved by the CPM, in coordination with CDFW. Ground-disturbing project activities in drainages shall cease during these events and resume only if the site is not saturated or does not contain ponded or flowing water.
 - e. **Moving Equipment.** When any activity requires moving of equipment across a flowing drainage, such operations shall be conducted without substantially increasing stream turbidity. Vehicles driven across drainages when water is present shall be completely clean of petroleum residue and water levels shall be below the vehicles' axels.
 - f. **Materials.** Rock, gravel, and/or other materials shall not be taken from the bed, channel, or bank of any river, lake, or stream.
 - g. **Temporary Fill.** All temporary fills shall be constructed of pre-approved, non-erodible materials and fill areas shall have a liner

between the bottom of the fill and the river, lake, or stream sediments. Following completion of project activities, all temporary fill material shall be removed and the disturbed portions of the bed, channel, and bank shall be returned to previous contours. Minor amounts of fill material that have sunk into the sediment below the natural channel bottom may remain, but only if there is no accretion in bed or channel elevation above the original contour.

- h. **Bank Stabilization.** Suitable, non-erodible materials that will withstand wash out shall be used for bank stabilization. Only clean material such as rock riprap free of trash, debris and deleterious material shall be used as bank stabilization, and placement shall extend above the normal high-water mark. Asphalt and broken concrete are not acceptable materials.
- i. **Operating Equipment and Vehicle Leaks.** Any equipment or vehicles driven and/or operated within or adjacent to any lake or stream shall be checked and maintained daily to prevent leaks of materials that could be deleterious to aquatic and terrestrial life or riparian habitat.
- j. **Clean Equipment Prior to Entering Stream.** All heavy equipment that will be entering the live stream shall be cleaned of materials deleterious to aquatic life including oil, grease, hydraulic fluid, soil and other debris prior to entering the water.
- k. **Stationary Equipment Leaks.** Stationary equipment such as motors, pumps, generators, and welders, within or adjacent to any lake or stream shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill/leak.
- l. **Equipment Maintenance and Fueling.** No equipment maintenance or fueling shall be done within or within 50 ft of any stream channel or lake margin where petroleum products or other pollutants from the equipment may enter these areas.
- m. **Equipment Storage.** Staging and storage areas for equipment, materials, fuels, lubricants and solvents, shall be located outside of a stream channel and banks and contained in a leakproof berm or other secondary containment.
- n. **Staging and Storage Areas.** Staging and storage areas for equipment, materials, fuels, lubricants, and solvents shall be located more than fifty (50) feet from a stream channel and

banks. All equipment and fuel stored on site shall be bermed to contain any spilled material and shall be protected from rain. Berms shall consist of plastic covered dirt or sandbags.

- o. **Stockpiled Materials.** Building materials and/or construction equipment shall not be stockpiled or stored where they may be washed into the water or cover aquatic or riparian vegetation. Stockpiles shall be covered when measurable rain is forecasted.
- p. **Excavation Equipment.** Prior to working within a stream, all equipment shall be closely examined for oil and fuel discharges. Any contaminants shall be cleaned prior to any work within a streambed and shall be maintained daily.
- q. **Remove Structures.** Project-related structures and associated materials not designed to withstand high water flows or placed in seasonally dry portions of a stream or lake that could be washed downstream or could be deleterious to aquatic life, wildlife, or riparian habitat shall be moved to areas above high water before such flows occur.
- r. **Location of Spoil Sites.** Spoil sites shall not be within a lake or stream or locations that may be subjected to high storm flows, where spoils may be washed back into a lake or stream, or where it may impact streambed habitat, aquatic or riparian vegetation.
- s. **Removal of Debris, Materials and Rubbish.** All project generated debris, building materials and rubbish shall be removed and properly disposed of in a legal manner, from a stream and from areas within twenty-five (25) feet of the high-water mark where such materials could be washed into a stream following completion of project activities.
- t. **Wash Water.** Water containing mud, silt, or other pollutants from equipment washing or other activities, shall not be allowed to enter a lake or flowing stream or placed in locations that may be subjected to high storm flows.

5. Hazardous Materials and Concrete

- a. **Hazardous Substances.** Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, resulting from project-related activities, shall be prevented from contaminating the soil and/or entering the waters of the state.

- b. **Toxic Materials.** Any hazardous or toxic materials that could be deleterious to aquatic life that could be washed into a stream, or its tributaries shall be contained in watertight containers or removed from the project site.
- c. **Hazardous Materials.** Debris, soil, silt, bark, slash, sawdust, rubbish, creosote-treated wood, raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, wildlife, or riparian habitat resulting from the project-related activities shall be prevented from contaminating the soil and/or entering the waters of the state.
- d. **Sacked Concrete.** The use of sacked concrete, asphalt pieces or asphalt containing pavement grindings within twenty (20) feet of the top-of-bank of a stream /outside of the ordinary high-water mark is prohibited, or where it may enter the channel.
- e. **Concrete – Primary Containment.** Wet concrete shall be contained and prevented from entering any lake or stream unless as authorized by this Condition of Certification. No concrete shall be poured within the high flow line if the 10-day weather forecast indicates any chance of rain above ¼" in a 24-hour period, unless approved by the CPM, in coordination with CDFW.
- f. **Concrete – Biological Monitor.** At all times when pouring or working with wet concrete a Designated Biologist and/or Biological Monitor shall be present to inspect containment structures and ensure that no concrete or other debris enters into a lake or stream outside of those structures.
- g. **Concrete – Secondary Containment.** Secondary containment shall be installed between the primary containment structures (i.e. headwall form, roadway forms) and the lake or stream to prevent wet concrete from entering into the lake or stream upon failure or leak of primary structures. No concrete shall be poured within the high flow line if the 10-day weather forecast indicates any chance of rain above ¼" in a 24-hour period, unless approved by the CPM, in coordination with CDFW.
- h. **Creosote-Treated Wood.** Creosote-treated wood products for decking shall not be used in waters of the state. Alternatives that may be appropriate include steel, concrete, plastic, or wood products treated with preservatives that do not contain creosote or other materials that are deleterious to aquatic life.

- i. **Spill Containment.** All activities performed in or near a stream shall have absorbent materials designated for spill containment and cleanup activities on-site for use in an accidental spill. In the event of a spill the project owner shall immediately notify the CPM, CDFW, Lahontan RWQCB, and the California Emergency Management Agency at 1-800-852-7550, or most current phone number, and immediately initiate the cleanup activities.
- 6. **Crossings.** The installation of bridges, culverts, or other structures shall be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts shall be placed at or below stream channel grade.
 - a. **Sized to Accommodate Storm Flows.** If proposed, all crossing sites shall be designed to accommodate the estimated 100-year flow including sediment load and debris without diverting and shall be installed in accordance with design plans and diagrams provided to the CPM for review and approval. Culvert sizing factors shall include culvert capacity loss from placement of the culvert pipe bottom below stream bed grade, transportation of bed load, and the abundance and size of woody debris likely to be introduced to a stream upstream of the culvert crossing, in addition to the 100-year flow.
 - b. **Alignment.** If used, all crossing structures shall be properly aligned within a stream and shall be otherwise designed and sized to assure resistance to washout and erosion of a streambed, stream banks, and/or fill.
 - c. **Allow Passage of Wildlife.** Installation of bridges, culverts or other structures shall be such that water flow during storm events is not impaired and upstream or downstream passage of wildlife is assured at all times. Ensure that any debris is cleared if the structure is in place.
 - d. **Single Pipes Only.** Multiple-pipe crossings shall not be constructed or reconstructed within the bank full channel, unless approved by the CPM in coordination with the CDFW. Completed culvert pipe installations shall result in water flow during rainfall events that is neither impeded nor impounded at the pipe inlet, nor accelerated downstream of the crossing structure.

7. **Vegetation**

- a. **Demarcation of Work Areas.** All work areas shall be adequately marked to prohibit unauthorized and unnecessary disturbance to vegetation. All areas shall be mapped and identified on plans for all project personnel.
- b. **Vegetation Disposal.** All native vegetation not proposed for salvage (i.e., cuttings) shall be chipped and left on-site in a manner optimizing erosion control purposes in accordance with the recommendations of an erosion control specialist. All non-native vegetation shall be removed and disposed of at an approved disposal location according to state and local laws and ordinances.
- c. **Hand tools Near Mature Trees.** Wherever possible, hand tools shall be used (i.e. chainsaws, clippers, brush whackers, etc.) to remove vegetation near mature native trees as to not damage trees or disturb the substrate.
- d. **Remove Debris from Stream Zones.** All removed vegetation and debris shall be moved outside the normal high-water mark prior to inundation by water. All removed vegetation and debris shall be disposed of according to state and local laws and ordinances.
- e. **Minimum Removal.** Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations. The disturbed portions of any stream channel or lake margin within the high-water mark of a stream or lake shall be restored to as near their original condition as possible.
- f. **Stabilize Exposed Areas.** All exposed/disturbed areas within the project site shall be stabilized to the greatest extent possible.

8. Herbicide Use

- a. **Herbicide/Pesticide Use Permitted in Accordance with Law.** All herbicide use conditions for mixing, application and clean-up shall conform to all applicable federal, state, and local regulations. Nothing in this condition represents an herbicide/pesticide use recommendation that allows for an action that conflicts with herbicide/pesticide use regulations.
- b. **Licensed Applicators Only.** Any application of herbicide shall be overseen by a licensed applicator in accordance with all applicable, federal, state, local laws, and/or guidelines.

- c. **Prevent Overspray of Herbicides/Pesticide.** Conduct all treatment activities in a manner to minimize overspray of herbicide on to adjacent native vegetation and where there is no potential of contamination to a river, stream or waters of the state.
 - d. **Herbicide/Pesticide Mixing.** Ensure that herbicide-mixing sites are located in areas devoid of vegetation, and where there is no potential of a spill reaching a vegetated area or a river, stream or waters of the state.
 - e. **Avoid Treatment in Sensitive Areas.** Areas identified as sensitive by the Designated Biologist or with suspected occupied nesting or denning habitats shall not be treated with pesticides or herbicides. Environmental damage caused by the application or use of substances that prove harmful to fish and aquatic wildlife per Fish and Game Code, section 5650 shall not occur.
9. **Invasive Species Control and Special Status Species Protection Measures** have been included in separate Conditions of Certification, see **BIO-10** (Invasive Species Management Plan) and **BIO-7** (General Impact Avoidance and Minimization Measures).
10. **Mitigation for Permanent and Temporary Impacts to Jurisdictional Features**
- a. **Acquire Off-Site Jurisdictional Features.** There are no permanent impacts to jurisdictional features and no off-site mitigation is proposed. However, if there are unanticipated temporary or permanent impacts to jurisdictional features the project owner shall provide verification to the CPM that the lands acquired under **BIO-14** support a minimum of 3:1 ratio for any permanent impacts and 1:1 for temporary impacts to jurisdictional features.

Verification: The project owner shall provide the updated Jurisdictional Report that clearly delineates all proposed permanent and temporary impacts, the proposed engineering drawings for each crossing type, and the hydrologic studies used to inform the engineering design to the CPM for review and approval no less than 45 days prior to site mobilization. The project owner shall provide Final Reports and Plans to the CPM and the CDFW no later than 14 days prior to the installation of any engineered crossing, bridge, or new culvert.

Maps of all proposed temporary and permanent work areas shall be provided to the CPM no less than 30 days prior to any site mobilization. At the conclusion of construction, the

project owner shall provide a true-up of any jurisdictional features that were subject to temporary or permanent impacts the CPM no more than 30 days following the cessation of construction along the generation tie- line in the Construction Termination Report.

Soil and Water Resources Conditions of Certification

WATER-1 Construction Drainage, Erosion And Sedimentation Control Plan.

Prior to site mobilization, the Project owner shall obtain approval from the Compliance Project Manager (CPM) of the Drainage Erosion and Sedimentation Control Plan (DESCP) for managing stormwater during Project construction and operations. The DESCP must ensure proper protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, include provisions for sediment and stormwater retention from both the main facility and transmission right of way, and identify all monitoring and maintenance activities. The DESCP shall contain, at minimum, the elements presented below that outline site management activities and erosion and sediment-control BMPs to be implemented during site mobilization, excavation, construction, and post construction (operating) activities.

A. Vicinity Map – A map(s), at a minimum scale 1 inch=500 feet, shall be provided indicating the location of all Project elements (construction sites, laydown area, pipelines) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

B. Site Delineation – All areas subject to soil disturbance for the proposed Project (Project phases, laydown area, all linear facilities, landscaping areas, and any other Project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

C. Watercourses and Critical Areas – The DESCP shall show the location of all nearby watercourses including swales, storm drains, and drainage ditches. It shall indicate the proximity of those features to the proposed Project construction, laydown, and landscape areas and all transmission and pipeline construction corridors.

D. Drainage Map – The DESCP shall provide a topographic site map(s), at a minimum scale of 1 inch=200 feet, showing existing, interim, and proposed drainage swales and drainage systems and drainage-area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off site for a minimum distance of 100 feet.

E. Drainage of Project Site Narrative – The DESCPC shall include a narrative of the drainage measures necessary to protect the site and potentially affected soil and water resources within the drainage downstream of the site. The narrative shall include the summary pages from the hydraulic analysis prepared by a professional engineer and erosion control specialist. The narrative shall state the watershed size(s) in acres that was used in the calculation of drainage features.

F. Clearing and Grading Plans – The DESCPC shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections, or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography shall be illustrated by tying in proposed contours with existing topography.

G. Clearing and Grading Narrative – The DESCPC shall include a table with the estimated quantities of material excavated or filled for the site and all Project elements (Project site, laydown area, transmission and pipeline corridors, roadways, and bridges) whether such excavation or fill is temporary or permanent, and the amount of such material to be imported or exported.

H. Soil Wind and Water Erosion Control - The plan shall address exposed soil treatments to be used during construction and operation of the proposed Project for both road and non-road surfaces including specifically identifying all chemical based dust palliatives, soil bonding, and weighting agents appropriate for use at the proposed Project site that would not cause adverse effects to vegetation. BMPs shall include measures designed to prevent wind and water erosion including application of chemical dust palliatives after rough grading to limit water use. All dust palliatives, soil binders, and weighting agents shall be approved by the CPM prior to use.

I. Best Management Practices Plan – The DESCPC shall identify on the topographic site map(s) the location of the site specific BMPs to be employed during each phase of construction (initial grading, Project element excavation and construction, and final grading/stabilization). BMPs shall include measures designed to control dust, stabilize construction access roads and entrances, and control storm water runoff and sediment transport.

J. Best Management Practices Narrative – The DESCPC shall show the location (as identified in (I) above), timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading, during all Project element (site, pipelines) excavations and construction, final

grading/stabilization, and operation. Separate BMP implementation schedules shall be provided for each Project element for each phase of construction. The maintenance schedule shall include post-construction maintenance of structural-control BMPs, or a statement provided about when such information would be available.

K. Project Schedule – The DESCP shall identify on the topographic site map the location of the site-specific BMPs to be employed during each phase of construction (initial grading, Project element construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each Project element for each phase of construction.

L. Erosion Control Drawings – The erosion-control drawings and narrative shall be designed, stamped and sealed by a professional engineer or erosion control specialist.

M. Agency Comments – The DESCP shall include copies of recommendations, conditions, and provisions from the California Department of Fish and Wildlife (CDFW) and the Lahontan Regional Water Quality Control Board (LRWQCB).

N. Monitoring Plan – Monitoring activities shall include routine measurement of the volume of accumulated sediment in the onsite drainage ditches, and storm water diversions.

Verification: No later than thirty (30) days prior to start of site mobilization, the Project owner shall submit a copy of the final DESCP to the CPM for review and to Kern County and the Lahontan RWQCB if required. The CPM shall consider comments if received by the county and RWQCB before approval of the DESCP. The DESCP shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and relevant portions of the DESCP shall clearly show approval by the chief building official. The Project owner shall provide in the Monthly Compliance Report with a narrative on the effectiveness of the drainage, erosion, and sediment-control measures and the results of monitoring and maintenance activities. Once operational, the Project owner shall update and maintain the DESCP for the life of the Project and shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

WATER-2 Waste Discharge Requirements. The project owner shall comply with the Waste Discharge Requirements (WDRs) established in Attachment A to these Conditions of Certification. These requirements relate to discharges, or potential discharges, of waste that could affect the quality of waters of the state, and were developed in consultation with the State Water Resources Control Board and/or the applicable California Regional Water Quality Control Board (hereafter "Water Boards"). The WDRs established in

Attachment A serve as if they were prescribed under Water Code section 13263 by the Water Boards. These requirements are enforceable by both the CEC and the Water Boards. The Water Boards are authorized to verify compliance of these WDRs, including conducting investigations and inspections and requiring technical and monitoring reports. The Water Boards are also authorized, in coordination with the CEC, to enforce the WDRs pursuant but not limited to Water Code sections 13300, 13301, 13304, and 13350. The CEC and the Water Boards shall confer with each other and coordinate, as needed, in the enforcement of the requirements, consistent with Public Resources Code section 25532. The project owner shall pay the annual waste discharge permit fee associated with the Willow Rock Energy Storage Center to the Water Boards. The project owner shall make payments to the State Water Resources Control Board, based upon a fee schedule in California Code of Regulations, Title 23, section 2200 for a Discharge to Land with a Threat to Water Quality Rating of 2 and Complexity Rating of C.

Verification: At least sixty (60) days prior to construction, the project owner shall submit to Lahontan RWQCB all necessary information and applicable fees, submitting copies of all application submittals to the CPM. At least thirty (30) days prior to construction of the gen-tie line, the project owner shall submit to the CPM and Lahontan RWQCB for review and approval all plans to control the potential impacts to ephemeral streams from fill and excavation activities associated with construction of the gen-tie line. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence with the SWRCB or the Lahontan RWQCB regarding this activity. The project owner shall notify the CPM in writing of any violations and include these in the Annual Compliance Report. Any monitoring documentation associated with the SWRCB Order shall be included in the Annual Compliance Report.

WATER-3 Offsite Wastewater Disposal. The project owner proposes that industrial related wastewater would be contained in tanks and periodically disposed off-site by a third party vendor during project operation (CLEG 2025). If the project owner does not elect to treat sanitary wastewater using an onsite leach-line septic system, this wastewater shall also be disposed offsite. To verify operational wastewater streams are to be disposed in accordance with Federal, State and local regulations, the project owner shall document all aspects of offsite wastewater disposal.

Verification: No later than 30 days prior to project operation, the project owner shall provide a copy of the service agreement with the vendor selected for offsite industrial wastewater disposal, and/or sanitary wastewater disposal if applicable. Within ten (10) days of offsite shipment, the project owner shall submit to the CPM any non-hazardous

manifest, bill-of-lading, or any other shipping documentation associated with offsite wastewater disposal. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence with the third party offsite wastewater disposal vendor, and any agencies or interested parties regarding offsite wastewater disposal. The project owner shall notify the CPM in writing of any violations and include these in the annual compliance report. The project owner shall include all offsite wastewater disposal shipping documentation in the annual compliance report.

WATER-4 Onsite Septic System Permit Requirements. If the project owner elects to treat sanitary wastewater using an onsite leach-line septic system, an on-site septic system designed for site-specific soil and percolation conditions shall be installed. The septic system design shall comply with the SWRCB's onsite wastewater treatment system (OWTS) policy (SWRCB 2023) and Kern County Environmental Health Division (KCEPH) OWTS ordinance Chapter 8.62. The project owner shall operate the septic system following an operations and maintenance manual prepared by a qualified professional. If the site conditions are unfavorable to support a conventional leach field system, the project owner shall work with the KCEPH and the CPM to evaluate a viable alternative.

Verification: No later than 90 days prior to project operation, the project owner shall submit to the CPM evidence that the septic system design has been reviewed by the KCEPH and the approval of the chief building official (CBO). No later than 60 days prior to project operation, the project owner shall submit the operations and maintenance manual to the KCEPH for review and comment. No later than 30 days prior to project operation, the project owner shall submit the operations and maintenance manual to the CPM for review and approval. The submittal shall include copies of any agency comments the project owner has received. The wastewater system shall be monitored following either the general standards adopted in SWRCB's OWTS regulations or the procedures outlined in the CPM-approved operations and maintenance manual. Any testing results or correspondence exchanged between the project owner and the KCEPH, or any other state or local agency, during operations shall be provided to the CPM in the annual compliance report.

WATER-5 Jurisdictional Dam Construction Requirements. The CEC has determined that the outer embankment of the hydrostatic compensation reservoir (HC-reservoir) meets the definition of a jurisdictional dam per California Water Code (Water Code) sections 6002 and 6003. The CEC has further determined that the project owner is an "owner" under Water Code section 6005. Therefore, the HC-reservoir embankment is subject to the review and approval of all design and specifications that would be administered by the Department of Water Resources Division of Safety of Dams (DWR-DSOD).

As it relates to this component of the project (HC-reservoir embankment), the project owner shall comply with the requirements set forth in Division 3, Part 1 of the Water Code and California Code of Regulations, Title 23, Division 2, Chapter 1 (collectively referred to as "Dam Safety Program Requirements") and any design specifications directed by DWR-DSOD which will administer the Dam Safety Program Requirements on behalf of the CEC. The project owner shall comply with any future changes to applicable statutes or regulations of the Dam Safety Program Requirements.

To facilitate the project and project owner's compliance with the Dam Safety Program Requirements, the following requirements are identified. These Dam Safety Program Requirements are identified to provide information and do not limit or otherwise impact the project and project owner's obligation to comply with all Dam Safety Program Requirements:

1. Construction, enlargement, alteration, repair, modification, and removal of dams and reservoirs are subject to the requirements in Division 3, Part 1, Chapter 5 of the California Water Code and California Code of Regulations, Title 23, Division 2, Chapter 1.
2. Construction inspection requirements, final approval, and post-construction documentation requirements are set forth in Division 3, Part 1, Chapter 7 of the California Water Code.
3. Per **WATER-6**, the DWR-DSOD shall serve as DCBO to the CEC as the Chief Building Official, for the hydrostatic compensating reservoir embankment subject to the design, construction, and operational requirements of the Dam Safety Program. The project owner shall provide to the CPM and DWR-DSOD all pre-construction, construction, operation, and maintenance documentation related to the embankment as such documentation may be further described in a memorandum of understanding between the CEC and DWR-DSOD to facilitate the design review, construction monitoring, safety inspections, and other work associated with the construction and operations of the dam as part of the Willow Rock Energy Storage Center project.
4. The project owner shall not, through action or inaction, impound water in the project's dam or reservoir until the CPM in consultation with DWR-DSOD has determined that the dam or reservoir is safe to impound water.
5. The project owner shall pay the DWR-DSOD any application and annual fees in accordance with the Dam Safety Program Requirements to facilitate the DWR-DSOD's ability to perform design review, construction monitoring, safety inspections, and other work associated with the construction and operations of the dam. In lieu of

the application fee, the Applicant can negotiate a different fee structure or other reimbursement mechanism with DWR-DSOD.

6. This project and project owner shall be subject to the requirements in Water Code section 6102.5, which addresses periodic inspections, and dam owner obligations to perform maintenance, provide information, and fully operate any critical outlet and spillway control features as determined by DWR-DSOD and approved by the CPM.
7. The project and project owner shall comply with the inundation map and emergency action plan requirements as provided in Division 3, Part 1, Chapter 4, Article 6 of the California Water Code and California Code of Regulations, Title 23, Division 2, Chapter 1.
8. The project and project owner shall be subject to the enforcement by the CEC for compliance with the provisions set forth in Division 3, Part 1, Chapter 8 of the California Water Code and California Code of Regulations, Title 23, Division 2, Chapter 1.

The project owner shall obtain CEC approval in consultation with DWR-DSOD of dam plans and specifications prior to commencing construction of the HC-reservoir embankment in accordance with Water Code section 6200. The project owner shall provide the CEC in consultation with DWR-DSOD with information to achieve the following milestones of the design approval process:

1. Project information, geology/geotechnical reports and other project related data if data gaps or concerns are identified by the CPM in consultation with DWR-DSOD staff.
2. Design report, criteria and guidelines for dam, spillway, and emergency outlet.
3. 30% Design plans/concept.
4. 60% Design plans/specifications.
5. 90% Design plans/specifications.
6. 100% Design plans/specifications and draft inundation map.

Following the conclusion of milestone 6, the CPM in consultation with DWR-DSOD shall approve the design application and conditions of the HC-reservoir after it is demonstrated to the satisfaction of DWR-DSOD that all Water Code provisions and applicable engineering standards applicable to the hydrostatic compensating reservoir embankment are met.

Construction of the HC-reservoir embankment shall not commence prior to CPM approval and must commence within one year of CPM approval (Water Code section 6265).

The inundation map approved by the CEC in consultation with DWR-DSOD, would be included with a draft emergency action plan (EAP) submitted to the California Office of Emergency Services (CalOES) prior to the reservoir being certified.

Any change to the design, construction, or operation of the HC-reservoir embankment shall be requested by the project owner in writing to the CPM for approval, in consultation with the DWR-DSOD, prior to the initiation of any construction and/or operation changes. Such changes may be approved by the CPM after consultation with the DWR-DSOD if the changes do not result in a new significant impact.

Consistent with DSOD's existing statutory and regulatory enforcement authority regarding the design, construction, and operations of the HC-reservoir embankment, the CEC and DWR-DSOD will confer with each other and coordinate, as needed, in the enforcement of the requirements.

Verification: Any documents submitted to the DWR-DSOD including but not limited to application materials, geotechnical reports, design drawings, pictures, soil studies, or hazards analysis, shall be provided contemporaneously to the CPM and DWR-DSOD for review.

The project owner shall provide evidence to the CPM of payment to DWR-DSOD of all fees required under the Dam Safety Program Requirements within 10 days of payment or any alternate funding agreement executed between the project owner and DWR-DSOD.

WATER-6 Delegation to Department of Water Resources Division of Safety of Dams. The CEC delegates compliance and design verification for the dam safety related construction inspection of the HC-reservoir embankment and related dam safety components approved by the CEC, to the DWR-DSOD, with ongoing guidance from the CPM. Such delegation will be memorialized in a memorandum of understanding between the CEC and DWR-DSOD to detail the responsibilities of the agencies and project owner pursuant to **WATER-5, WATER-6,** and the Dam Safety Program.

Compliance and design verification for the hydrostatic compensation reservoir system is delegated to the DWR-DSOD inspection team with guidance from the CPM, who will be communicating approvals to the project owner.

Before submitting the initial engineering designs for the HC-reservoir, the project owner shall furnish the CPM and the DWR-DSOD with a schedule of design submittals, master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for

major structures, systems, and equipment. The schedule shall contain the date of each submittal to the CPM and DWR-DSOD.

To facilitate audits by CEC staff, the project owner shall provide specific packages as described in the paragraph above to the CPM upon request.

During project operations, the project owner shall allow and facilitate DWR-DSOD regular inspections of the HC-reservoir embankment.

The project owner shall provide to the CPM and DWR-DSOD all pre-construction, construction, operation, and maintenance documentation related to the embankment as such documentation may be further described in the memorandum of understanding between the CEC and DWR-DSOD to facilitate the design review, construction monitoring, safety inspections, and other work associated with the construction and operations of the Willow Rock hydrostatic compensating reservoir embankment.

Verification: The project owner shall provide the schedule to the DWR-DSOD and CPM at least 60 days (or an alternative time frame approved by the CPM) prior to the start of construction of the HC-reservoir.

These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **WATER-6.**

Major structures and equipment shall not be added to or deleted from the list without CPM and DWR-DSOD approval. The project owner shall provide schedule updates in the monthly compliance report (MCR).

Upon completion of the HC-reservoir embankment construction, the project owner shall request approval from the CPM to impound water.

Filling of the HC-reservoir shall not commence until approval by the CPM in consultation with the DWR-DSOD.

The project owner shall submit to the CPM all correspondence and results of DWR-DSOD regular inspections during project operations.

WATER-7 Water Use and Reporting. Supply of fresh water for the project construction shall be provided by the Antelope Valley-East Kern Water Agency (AVEK). The project owner shall enter into a water agreement with AVEK. Total water use during the 5-year construction period shall not exceed 1,400 acre-feet (AF). Project operation water use shall not exceed 4 acre-feet per year (AFY). The project owner shall record daily water use for the project's construction and operation. The project owner shall comply with the water use limits and reporting requirements described below.

Verification: Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence with the AVEK concerning construction and operations water supply. This shall include the water agreement with AVEK. During project construction, the MCR shall include a summary of monthly water use. The project's annual compliance report shall include a monthly and annual summary of water use identifying construction or operations and water source.

Cultural and Tribal Cultural Resources Conditions of Certification

CUL/TRI-1 APPOINTMENT AND QUALIFICATIONS OF CULTURAL RESOURCES PERSONNEL

CULTURAL RESOURCE SPECIALIST The project owner shall assign a Cultural Resource Specialist (CRS) to the project. The project owner may elect to assign one or more alternate CRSs as well. The project owner shall submit the resumes of the proposed CRS and Alternate CRS(s), with at least three references and their contact information, to the CEC's Compliance Project Manager (CPM) for review and approval.

The CRS and Alternate CRS(s) shall have training and background that conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS and Alternate CRS(s) shall have the following qualifications:

A background in anthropology, archaeology, history, architectural history, or a related field, and

- At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;
- At least three years of field experience in California; and
- At least three years of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgeably make recommendations regarding the significance of cultural resources.

The project owner may replace the CRS by submitting the required resume, references and contact information of the proposed replacement CRS to the CPM.

The CRS shall manage all cultural resource monitoring, mitigation, curation, and reporting activities, and any pre-construction cultural resource activities, unless management of these is otherwise provided for in accordance with the **Cultural and Tribal Cultural Resources** Conditions of Certification. The CRS shall serve as the primary point of contact on all cultural resource matters for the CEC. The CRS shall retain Native American Monitors and may elect to obtain the services of Cultural Resource Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the CEQA significance of any cultural or tribal cultural resources that are newly discovered or that may be affected in an unanticipated manner. After all ground disturbances are completed and the CRS has fulfilled all responsibilities specified in these **Cultural and Tribal Cultural Resources** Conditions of Certification, the project owner may discharge the CRS, after receiving approval from the CPM.

CULTURAL RESOURCE MONITORS The CRS may assign CRMs. CRMs shall have the following qualifications:

- B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field; and three years of archaeological field experience in California; or
- A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and three years of archaeological field experience in California; or
- Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field, and three years of archaeological field experience in California.

NATIVE AMERICAN MONITORS Preference in selecting Native American Monitors shall be given to members or representatives of the Yuhaaviatam of San Manuel Nation, Tejon Indian Tribe, and Kern Valley Indian Community. Monitors should have:

- Traditional ties to the area being monitored
- Knowledge of local Native American village sites and habitation patterns

- Knowledge and understanding of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to effectively communicate the requirements of Health and Safety Code, section 7050.5 and Public Resources Code, section 5097.9 et seq.
- Ability to work with law enforcement officials and the Native American Heritage Commission (NAHC) to ensure the return of all associated grave goods taken from a Native American grave during excavation
- Ability to travel to project sites within traditional tribal territory
- Knowledge and understanding of Title 14, California Code of Regulations, section 15064.5
- Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding California Environmental Quality Act (CEQA) mitigation provisions
- Ability to read a topographical map and be able to locate site and reburial locations for future inclusion in the NAHC's Sacred Lands Inventory
- Knowledge and understanding of archaeological practices, including the phases of archaeological investigation

CULTURAL RESOURCE TECHNICAL SPECIALISTS The resume(s) of any additional technical specialist(s) (e.g., geoarchaeologist, historical archaeologist, historian, architectural historian, or physical anthropologist), shall be submitted to the CPM for approval. The resume of each proposed specialist shall demonstrate that their training and background meet the U.S. Secretary of Interior's Professional Qualifications Standards for their specialty (if appropriate), as published in Title 36, Code of Federal Regulations, Part 61. The resumes of specialists shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. All specialists are under the supervision of the CRS.

Verification: To meet all time requirements set forth in the Conditions of Certification, the project owner shall submit the prospective CRS's and any Alternate CRS's

qualifications at least 45 days prior to the start of ground disturbance associated with site mobilization and construction.

The project owner may replace a CRS by submitting the required resume, references and contact information to the CPM at least 10 working days prior to the termination or release of the then-current CRS. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration.

At least 20 days prior to site mobilization, the CRS shall provide proof of qualifications for any anticipated CRMs and additional specialists for the project to the CPM.

Within 15 days of receiving from a California Native American tribe a request that Native American Monitors be employed, the project owner shall submit a copy of the request and a copy of a response letter to the group notifying them that Native American Monitors have been employed and identifying the Native American Monitors.

If efforts to obtain the services of qualified Native American Monitors are unsuccessful, the project owner shall inform the CPM of this situation in writing at least 30 days prior to the beginning of post-certification cultural resources field work or construction-related ground disturbance.

At least 5 days prior to additional CRMs or Native American Monitors beginning on-site duties during the project, the CRS shall review the qualifications of the proposed CRMs or Native American Monitors and send approval letters to the CPM, identifying the monitors and attesting to their qualifications. At least 10 days prior to any technical specialists beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval. At least 10 days prior to the start of construction-related ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.

No ground disturbances shall occur prior to CPM approval of the CRS and alternates unless such activities are specifically approved by the CPM.

CUL/TRI-2 INFORMATION TO BE PROVIDED TO THE CRS

Prior to the start of ground disturbance, the project owner shall provide the CRS with copies of the application for certification (AFC), data responses, confidential cultural resources reports, all supplements, the cultural and tribal cultural resources section from the CEC's Final Staff Assessment (FSA), and the **Cultural and Tribal Cultural Resources** Conditions of Certification from the CEC's Final Decision for the project, if the CRS does not already possess copies of these materials. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all

access roads, and all laydown areas. Maps shall include the appropriate United States Geological Survey quadrangles and a map at an appropriate scale (e.g., 1:24,000 and 1 inch = 200 feet, respectively) for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings unless such activities are specifically approved by the CPM. Maps shall include any cultural and tribal cultural resources, including any historic built environment resources, identified in the FSA's project area of analysis (PAA). If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

The project owner shall provide the documents described in the first paragraph of this condition to the new CRS if the approved CRS is terminated or resigns.

Verification: At least 15 days prior to the start of ground disturbance, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, and Final CEC Decision have been provided to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.

At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.

Weekly, during ground disturbance, a schedule of the next week's anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

If a new CRS is approved by the CPM as provided for in **CUL/TRI-1**, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, Final Commission Decision, and maps and drawings have been provided to the new CRS within 10 days of such approval.

CUL/TRI-3 CULTURAL AND TRIBAL RESOURCES MITIGATION AND MONITORING PLAN (CTRMMP)

Prior to the start of ground disturbance, the project owner shall submit the CTRMMP, as prepared by or under the direction of the CRS in coordination with the appropriate cultural resources representative(s) for the consulting tribes (Yuhaaviatam of San Manuel Nation, Tejon Indian Tribe, and Kern Valley Indian Community) choosing to participate in the development of the CTRMMP, to the CPM. Along with the draft CTRMMP and letters or statements of support of the CTRMMP from the consulting tribes, the applicant shall submit documentation demonstrating the project owner's efforts to develop the CTRMMP in coordination with the consulting tribes, describing efforts to engage the consulting tribes, and identifying the consulting tribes who collaborated with the project owner in the development of the CTRMMP. The project owner shall afford the consulting tribes the opportunity to provide letters or statements of support for the CTRMMP to accompany the project owner's submittal of the CTRMMP to the CPM for review and approval. Ground disturbance may be initiated only after approval of the CTRMMP by the CPM.

The CTRMMP shall follow the content and organization of the draft model CTRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CTRMMP. The CTRMMP shall identify measures to minimize potential impacts on cultural and tribal cultural resources. Implementation of the CTRMMP shall be the responsibility of the CRS and the project owner. Copies of the CTRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CTRMMP, unless such activities are specifically approved by the CPM. Portions of the CTRMMP that describe or map the location(s) of cultural and tribal cultural resources shall be designated as confidential. The CTRMMP shall include the following elements and measures.

- The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CTRMMP is intended as general guidance and

as an aid to the user in understanding the Conditions of Certification and their implementation. The Conditions of Certification, as written in the CEC Decision, shall supersede any summarization, description, or interpretation of the conditions in the CTRMMP. The **Cultural and Tribal Cultural Resources** Conditions of Certification from the CEC Decision are contained in **Appendix A.**"

- A proposed general research design that includes a discussion of cultural research questions and testable hypotheses specifically applicable to the project area, and a discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. The research design will specify that the preferred treatment strategy for any cultural or tribal cultural resource is avoidance. A specific mitigation plan shall be prepared for any unavoidable impacts to any historical resources, unique archaeological resources, or tribal cultural resources (as defined in the California Environmental Quality Act and determined by the CPM). Specific mitigation plans will be required for known historical resources within the Willow Rock facility and preferred gen-tie route (avoidance, capping, or archaeological data recovery), namely, WRESC-ZEV-MULTI-SITE-1, WRESC-ZEV-PRE-SITE-2, WRESC-ZEV-PRE-SITE-3, WRESC-P1-PRESITE-1, WRESC-PREF-HIST-SITE-3, P-15-007591, and P-15-014902. A prescriptive treatment plan may be included in the CTRMMP for limited data types. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the ground-disturbance and post-ground-disturbance analysis phases of the project.
- Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.
- A description of how Native American observers or monitors will be included, the procedures to be used for selecting them, and their roles and responsibilities (including monitoring of archaeological work).
- A statement regarding the disposition of artifacts that includes the identification of potential on-site reburial location(s) for Native

American archaeological materials collected because of project activities. Reburial shall not occur until all ground-disturbing activities associated with the project have been completed, all monitoring has ceased, cataloguing and recording of cultural resources have been completed, and final reports issued to the CPM, the California Historical Resources Information System (CHRIS), and consulting tribes. All Native American archaeological materials not subject to the provisions of Public Resources Code, sections 5097.98 *et seq.* are subject to a reburial agreement that shall be developed between the project owner and the consulting tribes. The reburial agreement shall be appended to the CTRMMP and outline the determined reburial process and location(s) and include provisions to protect the reburial area(s) from future impacts and to provide access to culturally affiliated California Native American descendants. The CTRMMP shall also include provisions to accommodate culturally appropriate treatment of Native American human remains and associated items that could be preferred by a designated most likely descendent, should Native American human remains be encountered. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to cultural or tribal cultural resources that are to be avoided during ground disturbance, construction, and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from project-related effects. A statement that all encountered cultural and tribal cultural resources over 50 years old shall be recorded on Department of Parks and Recreation (DPR) 523 forms and mapped and photographed. In addition, all archaeological materials retained during archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's (SHRC's) *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from the SHRC), into a retrievable storage collection in a public repository or museum.

- A statement that all cultural and tribal cultural resources encountered will be subject to the protocols detailed within the CTRMMP.

- A statement that the removal of any Native American cultural materials shall be conducted in the presence of a tribal monitor representing the consulting tribes unless otherwise decided by cultural resources representatives of the consulting tribes, and all removed materials shall be temporarily curated on-site.
- A statement that the project owner will pay all curation fees for recovered artifacts and for related documentation produced during cultural and tribal cultural resource investigations conducted for the project. The project owner shall identify three facilities that meet American Association of Museums (AAM)-accreditation that can accept archaeological materials resulting from project activities into their permanent collections and provide for the proper care of these objects in accordance with the SHRC's Guidelines for the Curation of Archaeological Collections (1993, or future updated guidelines from the SHRC). The project owner shall coordinate with the consulting tribes to identify at least one facility located within Kern County willing to curate Native American archaeological materials in their permanent collections. Should it occur that avoidance, preservation in place, and on-site reburial are not an option for the treatment and disposition of Native American archaeological material, the project owner shall release control of those items to the identified facility.
- A statement demonstrating when and how the project owner will comply with Health and Human Safety Code, section 7050.5(b), and Public Resources Code, section 5097.98(b) and (e), including the statement that the project owner will notify the CPM and the NAHC of the discovery of human remains.
- A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any archaeological materials that are encountered during ground disturbance and cannot be treated prescriptively.
- A description of the contents, format, and review and approval process of the final Cultural and Tribal Cultural Resources Report (CTCRR), which shall be prepared according to *Archaeological Resource Management Report (ARMR)* guidelines.

Verification: Upon approval of the CRS proposed by the project owner, the CPM will provide to the project owner an electronic copy of the draft model CTRMMP for the CRS.

At least 30 days prior to the start of ground disturbance, the project owner shall submit the CTRMMP to the CPM for review and approval.

At least 30 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials generated or collected during archaeological investigations (survey, testing, data recovery).

Within 90 days after completion of ground disturbance (including landscaping), if archaeological materials requiring curation were generated or collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the SHRC's *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from SHRC), to accept the archaeological materials from this project. This agreement shall stipulate the payment of fees necessary for permanent curation of the collections and associated records and the obligation of the project owner to pay for those fees. Any agreement concerning curation will be retained and available for audit for the life of the project.

CUL/TRI-4 CULTURAL RESOURCES WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

Prior to and for the duration of ground disturbance, the project owner shall provide WEAP training to all new workers within their first week of employment at the project site, along the linear facilities routes, and at laydown areas, roads, and other ancillary areas. The cultural and tribal cultural resources part of this training shall be prepared by the CRS, and shall be conducted by the CRS or an Alternative CRS. WEAP training may be presented in-person, in the form of a video, or as a mix of the two formats. The CRS and/or Alternative CRS shall collaborate with the consulting tribes in preparing and presenting the training. During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

- A discussion of the cultural sensitivity of the project area;
- A discussion of applicable laws and penalties under law;
- Samples or visuals of artifacts that might be found in the project vicinity;
- A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;

- A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
- Instruction that the CRS, Alternate CRS, and CRMs have the authority to halt ground disturbance around a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
- Instruction that employees, if the CRS, Alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural or tribal cultural resource discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
- An informational brochure that identifies reporting procedures in the event of a discovery;
- An acknowledgement form signed by each worker indicating that they have received the training; and
- A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program unless such activities are specifically approved by the CPM.

Verification: At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the draft text and/or training video for the cultural and tribal cultural resources WEAP, including Native American participation, and graphics and the informational brochure to the CPM for review and approval. The CRS shall also identify who will be conducting the cultural and tribal cultural resources portion of the training.

At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

At least 10 days prior to each WEAP training offered, the CRS shall inform the cultural resources representatives for the consulting tribes of the upcoming training and invite them to attend and/or participate should they elect to. Monthly, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have

completed the training in the prior month and a running total of all persons who have completed training to date.

CUL/TRI-5 UNDISCOVERED CULTURAL RESOURCES The project owner shall ensure that a CRS, alternate CRS, or CRM and Native American Monitor shall be present for any ground disturbance associated with construction of the project, including but not limited to tree/shrub removal and planting, clearing/grubbing, grading, excavation, trenching, compaction, fence/gate removal and installation, and hardscape installation.

Prior to the start of ground disturbance, the project owner shall notify the CPM and all interested California Native American tribes of the date on which ground disturbance will begin. Where excavation equipment is actively removing dirt and hauling the excavated material farther than 50 feet from the location of active excavation, full-time archaeological monitoring shall require at least two monitors per excavation area. In this circumstance, one monitor shall observe the location of active excavation, and a second monitor shall inspect the dumped material. For excavation areas where the excavated material is dumped no farther than 50 feet from the location of active excavation, one monitor shall observe both the location of active excavation and inspect the dumped material.

If the CRS believes that the required number of monitors is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the number of monitors shall be provided to the CPM for review and approval prior to any change in the number of monitors.

The research design in the CTRMMP shall govern the collection, treatment, retention/disposal, curation, and reburial of any archaeological materials encountered. On forms provided by the CPM, monitors shall keep a daily log of any monitoring and other cultural and tribal cultural resource activities and any instances of non-compliance with the Conditions of Certification or applicable laws, ordinances, regulations, and standards (LORS). The daily monitoring logs shall at a minimum include the following information.

- First and last name of the monitors
- Time in and out
- Weather. Specify if weather conditions led to work stoppages.
- Work location (project component). Provide specifics (e.g., power block, landscaping).

- Proximity to cultural or tribal cultural resource(s). Specify if work conducted within 1,000 feet of a known cultural resource.
- Work type (machine)
- Work crew (company, operator, and foreman)
- Depth of excavation
- Description of work
- Stratigraphy
- Artifacts, listed with the following identifying features
 - Field artifact #: When recording artifacts in the daily monitoring logs, the CRS shall institute a field numbering system to reduce the likelihood of repeat artifact numbers. A typical numbering system could include a project abbreviation, monitor's initials, and a set of numbers given to that monitor: e.g., WRESC-MB-123.
 - Description
 - Measurements
 - Universal Transverse Mercator (UTM) coordinates
 - Whether artifacts are likely to be isolates or components of larger resources
 - Assessment of significance of any finds
- Actions taken
- Plan for the next workday

A cover sheet shall be submitted with each day's monitoring logs and shall at a minimum include the following.

- Count and list of first and last names of all monitors for that day
- General description (in paragraph form) of that day's overall monitoring efforts, including monitor names and locations

- Any reasons for halting work that day
- Count and list of all artifacts found that day: include artifact #, location (i.e., grading in Unit X), measurements, UTM's, and very brief description (i.e., historic can, granitic biface, quartzite flake)
- Whether any artifacts were found out of context (i.e., in fill, caisson drilling, flood debris, spoils pile)

Copies of the daily monitoring logs and cover sheets shall be provided by email from the CRS to the CPM, as follows.

- Each day's monitoring logs and cover sheet shall be merged into one PDF document
- The PDF title and headings, and emails shall clearly indicate the date of the applicable monitoring logs
- PDFs for any revised or resubmitted versions shall use the word "revised" in the title

Daily and/or weekly maps shall be submitted along with the monitoring logs as follows.

- The CRS shall provide daily and/or weekly maps of artifacts at the request of the CPM. A map shall also be provided if artifact locations show complexity, high density, or other unique considerations.
- Maps shall include labeled artifacts, project boundaries, previously recorded sites and isolates, aerial imagery background, and appropriate scales

From the daily monitoring logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring did not occur.

The Cultural and Tribal Cultural Resources section of the MCR shall be prepared in coordination with the CRS and shall include a monthly summary report of cultural and tribal cultural resources-related monitoring. The summary shall:

- List the number of monitors daily, as well as provide monthly monitoring-day totals

- Give an overview of cultural and tribal cultural resource monitoring work for that month and discuss any issues that arose
- Describe fulfillment of requirements of each cultural and tribal cultural resource mitigation measure
- Summarize the confidential appendix to the MCR, without disclosing any specific confidential details
- Include the artifact concordance table (as discussed below), but with removal of UTMs

Each MCR, prepared under supervision of the CRS, shall be accompanied by a confidential appendix that contains:

- Completed DPR 523A forms for all artifacts recorded or collected in that month. For any artifact without a corresponding DPR form, the CRS shall specify why the DPR form is not applicable or pending (i.e. as part of a larger site update).
- A concordance table that matches field artifact numbers with the artifact numbers used in the DPR 523 forms shall be included. The sortable table shall contain each artifact's date of collection and UTM coordinates and note if an artifact has been deaccessioned or otherwise does not have a corresponding DPR 523 form. Any post-field log recordation changes to artifact numbers shall also be noted. DPR forms shall be submitted as one combined PDF. The PDF shall organize DPR forms by site and/or artifact number
- The PDF shall include an index and bookmarks

If artifacts from a given location (near each other or an existing resource) are collected month after month, and if agreed upon with the CPM, a final updated DPR 523 form for the resource may be submitted at the completion of monitoring. The monthly concordance table shall note that the DPR 523 form for the included artifacts is pending.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural and tribal cultural resource-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM. If the CRS and consulting tribes believe that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring. The CRS, at his or her discretion, or at the request of

the CPM, may informally discuss cultural and tribal cultural resource monitoring and mitigation activities with CEC technical staff.

Cultural and tribal cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions of Certification.

Upon becoming aware of any incidents of non-compliance with the conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM.

The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions of Certification. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the CPM will notify all Native Americans with whom the CEC communicated during the project review of the date on which the project's ground disturbance will begin.

At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log and information to be included in the cover sheet for the daily monitoring logs.

While monitoring is on-going, the project owner shall submit each day's monitoring logs and cover sheet merged into one PDF document by email within 24 hours.

The CRS and/or project owner shall notify the CPM of any incidents of non-compliance with the conditions and/or applicable LORS by telephone or email within 24 hours.

The CRS shall provide daily maps of artifacts along with the daily monitoring logs if more than 10 artifacts are found per day, or as requested by the CPM.

The CRS shall provide weekly maps of artifacts if there more than 50 artifacts are found per week, or as requested by the CPM. The map shall be submitted within two business days after the end of each week.

While monitoring is on-going, the project owner shall submit monthly MCRs and accompanying weekly summary reports. The project owner shall attach any new DPR 523A forms, under confidential cover, completed for finds treated prescriptively, as specified in the CTRMMP.

Final updated DPR 523 forms with sites (where artifacts are collected month after month) can be submitted at the completion of monitoring, as agreed upon with the CPM.

At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by California Native American tribes in response to the project owner's transmittals of information.

CUL/TRI-6 AUTHORITY TO HALT CONSTRUCTION IN THE EVENT OF A

DISCOVERY The CRS shall have the authority to halt ground disturbance in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

If a cultural or tribal cultural resource over 50 years of age is found (or if younger, determined exceptionally significant by the CRS), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity (within 60 feet) of the discovery sufficient to ensure that the resource is protected from further impacts. If the discovery includes human remains, work in the immediate vicinity (within 100 feet) shall be halted or redirected more than 100 feet away from the discovery, the project owner shall comply with the requirements of Health and Human Safety Code § 7050.5(b) and shall additionally notify the CPM and the NAHC of the discovery of human remains. No action with respect to the disposition of human remains of Native American origin shall be initiated without direction from the CPM. Monitoring, including Native American monitoring, and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere, while the halting or redirection of ground disturbance in the vicinity of the discovery shall remain in effect until the CRS has visited the discovery, and all the following has occurred:

- The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural or tribal cultural resource discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e., work stoppage or redirection), a recommendation of California Environmental Quality Act (CEQA)

significance, and recommendations for data recovery from any cultural or tribal cultural resource discoveries, whether or not a determination of CEQA significance has been made.

- If the discovery would be of interest to California Native American tribes, the CRS has notified all California Native American tribes that expressed a desire to be notified in the event of such a discovery
- The CRS has completed field notes, measurements, and photography for a DPR 523 Primary Record form. Unless the find can be treated prescriptively, as specified in the CTRMMP, the "Description" entry of the DPR 523 Primary Record form shall include a recommendation on the CEQA significance of the discovery. If the find is of interest to the consulting tribes, the CRS's recommendation on the CEQA significance of the discovery shall be developed in coordination with the consulting tribes. The project owner shall submit completed forms and statements of support of the proposed recommendations from the consulting tribes (for finds of interest to the consulting tribes) to the CPM.
- The CRS, the project owner, the consulting tribes (for finds of interest to the consulting tribes), and the CPM have conferred, and the CPM has concurred with the significance finding concerning the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed

Ground disturbance may resume only with the approval of the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, Alternate CRS, CRMs, and Native American Monitors have the authority to halt ground disturbance in the vicinity of a cultural or tribal cultural resource discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

Unless the discovery can be treated prescriptively, as specified in the CTRMMP, completed DPR 523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural or tribal cultural resource.

Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all California Native American tribes that expressed a desire to be notified in the event of such a discovery, and the CRS must inform the CPM when the notifications are complete.

No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the chairpersons and designated cultural resources representatives of the California Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.

Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by California Native American tribes in response to the project owner's transmittals of information.

CUL/TRI-7 FINAL CULTURAL AND TRIBAL CULTURAL RESOURCES REPORT

(CTRR) The project owner shall submit the final CTRR along with letters or statements of support of the CTRR from the consulting tribes to the CPM for approval. The final CTRR shall be written by or under the direction of the CRS, in coordination with the cultural resources representatives of the consulting tribes and shall be provided in the Archeological Resource Management Report (ARMR) format. The final CTRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, DPR 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) shall be included as appendices to the final CTRR.

If the project owner requests a suspension of all construction activities for more than 30 days, then a draft CTRR that covers all cultural and tribal cultural resources activities associated with the project shall be prepared by the CRS in coordination with the cultural resources representatives of the consulting tribes and submitted to the CPM along with letters or statements of support of the draft CTRR from the consulting tribes for review and approval on the same day as the suspension/extension request. The draft CTRR shall be retained at the project site in a secure facility until construction resumes or the project is withdrawn. If the project is withdrawn, then a final CTRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification: Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CTRR and letters or statements of support from the consulting tribes to the CPM for review and approval.

Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CTRR and letters or statements of support from the consulting tribes to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

Within 10 days after CPM approval of the CTRR, the project owner shall provide documentation to the CPM confirming that copies of the final CTRR have been provided to the CHRIS, the curating institution, if archaeological materials were collected, and to the tribal chairpersons and cultural resources representatives of the Yuhaaviatam of San Manuel Nation, Tejon Indian Tribe, Kern Valley Indian Community, and any California Native American tribes that request copies of project-related reports.

CUL/TRI-8 ADDITIONAL SURVEY, EVALUATION, AND DATA RECOVERY If the project plans change to include any of the areas that were unable to be surveyed or sites that were not formally evaluated, additional surveys will be conducted and any new resources will be recorded as well as any previously recorded resources revisited, and site records updated. The project owner will confer with the consulting tribes regarding newly identified California Native American cultural resources' archaeological significance, its potential as a tribal cultural resource, and avoidance (or other appropriate treatment). Along these lines all resources will be evaluated for the California Register of Historical Resources, which can include archival research and phase II testing. If any of the archaeological resources constitute a historical resource or a unique archaeological resource under CEQA, avoidance and preservation in place is the preferred manner of mitigation. Preservation in place may be accomplished by, but is not limited to, avoidance, incorporating the resource into open space, capping, or deeding the site into a permanent conservation easement. If preservation in place is demonstrated to be infeasible (this includes the known historical resources within the Willow Rock facility) and data recovery through excavation is the only feasible mitigation available, an Archaeological Resources Treatment Plan that includes relevant information and research design outlined in **CUL/TRI-3**, shall be prepared and implemented by the qualified archaeologist in consultation with the project owner, the consulting California Native American tribes, and the CPM that provides for the adequate recovery of the scientifically consequential information contained in the archaeological resource. The qualified archaeologist, project owner, and CPM shall

consult with appropriate Native American representatives in determining treatment for Native American resources to ensure cultural values ascribed to the resource, beyond those that are scientifically important, are considered. The data recovery will be completed prior to any ground disturbance within the area of the resource and the project owner shall notify the CPM upon completion of any data recovery. Reporting the final data recovery results will be consistent with **CUL/TRI-7**.

Verification: If project plans change to include additional areas that were unable to be surveyed, sites that were not formally evaluated, or historical resources that require data recovery because avoidance is not possible, the CPM will be notified within 30 days of any additional survey, evaluations, or data recovery conducted.

CUL/TRI-9 CREATE A TROPICO GOLD MINE HISTORIC DISTRICT HISTORY AND MANAGEMENT GUIDELINES DOCUMENT The project owner shall prepare a comprehensive history of the historic district. The project owner shall conduct archival research and acquire contemporary/period photographs to include in the history. It shall be written for the lay public. The project owner shall also create a management guidelines document for the Tropico Gold Mine Historic District and include this history in the management guidelines document. This document shall be written to instruct cultural resource managers and the general public in understanding how to avoid and minimize impacts to historic district. To reduce impacts on the Tropico Gold Mine Historic District to a less than significant level and to ensure that character defining features of the historic district are maintained both the viewshed and the integrity of setting and feeling must be taken into account when managing this resource. As such, the management guidelines document shall address managing visual impacts to the historic district. The project owner is to coordinate with CEC staff and the County of Kern in the creation of these guidelines.

Verification: At least 15 days prior to the start of ground disturbance for the gen-tie line route along Mojave Tropico Road and its connecting route options to Rosamond Boulevard, the project owner shall provide a brief written statement to the CPM with a schedule concerning the creation of the Tropico Gold Mine Historic District history and management guidelines document. This schedule must include coordination opportunities with the County of Kern and with CEC staff.

Upon completion of the Tropico Gold Mine Historic District history and management guidelines document the project owner shall make it available to the public as well as provide a copy to both CEC staff and the County of Kern.

CUL/TRI-10 **APPLY RUSTIC BROWN FINISH TO TRANSMISSION POLES NEAR TROPICO GOLD MINE HISTORIC DISTRICT** To reduce visual impacts to the Tropico Gold Mine Historic District to a less than significant level, the project owner shall give gen-tie line poles adjacent to the Tropico Gold Mine Historic District a rustic brown finish using commercially available colorants or color treatments, such as Natina, to ensure that the steel poles are less visually obtrusive to the Tropico Gold Mine Historic District. This includes the gen-tie line poles along Mojave-Tropico Road and Felsite Avenue between Irone Avenue and 65th Street West.

Verification: At least 30 days prior to the start of ground disturbance for the gen-tie Line route the project owner shall provide to the CPM a brief written statement with a schedule concerning the implementation of the gen-tie line coloration.

Within 90 days of completion of the portion of the gen-tie line route in the vicinity of the Tropico Gold Mine Historic District the project owner shall provide to the CPM a brief written statement stating that the gen-tie line route constructed in this vicinity was treated with a commercial colorant or color treatment to ensure the steel poles have a rustic brown finish, and photos of the colored steel poles. If the color treatment requires additional time to take effect, then the project owner shall instead provide to the CPM a brief written statement, with a projected timeline until the coloration has taken effect. The project owner shall also provide photos of the steel poles in the steel poles in the vicinity of the Tropico Gold Mine Historic District once the coloration has taken effect.

Geological and Paleontological Resources Conditions of Certification

GEO-1 As described in the Building Code Sections 1803.2 to 1803.5, if the DCBO determines that investigative conditions exist, the project owner shall perform geotechnical investigations for questionable soils, expansive soils, shallow groundwater, deep foundations, rock strata, excavations near foundations, compacted fill material, controlled low-strength material, alternate setback and clearance, and Seismic Design Categories C through F. In accordance with the California Business and Professions Code and Building Code Section 1803.1, the geotechnical investigations shall be conducted by a registered design professional.

As described in the Building Code Section 1803.6, the project owner shall write a geotechnical report that documents the results from the geotechnical investigations and provides project design recommendations to mitigate geologic hazards. In accordance with the CBC Section 1803.1, the

geotechnical report shall be prepared and signed by a California registered geotechnical engineer, certified engineering geologist, and a registered geophysicist, where applicable.

In accordance with the Building Code Section 1803.7, the geotechnical investigation report shall include a geohazards report that considers seismic hazards. The geohazard report shall identify site-specific geologic and seismic conditions that may require mitigation. The report shall recommend project design criteria to mitigate geologic and seismic hazards. The project owner shall incorporate recommendations for project design criteria into the final project design. An appropriate qualified California-certified licensed engineering geologist, in consultation with a California registered geotechnical engineer, shall prepare the geohazards portion of the geotechnical report.

Verification: As described in the Building Code Section 1803.6, the project owner shall submit a written geotechnical report to the CEC's DCBO for review and approval. The project owner shall provide the CPM copies of the geotechnical investigations and geohazards report and any comments by the DCBO at least 60 days prior to grading.

GEO-2 Final design and construction of underground openings shall be in accordance with all applicable LORS listed below:

- Code of Federal Regulations
 - Title 29, Subtitle B, Chapter XVII, Part 1926, Subpart S
 - Title 30, Chapter I, Subchapter K, Part 57
- U.S. Army Corp of Engineers
 - Engineering Manual 1110-1-1804: Engineering and Design, Geotechnical Investigations
 - Engineering Manual 1110-2-2901: Tunnels and Shafts in Rock
 - Engineering Manual 1110-1-3500: Chemical Grouting Technology
- Guide Specification for Civil Works Construction: Section 02330: Tunnel and Shaft Grouting
- U.S. Bureau of Reclamation Engineering Geology Field Manual, Volumes I and II
- American Concrete Institute
 - ACI 506.2-13: Specification for Shotcrete
 - ACI PRC-506-22: Shotcrete-Guide
- ASTM International
 - 4879-08: Standard Guide for Geotechnical Mapping of Large Underground Openings in Rock. Note, ASTM International withdrew this standard in 2017 and did not replace it.
 - F432-19: Standard Specification for Roof and Rock Bolts and Accessories

- Norwegian Tunneling Society Publication 16: Underground Constructions for the Norwegian Oil and Gas Industry

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of excavation in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO the final design plans, specifications and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next MCR, a copy of a statement from the DCBO that the proposed structural plans, specifications, and calculations were approved and comply with the requirements set forth in applicable engineering LORS.

GEO-3 The project owner shall develop and implement an integrity inspection program for the excavated underground structures, including the cavern and vertical shafts. Program elements shall include:

- Procedures, timelines, and triggering events for remote and/or in-person inspections and maintenance under the responsible charge of an appropriate qualified California licensed geologist or engineer.
- Procedures and timelines for notifying the CPM of inspection results and maintenance actions.
- A plan for how to train workers in safety, awareness, and implementation of the integrity inspection plan.
- A plan for how to update the integrity inspection program with information gained from experience.

Verification: At least 30 days (or a project owner and DCBO mutually agreed upon alternative time frame) prior to the start of any increment of excavation in the DCBO-approved master drawing and master specifications list, the project owner shall submit to the DCBO and CPM the integrity inspection plan for review and approval.

PAL-1 The project owner shall provide the CPM with the resume, qualifications, and contact information of its paleontological resource specialist (PRS) for review and approval. The PRS's resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks. The PRS's resume shall also include the names and phone numbers of references that can be contacted to verify information.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Code of Federal Regulations, CFR, Title 43, Subtitle A, Part 49 – Paleontological Resources Preservation and in the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to

Paleontological Resources (SVP 2010). The qualifications of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree (M.S., Ph.D., or equivalent).
2. Ability to recognize and collect fossils in the field.
3. Local geological and biostratigraphic expertise.
4. Proficiency in identifying vertebrate and invertebrate fossils.
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors (PRMs) to monitor as he or she deems necessary on the project. PRMs shall have the equivalent of the following qualifications:

1. B.S. or B.A. degree in geology or paleontology and a minimum of one year of relevant paleontological resource monitoring experience in California; or
2. A.S. or A.A. in geology, paleontology, or biology and a minimum of four years of relevant paleontological resource monitoring experience in California; or
3. Enrollment in upper division classes pursuing a bachelor's degree or a more advanced degree in the field of geology or paleontology and a minimum of three years of relevant paleontological resource monitoring experience in California.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval for the replacement PRS. The project owner shall keep resumes on file for the qualified PRSs and PRMs.

The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-

site work to the CPM for review and approval. CPM approval is required prior to the initiation of ground disturbing activities.

At least 30 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated PRMs for the project. The letter shall state that the identified PRMs meet the minimum qualifications for paleontological resource monitoring as required by this Condition of Certification. If additional PRMs are needed during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM for approval no later than one week prior to the monitor's beginning on-site duties.

Prior to any change of the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide the PRS and the CPM, for review and approval, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet (1:480) and 1 inch = 100 feet (1:1,200). If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the Project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide maps and drawings to the PRS and CPM for review and approval.

If there are planned changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) and submits it to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPM approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the Code of Federal Regulations, CFR, Title 43, Subtitle A, Part 49 – Paleontological Resources Preservation and the Society of Vertebrate Paleontology's Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources (SVP 2010). The PRMMP shall include, but not be limited to, the following:

1. Procedures for, and assurance, that those procedures would be followed in the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, field work, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation.
2. Identification of the person(s) expected to assist with each of the tasks required by the PRMMP and these Conditions of Certification.
3. A thorough discussion of the geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units.
4. An explanation of why sampling is needed, a description of the sampling methodology, and how much sampling is expected to take place and in which geologic units. This should include descriptions of the sampling procedures that shall be used for fine-grained and coarse-grained units.

5. A discussion of the locations where monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling at these locations.
6. A discussion of procedures to be followed: (a) in the event of a significant fossil discovery, (b) stopping construction in the area of the discovery, (c) resuming construction, and (d) how notifications shall be performed.
7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits.
8. Procedures to inventory, prepare, and deliver fossil materials the PRS or CPM deem appropriate for curation in a retrievable storage collection at a public repository or museum that meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.
9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they shall be met, and the name and phone number of the contact person at the institution.
10. A copy of the paleontological resources Conditions of Certification.
11. A copy of the daily monitoring log form.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM for review and approval. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance the project owner and the PRS shall prepare a CPM-approved Worker Environmental Awareness Program (WEAP). The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect those resources. The purpose of the WEAP is to train project workers to recognize palaeontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive palaeontologic resources.

The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.
2. Good quality photographs or physical examples of fossils expected to be found in units of high palaeontologic sensitivity at, or near, the project site.
3. Information that the PRS and PRM have the authority to stop or redirect construction in the event of a discovery or unanticipated impact on a paleontological resource.
4. Instruction that employees are to stop or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM.
5. An informational brochure that identifies reporting procedures in the event of a discovery.
6. A WEAP certification of completion form signed by each worker indicating that they have received the training.
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.
8. The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that shall be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological resources.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the draft WEAP, including the brochure and sticker, to the CPM for review and comments. The submittal shall also include a draft training script and the set of reporting procedures for workers to follow.

At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final WEAP and training script. If the project owner is planning to use a video for training, a copy of the training video shall be submitted following final approval of the WEAP and training script.

PAL-5 No worker shall excavate or perform any ground disturbance activity prior to receiving CPM-approved WEAP training by the PRS, unless specifically approved by the CPM.

Prior to project ground disturbance, the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or who operate ground-disturbing equipment or tools. Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a CPM- approved video or in-person training may be used for new employees. If a video is used, a qualified trainer shall be present to monitor training and respond to questions.

The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

Verification: In the Monthly Compliance Report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained, trainer identification, and type of training (in-person and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

The resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to providing WEAP training.

If the project owner requests an alternate paleontological WEAP trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct WEAP training prior to CPM authorization.

PAL-6 The project owner shall ensure that the PRS and PRM(s) monitor, consistent with the PRMMP, all construction-related grading and excavation in areas where potential fossil-bearing materials were identified, both at the site and along any constructed linear facilities associated with the project. If the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the project owner shall notify and seek the concurrence with the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to stop or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM

prior to the change in monitoring and be included in the MCR. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities; copies of these logs shall be submitted with the MCR. The name and contact information of PRM(s) and PRS who were making field observations shall be included in the daily log. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.

For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours. If the resources are encountered on a weekend or holiday, notification shall occur on the morning of the next business day. In the event construction has been stopped because of a paleontological find, such notification shall be provided as soon as practical, but not later than 24 hours after a stop work order has been issued.

For excavations planned in material that is classified as having a moderate to high paleontological sensitivity prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources shall be proposed in the PRMMP.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities to be included in each MCR. The summary shall include the name(s) of the PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils.

Negative findings, when no fossils are identified, shall also be reported. A final section of the report shall address any issues or concerns about the project relating to palaeontologic monitoring, including any incidents of non-

compliance or any changes to the CPM-approved monitoring plan. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: A copy of the daily monitoring log of paleontological resource activities shall be included in the MCR.

The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 15 days in advance of any proposed changes in monitoring different from that identified in the PRMMP, which require concurrence between the PRS and CPM. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-7 The project owner shall ensure preparation of a paleontological resources report (PRR) by the designated PRS. The PRR shall be prepared following the completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered and the PRS's description of sensitivity and significance of those resources, and notes regarding if and how the fossil material was curated in accordance with **PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM for review.

PAL-8 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed, including collection of fossil material, preparation of fossil material for analysis, analysis of fossils, identification and inventory of fossils, preparation of fossils for curation, and delivery for curation of all significant paleontological resource materials encountered and collected during project construction. The project owner shall pay all curation fees charged by the museum for fossil material collected and curated because of paleontological mitigation. The project

owner shall also provide the curator with documentation showing the project owner irrevocably and unconditionally donates, gives, and assigns permanent, absolute, and unconditional ownership of the fossil material.

Verification: Within 60 days after the submittal of the PRR, the project owner shall submit documentation to the CPM identifying the entity that would be responsible for curating collected specimens. This documentation shall also show that fees were paid for curation and the owner relinquished control and ownership of all fossil material.

Land Use, Agriculture, and Forestry Conditions of Certification

LAND-1 Prior to the commencement of construction, the project owner shall provide the Kern County Planning and Natural Resources Department with the location of all properties accepting excavated rock from the project in unincorporated Kern County, including quantity of rock to be accepted.

Prior to the commencement of construction, the project owner shall obtain any necessary permits from the Kern County Planning and Natural Resources Department, or other relevant departments, for development of temporary laydown and parking areas referred to as Villa Haines (VH). The project owner shall pay Kern County fees for review and comment and demonstrate compliance with requirements for development of the laydown and parking areas referred to as P1, P2 N, and P2 S.

The project owner shall ensure that local regulations are complied with during construction, operation, and restoration of laydown and parking areas.

Verification: At least 30 days prior to development of any temporary laydown and parking areas, the project owner shall provide to the CPM the required approved permits for the temporary laydown or parking area (VH) and provide documentation showing payment of Kern County fees for review and comment of the laydown and parking areas P1, P2 N, and P2 S and demonstrating compliance with requirements of the Kern County Planning and Natural Resources Department, or any other relevant departments.

LAND-2 Prior to any grading or development for the permanent project facilities under CEC jurisdiction (including the Willow Rock Energy Storage Center, gen-tie line, and optional architectural berm) the project owner shall develop a construction site plan (including the temporary rock crushing facility and concrete batch plant) and operation site plan (including the optional architectural berm) and submit it to the Kern County Planning and Natural Resources Department for review and comment, and to the CPM for approval, to ensure compliance with local regulations, including conditions

required by the ALUCP. The project owner shall adhere to CPM-approved site plans during construction and operation and ensure that local regulations are complied with during construction and operation of the permanent project facilities.

Verification: At least 60 days prior to any grading or development for permanent project facilities under CEC jurisdiction (including the Willow Rock site, gen-tie line, and a potential architectural berm) the project owner shall submit proposed site plans for these facilities to the Kern County Planning and Natural Resources Department for review, comment, and approval, and to the CPM for review and approval. The project owner shall provide any review comments from Kern County to the CPM at least 30 days prior to any grading or development for these permanent project facilities.

LAND-3 Prior to the commencement of construction of any linear facilities on BLM land, the project owner shall obtain a ROW grant or similar authorization from the Bureau of Land Management (BLM) for any development on BLM-managed public land.

Verification: At least 60 days prior to construction of any linear facilities on BLM land, the project owner shall submit to the CPM documentation showing BLM's approval of a ROW grant or similar authorization for all development on BLM land. The project owner shall also demonstrate compliance with the BLM's conditions.

LAND-4 Prior to the commencement of construction of each project feature requiring an FAA No Hazard Determination, the project owner shall file Form FAA 7460-1, "Notice of Construction or Alteration", for the main project facility structures, for construction equipment that meets the notice criteria of 14 CFR Part 77, and for any new or relocated transmission poles that require and have not yet received FAA Determinations. The project owner shall comply with all FAA Determinations and requirements, including notification of the FAA within 5 days of when each structure reaches its highest height.

Verification: The project owner shall obtain an FAA Determination of No Hazard prior to construction of the main project facility structures, erection of construction equipment that meets the notice criteria of 14 CFR Part 77, or construction of any new or relocated transmission poles that require and have not yet received Determinations. At least 30 days prior to construction of the main project facility structures, erection of construction equipment, or construction of new transmission poles subject to the FAA's 7460-1 process, the project owner shall provide to the CPM copies of all FAA Determinations for the facilities to be constructed or erected.

Traffic and Transportation Conditions of Certification

TRANS-1 Prior to the start of construction, the project owner shall prepare a Construction Traffic Management Plan (CTMP). The CTMP shall address the movement of workers, vehicles, equipment, and materials, including arrival and departure schedules, carpooling, a parking/staging plan, and designated workforce and delivery routes. Traffic control plans shall be prepared as necessary to address construction staging, as well as any roadway or lane closures and shall include any signage or roadway lighting improvements deemed necessary during construction. The CTMP shall address means of access for emergency vehicles to the project site, as well as means of maintaining access to any adjacent residential and commercial property during the construction and maintenance of the project.

The CTMP shall include procedures to restore damage to existing roadways caused by project construction traffic, including corresponding traffic index calculations. The construction contractor shall work with Kern County and Caltrans to prepare a schedule and mitigation plan for the roadways along construction routes, in accordance with the procedures established by the CTMP.

The CTMP shall include measures to ensure safe ingress and egress at the project access intersections. Measures may include removal of vegetation to provide unobstructed line of sight, addition of advanced warning signs, and active work zone traffic control/traffic management as approved by the CPM. The CTMP shall also be submitted to Kern County and Caltrans for review and comment.

Verification: At least 60 calendar days prior to the start of construction, the project owner shall submit the CTMP to Kern County, Caltrans, and California Highway Patrol (CHP) for review and comment and to the CPM for review and approval. The project owner shall also provide the CPM with a copy of the transmittal letter to Kern County, Caltrans, and CHP requesting review and comment.

The CTMP shall include transportation demand management (TDM) measures to reduce project-generated VMT during construction. The CTMP shall outline VMT reduction measures, which may include, by way of example, the following:

- Provide information regarding lodging for specialized workers about lodging options close to the site.
- Create or promote existing carpooling programs to encourage employees to carpool.

- Offer a shuttle service for employees with pick-up points at nearby hotels housing specialized workers or park-and-ride lots.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from Kern County, Caltrans, CHP, or any other interested agencies, along with any changes to the CTMP, for CPM review and approval. After CPM review and approval, the project owner shall provide completed copies of the final CTMP to Kern County, Caltrans, CHP, and any other interested agencies, sending copies of the correspondence to the CPM.

TRANS-2 The project owner shall provide an irrevocable offer of dedication to Kern County for the following roadways:

- Dawn Road: 55 feet from the centerline along the entire subject property and the off-site portion from the westerly project boundary to the westerly boundary of Lot 3 of County Parcel Map No. 260.
- Sierra Highway: 45 feet from the centerline on both sides, totaling 90 feet in width.

Concurrent with the site mobilization and grading activities, the project owner shall also commence construction of an asphalt concrete paved road approach at the proposed Dawn Road entrance at Sierra Highway, extending 200 feet into the project site.

Prior to the commencement of operations, the project owner shall pave Dawn Road from the project entrance westerly to the Caltrans boundary at SR 14. The paving shall meet Type B Standards, including:

- 60-foot-wide roadway with paved shoulders
- Structural sections suitable for heavy truck traffic
- Asphalt concrete surfacing and necessary tie-ins

The project owner shall ensure that site access intersections and corresponding roadway and parking improvements are designed according to standards adopted by Kern County and, where applicable, Caltrans, to ensure safe ingress and egress at the project access intersections during the construction and operation phases.

Verification: The project owner shall ensure that all proposed on-site access and parking improvement plans for both the construction and operation phases are submitted to Kern County and Caltrans for review and comment, and to the CPM for review and approval before construction begins.

The project owner shall offer right-of-way dedication for the segments of Dawn Road and Sierra Highway adjacent to the project site prior to the start of construction.

Concurrent with the site mobilization and grading activities, the project owner shall obtain an encroachment permit from the Kern County Public Works Department to construct an asphalt concrete paved road approach at the proposed Dawn Road entrance at Sierra Highway, extending 200 feet into the project site.

Prior to the commencement of operations, the project owner shall obtain an encroachment permit from the Kern County Public Works Department and pave Dawn Road from the project entrance west to the Caltrans right-of-way at SR 14.

The project owner shall also obtain an encroachment permit from Caltrans prior to construction for any site access improvements within Caltrans right-of-way.

TRANS-3 The project owner shall comply with limitations imposed by Caltrans and other relevant jurisdictions, including the Kern County, on vehicle sizes, weights, driver licensing, and truck routes.

Verification: The project owner shall retain copies of permits and supporting documents on-site for CPM inspection if requested.

TRANS-4 The project owner shall ensure that contracts with third party vendors include a representation that any permits and/or licenses are secured from the relevant administering agency, including Kern County, Caltrans, and CHP for the transport of hazardous materials.

Verification: The project owner shall include in its monthly compliance reports copies of all permits/licenses acquired by the project owner and/or vendors concerning the transport of hazardous substances.

Socioeconomics Conditions of Certification

SOCIO-1 The project owner and its contractors shall make a good faith effort to hire at least 50 percent of their workers from local Kern County communities. The project owner shall provide the contractors a list of training programs that provide skilled workers and shall require the contractor to advertise

locally for available jobs, notifying the training programs of job availability, all in conjunction with normal hiring practices of the contractor.

Verification: At least 60 days prior to the start of construction, the project owner shall submit a letter to the CEC's Compliance Project Manager (CPM) detailing the hiring efforts prior to commencement of construction, which encourages all contractors of the project site to hire at least 50 percent of their workers from local Kern County communities.

SOCIO-2 The project owner shall pay the current one-time statutory school facility development fee to Mojave Unified School District as authorized by Education Code Section 17620 and the Mojave Unified School District Board Policy BP 7211 Facilities: Developer Fees.

Verification: At least 30 days prior to the start of construction, the project owner shall provide to the CPM proof of payment to the Mojave Unified School District of the statutory development fees.

Public Benefits Conditions of Certification

PB-1 The project owner shall work with the County to determine how the use of sales and use taxes from the construction of the project can be maximized. This process shall include, but is not necessarily limited to, the project owner obtaining a street address within the unincorporated portion of Kern County for acquisition, purchasing and billing purposes, and registering this address with the State Board of Equalization. As an alternative to the aforementioned process, the project owner may make arrangements with Kern County for a guaranteed single payment that is equivalent to the amount of sales and use taxes that would have otherwise been received (less any sales and use taxes actually paid), with the amount of the single payment to be determined via a formula approved by Kern County. The project owner shall allow the County to use this sales tax information publicly for reporting purposes.

Verification: At least 30 days prior to the start of construction, the project owner shall submit a letter to the CEC's Compliance Project Manager detailing the agreement with Kern County on the use of sales and taxes from project construction or proof of payment of the equivalent amount of sales and use taxes was paid to Kern County.

Noise and Vibration Conditions of Certification

NOISE-1 Prior to the start of ground disturbance, the project owner shall notify residences within one mile of the project site and linear facilities, by mail, or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use

by the public to report any undesirable noise conditions associated with the construction, and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This or a similarly effective telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: At least 15 days prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site and shall provide that telephone number.

NOISE-2 NOISE COMPLAINT PROCESS. Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or its authorized agent shall:

- use the Noise Complaint Resolution Form (**Attachment F**), or a functionally equivalent procedure acceptable to the CPM, to document and respond to the noise complaint;
- attempt to contact the person(s) making the noise complaint within 24 hours;
- conduct an investigation to determine the source of noise in the complaint;
- if the noise is project related, take all feasible measures to reduce the source of the noise; and
- submit the Noise Complaint Resolution Form to the CPM documenting the complaint and actions taken. The form shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that states that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file with the CPM the Noise Complaint Resolution Form, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within three business days, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 EMPLOYEE NOISE CONTROL PROGRAM. The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance with Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM for review and approval. The project owner shall make the program available to Cal-OSHA upon request.

NOISE-4 OPERATIONAL NOISE RESTRICTIONS. The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that noise due to the operation of the project plus ambient will not exceed 55 dBA Leq during daytime hours of 7 A.M. to 10 P.M. and 54 dBA Leq during nighttime hours of 10 p.m. to 7 A.M. at NSA-1.

The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that noise due to the operation of the project plus ambient will not exceed 58 dBA Leq during daytime hours 7 A.M. to 10 P.M. and 48 dBA Leq during nighttime hours of 10 P.M. to 7 A.M. at NSA-7.

No new pure-tone components may be introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

When the project first achieves a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at NSA-1 and NSA-7 by someone who represents the project owner and is qualified to conduct noise surveys. This survey during project's operation shall also include measurement of one-third octave band sound pressure levels at the above location to ensure that no new pure-tone noise components have been introduced.

If the results from the noise survey indicate that the power plant noise levels at the affected receptors, NSA-1 and NSA-7, exceed the above value for any given hour during the survey, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

If the results from these noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 45 days of the project first achieving a sustained output of 85 percent or greater. Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 OCCUPATIONAL NOISE SURVEY. Following the project's attainment of a sustained output that produces the highest noise level, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas within the power plant.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, Sections 5095-5099 and Title 29, Code of Federal Regulations, Section 1910.95(g)(3). The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed hazard controls against occupational noise exposures to be employed in order to comply with the above regulations.

Verification: Within 30 days after completing each survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to Cal-OSHA upon request from Cal-OSHA.

NOISE-6 CONSTRUCTION NOISE RESTRICTIONS. Heavy equipment operation and noisy construction work relating to any project features, including linear facilities and pile driving within 1,000 feet of an occupied residential dwelling, and controlled detonations shall be restricted to the times delineated below:

Mondays through Fridays: 6:00 A.M. to 9:00 P.M.

Saturdays and Sundays: 8:00 A.M. to 9:00 P.M.

Construction work including construction of the access roads to the project site, pile driving, controlled detonations shall be performed in a manner that ensures excessive noise (noise that draws a project-related complaint) is

prohibited and the potential for noise complaints is reduced as much as practicable. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and other state-required noise attenuation devices. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use (jake braking) shall be limited to emergencies.

Avoid Controlled Detonations at Night. Controlled detonations shall be limited to daylight hours and shall terminate 30 minutes before sunset and shall not resume until 30 minutes after sunrise, unless authorized by the CPM. Sunrise and sunset times are established by the U.S. Naval Observatory Astronomical Applications Department for the geographic area where the project is located. The schedule of controlled detonations shall be provided to the CPM.

Construction activities associated with the gen-tie transmission lines and poles within 1,000 feet of an occupied residence or school shall implement the following measures or other sound attenuating mitigation measures practicable.

- Provide noise-producing equipment with noise-attenuating shields, shrouds or portable barriers or enclosures, and acoustical lining or acoustical paneling;
- Use electric construction equipment instead of diesel-powered and gasoline-powered equipment;
- Conduct truck loading, unloading, and hauling operations so noise is kept to a minimum.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

Visual Resources Conditions of Certification

VIS-1 The project owner shall use exterior surface coatings, colors, finishes, materials, and a gloss level that diffuse illumination or collection, reflectance and scattering offsite and skyward from the exterior surfaces of the project buildings, structures, and equipment (project components), and specifically include:

- a. An exterior surface coating, color, finish, material, and gloss level that minimize contrast and do not introduce specular reflection in the existing physical landscape.

- b. An exterior surface coating, color, finish, material, and gloss level that is in conformance with applicable adopted architectural design and site development related policies and ordinances of the County of Kern.

The project owner shall submit to the CPM for approval an exterior surface coatings, colors, finishes, and materials plan for the project buildings, structures and equipment that satisfy the above requirements and include the following:

1. A list of the large/major buildings, equipment, structures; perimeter wall and/or fence; transmission line towers and/or poles; above ground pipelines serving the facility onsite and offsite in public view, and a list of their proposed exterior surface coatings, colors, finishes, and materials identified by vendor, name and number, and according to the RAL color matching system or similar universal designation system. The standard environmental colors (PC02-PC10) from the BLM Standard Environmental Color Paint Tool may also be used.
2. The identification of suitable colors will be determined through a study focused on selecting colors for project components compatible with the surrounding physical landscape. Prior to large-scale implementation, proposed color choices shall be tested under field conditions to confirm their effectiveness.
3. Supply one set of brochures showing coating/color chips, and/or samples of the coatings/colors or finish, materials to be applied/installed to buildings, equipment, and structures.
4. A time schedule for the completion of the application/installation of the coating, color, finish, and materials.
5. A maintenance plan that includes procedures for the upkeep of the coatings, colors, finishes, and materials for the life of the project.

The project owner shall not purchase product or service from a vendor for the project exterior surface coatings, colors, finishes, materials prior to CPM approval of the exterior surface coating, color, finish, and materials plan.

Verification:

- a. The project owner shall submit an exterior surface coating, color, finish, and materials plan to the CPM for approval and simultaneously to the Director of Planning and Natural Resources Department for the County of Kern for review and comment ninety (90) days prior to executing a contract to purchase coating, color,

finish and materials with a vendor. The CPM shall provide the Director of Planning and Natural Resources Department at least 30 days to review the plan and provide comments to the applicant and the CPM.

b. If the CPM determines that the exterior surface coating, color, finish, and materials plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.

c. The project owner shall notify the CPM that exterior surface coatings, colors, and finishes of all listed buildings, equipment, and structures has been completed are ready for inspection. With this notification, the applicant shall supply to the CPM one set of color photographs showing the project from the key observation points evaluated for the project certification, and individual color photographs showing the completed exterior surface coatings, colors, finishes, and materials for the following: six spherical hot water tanks, four low pressure exhaust stacks, two closed cooling water tanks, the administration/control room and maintenance building, and one aboveground transmission gen-tie pole structure on the route along Rosamond Boulevard, near LADWP overhead transmission line route easement, and any other building, equipment, and structure as requested by the CPM. Color photographs may be electronically filed or manually filed on electronic media.

d. Exterior surface coatings, colors, finishes, and materials shall be installed/applied (completed) on the exterior surfaces of the large/major buildings, equipment, and structures prior to the start of commercial operation.

e. The project owner shall supply a description of the condition (status) of the exterior surface coatings, colors, finishes, and materials for the large/major buildings, equipment, structures, and others as needed for the reporting year in the Annual Compliance Report. The report shall include:

1. The condition of the exterior surfaces of buildings, equipment, and structures at the end of the reporting year.
2. A listing of maintenance activities performed during the reporting year.
3. A tentative time schedule for maintenance activities for the upcoming year.

VIS-2 Outdoor signs installed on the project site and the construction laydown, parking and storage areas shall comply with the sign regulations of the

applicable base zone district and Chapter 19.84 of the County of Kern Zoning Ordinance.

The project owner shall submit to the CPM for approval and simultaneously to the Director of Planning and Natural Resources Department for the County of Kern for review and comment a sign or signage plan or equivalent plan prepared for the project, project site, and construction laydown, parking and storage areas in compliance with the above requirements and prior to the installation of any sign.

Verification:

The project owner shall submit a sign or signage plan to the CPM for approval and simultaneously to the Director of Planning and Natural Resources Department for the County of Kern for review and comment thirty (30) days prior to installation. The CPM shall provide the Director of Planning and Natural Resources Department at least 30 days to review the plan and provide comments to the applicant and the CPM.

If the CPM determines that the sign or signage plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any installation of a sign. Any revision to the plan must be approved by the CPM.

VIS-3 New outdoor light and glare emitted from the project site and construction laydown area shall not result in light being a pollutant offsite and skyward, "light pollution." The project owner shall include use of luminaires that:

- a. Only be on when needed.
- b. Only light the area that needs it.
- c. Illuminate no brighter than necessary.
- d. Minimize blue light emissions.
- e. Are fully shielded (BUG Rating U0).
- f. Are DarkSky International "DarkSky Approved" program products.
- g. Comply with the applicable adopted outdoor lighting regulations of the County of Kern (Section 19.81 Outdoor Lighting "Dark Skies Ordinance").

The project owner shall submit to the CPM for approval and simultaneously to the Director of Planning and Natural Resources Department for the County of Kern for review and comment a light pollution control plan or equivalent plan prepared for the project that satisfy the above requirements and include the following:

1. Supply one set of product brochures and/or printouts (e.g., diagram, drawing) showing and describing the types of outdoor luminaires to be applied/installed to buildings, equipment, structures, and other locations on the project site (lighting schedule).
2. A diagram(s) or drawing(s) of the project site showing the approximate location of the installation/placement of the luminaire and its direction and angle (luminaire location).

Verification:

- a. The project owner shall submit a light pollution control plan to the CPM for approval and simultaneously to the Director of Planning and Natural Resources Department for the County of Kern for review and comment ninety (90) days prior to executing a contract to purchase permanent outdoor luminaires for the project. The CPM shall provide the Director of Planning and Natural Resources Department at least 30 days to review the plan and provide comments to the applicant and the CPM.
- b. If the CPM determines the light pollution control plan requires a revision, the project owner shall provide to the CPM a plan with the specified revision(s) for approval by the CPM before any action or activity with the vendor is executed. Any revision to the plan must be approved by the CPM.
- c. The project owner shall notify the CPM when the installation of the luminaires has been completed and are ready for inspection. After inspection if the CPM requires a modification to a luminaire(s) (e.g., design, installation, location), the project owner shall have 30 days after receiving the notification to complete the modification and request a follow-up inspection.
- d. If a light and glare complaint is filed with the project owner within 48 hours of receiving the complaint, the project owner shall supply the CPM with a completed complaint resolution form report as specified in the **Compliance** Conditions of Certification, a proposal to resolve the complaint and time schedule for resolution. The project owner shall notify the CPM within 48 hours after completing/resolving the complaint.

Compliance Conditions of Certification

COM-1 Unrestricted Access. The project owner shall take all steps necessary to ensure that the CPM, responsible CEC staff, and delegate agencies or consultants have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on site for the purpose of conducting audits, surveys, inspections, or general or closure-related site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, whether such visits are by the CPM in person or through representatives from CEC staff, delegated agencies, or consultants.

COM-2 Compliance Record. The project owner shall maintain electronic copies of all project files and submittals related to the CEC license on site, or at an alternative site approved by the CPM, for the operational life and closure of the project. The files shall also contain at least one hard copy of:

1. the facility's Supplemental AFC;
2. all amendment petitions and CEC orders;
3. all site-related environmental impact and survey documentation;
4. all appraisals, assessments, and studies for the project;
5. all finalized original and amended structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals, and training documentation required by the Conditions of Certification or applicable LORS.

The CEC staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files maintained pursuant to this condition.

COM-3 Compliance Verification Submittals. Verification lead times associated with the start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification. The verification procedures, unlike the

conditions, may be modified as necessary by the CPM after notice to the project owner.

A cover letter or cover email from the project owner or an authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. The cover letter subject line shall identify the project by AFC number, cite the appropriate Condition of Certification number(s), and give a brief description of the subject of the submittal. When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and the Conditions of Certification applicable.

All reports and plans required by the project's Conditions of Certification shall be submitted in a searchable electronic format (.pdf, MS Word or Excel, etc.) and include standard formatting elements such as a table of contents identifying by title and page number each section, table, graphic, exhibit, or addendum. All report and/or plan graphics and maps shall be adequately scaled and shall include a key with descriptive labels, directional headings, a bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM and that the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be submitted electronically by email.

COM-4 Pre-Construction Matrix and Tasks Prior to Start of Construction.

Prior to construction, the project owner shall submit to the CPM a compliance matrix including only those conditions that must be fulfilled before the start of construction. The matrix shall be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first, and shall be submitted in a format similar to the description below.

Site mobilization and construction activities shall not start until the following have occurred:

1. the project owner has submitted the pre-construction matrix and all compliance verifications pertaining to pre-construction Conditions of Certification; and
2. the CPM has issued a Notice to Proceed letter to the project owner.

The deadlines for submitting various compliance verifications to the CPM allow staff sufficient time to review and comment on, and, if necessary, also allow the project owner to revise the submittal in a timely manner. These

procedures help ensure that project construction proceeds according to schedule. Failure to submit required compliance documents by the specified deadlines may result in delayed authorizations to commence various stages of the project.

If the project owner anticipates site mobilization immediately following project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting items required in compliance verifications prior to these authorizations is at the owner's own risk. Any approval by CEC staff prior to project certification is subject to change based upon the Decision, or amendment thereto, and early staff compliance approvals do not imply that the CEC will certify the project for actual construction and operation.

COM-5 Compliance Matrix. The project owner shall submit a compliance matrix to the CPM with each MCR and ACR. The compliance matrix shall identify:

1. the technical area (e.g., biological resources, facility design, etc.);
2. the condition number;
3. brief description of the verification action or submittal required by the Condition of Certification;
4. the date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Delegate Chief Building Official (DCBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition (e.g., "not started," "in progress" or "completed" (include the date)); and
8. if the Condition of Certification was amended, the updated language and the date the amendment was proposed or approved.

The CPM can provide a template for the compliance matrix upon request.

COM-6 Monthly Compliance Report (MCR). The first MCR is due 30 days following the filing to the docket of the Decision unless otherwise agreed to by the CPM.

The first MCR shall include the AFC number and an initial list of dates for each of the events identified on the Key Events List. (The Key Events List form is found at the end of this **Compliance Conditions and Compliance Monitoring Plan** section.) During pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR to the CPM within 10 business days after the end of each reporting month.

MCRs shall be submitted each month until construction is complete, and the final certificate of occupancy is issued by the DCBO. MCRs shall be clearly identified for the month being reported. The MCR shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific Conditions of Certification to be submitted along with the MCR. Each of these items shall be identified in the transmittal letter, as well as the conditions they satisfy, and submitted as attachments to the MCR;
3. an initial, and thereafter updated, compliance matrix showing the status of all Conditions of Certification;
4. a list of Conditions of Certification that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;
5. a list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to Conditions of Certification;
7. a listing of any filings submitted to, and permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months; the project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with Conditions of Certification;
9. a listing of the month's additions to the on-site compliance file; and

10. a listing of incidents, complaints, notices of violation, official warnings, and citations received during the month; a list of any incidents that occurred during the month, a description of the actions taken to date to resolve the issues; and the status of any unresolved actions noted in the previous MCRs.

COM-7 Kern County Notification of Key Events. The Kern County Planning and Natural Resources Department shall be provided contact information including cell phone, office numbers and e-mails for the Project Owner's Representatives(s) and the CEC Compliance Project Manager (CPM).

The Kern County Planning and Natural Resources Department, Kern County Fire Department, and Kern County Public Works Department shall all be notified by e-mail for the following milestones:

- a. Commencement of any road construction
- b. Moving equipment for grading onto the site
- c. Beginning of any blasting or excavation
- d. Filling of the retention pond
- e. Completion of excavation
- f. Completion of facilities

COM-8 Periodic and Annual Compliance Report (ACRs). After construction is complete, the project must submit searchable electronic ACRs to the CPM, as well as other periodic compliance reports (PCRs) required by the various technical disciplines. ACRs shall be completed for each year of commercial operation and are due each year on a date agreed to by the CPM. Other PCRs (e.g. quarterly reports, etc. to monitor closure compliance), may be specified by the CPM. The searchable electronic copies may be filed on an electronic storage medium or by e-mail, subject to CPM approval. Each ACR must include the AFC number, identify the reporting period, and contain the following:

- 1. an updated compliance matrix which shows the status of all Conditions of Certification (fully satisfied conditions do not need to be included in the matrix after they have been reported as completed);
- 2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

3. a summary report of actions taken under its Maintenance Program during the year;
3. documents required by specific Conditions of Certification to be submitted along with the ACR; each of these items shall be identified in the transmittal letter with the Condition of Certification it satisfies, and submitted as an attachment to the ACR;
4. a cumulative list of all post-certification changes approved by the CEC or the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings submitted to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the Site Contingency Plan, including amendments and plan updates; and
10. a listing of complaints, incidents, notices of violation, official warnings, and citations received during the year, a description of how the issues were resolved, and the status of any unresolved complaints.

COM-9 Confidential Information. Any information that the project owner designates as confidential shall be submitted to the CEC's Executive Director with an application for confidentiality, pursuant to Title 20, California Code of Regulations, section 2505(a). Any information deemed confidential pursuant to the regulations will remain undisclosed, as provided in Title 20, California Code of Regulations, sections 2501 *et seq.*

COM-10 Annual Energy Facility Compliance Fee. Pursuant to the provisions of section 25806 (b) of the Public Resources Code, the project owner is required to pay an annually adjusted compliance fee. Current compliance fee information is available on the CEC's website at http://www.energy.ca.gov/siting/filing_fees.html. The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the CEC docket its Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-11 Amendments, Staff-Approved Project Modifications, Ownership/Operational Control Changes, Staff and Project Owner Jointly Initiated Amendments and Verification Changes. The project owner shall petition the CEC, pursuant to Title 20, California Code of Regulations, section 1769, to modify the design, operation, or performance requirements of the project or linear facilities, or to transfer ownership or operational control of the facility. The CPM will determine whether staff approval will be sufficient, or whether Commission approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1769. Section 1769 details the required contents for a petition to amend (PTA) a CEC Decision. In reviewing a petition to modify the project, the CEC may require the project owner provide additional information, including responses to categories in Title 20, Appendix B, relevant to the project change.

A project owner is required to submit a \$5,000 fee for every petition to amend a previously certified facility, pursuant to section 25806(e) of the Public Resources Code. If the actual amendment processing costs exceed \$5,000, the total PTA reimbursement fees owed by a project owner will not exceed the AFC cap of \$1,068,853, adjusted annually.

Staff and Project Owner Jointly Initiated Amendments, and Verification Changes, are exempt from section 25806(e) and, therefore, do not require a filing fee.

COM-12 Reporting of Complaints, Notices, and Citations. Prior to the start of construction or closure, the project owner shall send a letter to property owners within one mile of the project, notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it must include automatic answering with date and time stamp recording.

The project owner shall respond to all recorded complaints within 24 hours or the next business day. The project owner shall post the telephone number onsite and make it easily visible to passersby during construction, operation, and closure. The project owner shall provide the contact information to the CPM and promptly report any disruption to the contact system or telephone number change to the CPM, who will provide it to any persons contacting him or her with a complaint.

Within five business days of receipt, the project owner shall report, and provide copies to the CPM, all complaints, including, but not limited to, noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints

shall be recorded on the form provided in the **Noise and Vibration** Conditions of Certification. All other complaints shall be recorded on the complaint form at the end of this compliance plan. Additionally, the project owner must include in the next MCR, ACR, or PCR, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.

COM-13 Emergency Response Site Contingency Plan. No less than 60 days prior to the start of construction (or other CPM-approved) date, the project owner shall submit, for CPM review and approval, an Emergency Response Site Contingency Plan (Contingency Plan). Subsequently, no less than 60 days prior to the start of commercial operation, the project owner shall update (as necessary) and resubmit the Contingency Plan for CPM review and approval. The Contingency Plan shall evidence a facility's coordinated emergency response and recovery preparedness for a series of reasonably foreseeable emergency events. The CPM may require Contingency Plan updating over the life of the facility. Contingency Plan elements include, but are not limited to:

1. a site-specific list and direct contact information for persons, agencies, and responders to be notified for an unanticipated event;
2. a detailed and labeled facility map, including all fences and gates, the windsock location (if applicable), the on and off-site assembly areas, and the main roads and highways near the site;
3. a detailed and labeled map of population centers, sensitive receptors, and the nearest emergency response facilities;
4. a description of the on-site, first response and backup emergency alert and communication systems, site-specific emergency response protocols, and procedures for maintaining the facility's contingency response capabilities, including a detailed map of interior and exterior evacuation routes, and the planned location(s) of all permanent safety equipment;
5. an organizational chart including the name, contact information, and first aid/emergency response certification(s) and renewal date(s) for all personnel regularly on-site;
6. a brief description of reasonably foreseeable, site-specific incidents and accident sequences (on- and off-site), including response procedures and protocols and site security measures to maintain twenty-four-hour site security;

7. procedures for maintaining contingency response capabilities; and
8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific Conditions of Certification for the technical areas of **Public Health, Solid Waste Management, Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire, and Worker Safety and Fire Protection**).

COM-14 Incident-Reporting Requirements. The project owner shall notify the CPM within one hour after it is safe and feasible, of any incident at the facility that results in any of the following:

1. An event of any kind that causes a "Forced Outage" as defined in the California ISO tariff;
2. The activation of onsite emergency fire suppression equipment to combat a fire;
3. Any chemical, gas or hazardous materials release that could result in potential health impacts to the surrounding population; or create an offsite odor issue; and
4. Notification to, or response by, any off-site emergency response federal, state or local agency regarding a fire, hazardous materials release, onsite injury, or any physical or cyber security incident.

Notification shall describe the circumstances, status, and expected duration of the incident. If warranted, as soon as it is safe and feasible, the project owner shall implement the safe shutdown of any non-critical equipment and removal of any hazardous materials and waste that pose a threat to public health and safety and to environmental quality (also, see specific Conditions of Certification for the technical areas of **Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire, and Solid Waste Management**).

Within six business days of the incident, the project owner shall submit to the CPM a detailed incident report that includes, as applicable, the following information:

1. A brief description of the incident, including its date, time, and location;

2. A description of the cause of the incident, or likely causes if it is still under investigation;
3. The location of any off-site impacts;
4. Description of any resultant impacts;
5. A description of emergency response actions associated with the incident;
6. Identification of responding agencies;
7. Identification of emergency notifications made to federal, state, and local agencies;
8. Identification of any hazardous materials released and an estimate of the quantity released;
9. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;
10. Fines or violations assessed or being processed by other agencies;
11. Name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event; and
12. Corrective actions to prevent a recurrence of the incident.

After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within 48 hours of a request. The project owner shall maintain all incident report records for the life of the project, including closure.

If the project owner requests that an incident notification or report be designated as a confidential record and not publicly disclosed, the project owner shall submit copies of notices or reports with an application for confidential designation in accordance with CEC regulations.

COM-15 Non-Operation and Repair/Restoration Plans. If the facility ceases operation temporarily (excluding planned and unplanned maintenance for longer than one week (or other CPM approved date), but less than three months (or other CPM-approved date), the project owner shall notify the CPM. Notice of planned non-operation shall be given at least two weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. Identification of operational and non-operational components of the plant;
2. A detailed description of the repair and inspection or restoration activities;
3. A proposed schedule for completing the repair and inspection or restoration activities;
4. An assessment of whether the proposed activities would require changing, adding, and/or deleting any Conditions of Certification, and/or would cause noncompliance with any applicable LORS; and
5. Planned activities during non-operation, including any measures to ensure continued compliance with all Conditions of Certification and LORS.

Written monthly updates (or other CPM-approved intervals) to the CPM for non-operational periods, until operation resumes, shall include:

1. Progress relative to the schedule;
2. Developments that delayed or advanced progress or that may delay or advance future progress;
3. any public, agency, or media comments or complaints; and
4. Projected date for the resumption of operation.

During non-operation, all applicable Conditions of Certification and reporting requirements remain in effect. If, after one year from the date of the project owner's last report of productive repair/restoration plan work, the facility does not resume operation or does not provide a plan to resume operation, the Executive Director may assign suspended status to the facility and recommend commencement of permanent closure activities. Within 90 days of the Executive Director's determination, the project owner shall do one of the following:

1. If the facility has a closure plan, the project owner shall update it and submit it for CEC review and approval; or
2. If the facility does not have a closure plan, the project owner shall develop one consistent with the requirements in this Compliance Plan and submit it for CEC review and approval.

COM-16 Facility Closure Planning. To ensure that a facility's eventual permanent closure and maintenance do not pose a threat to public health and safety and/or to environmental quality, the project owner shall coordinate with the CEC to plan and prepare for eventual permanent closure.

Final Closure Plan

a. No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, or upon an order compelling permanent closure, the project owner shall submit for CEC review and approval a Final Closure Plan, which includes any site maintenance and monitoring.

Prior to submittal of the facility's Final Closure Plan to the CEC, the project owner and the CPM may hold a meeting to discuss the specific contents of the plan.

b. Final Closure Plan contents include, but are not limited to:

1. a statement of specific Final Closure Plan objectives;
2. a statement of qualifications and resumes of the technical experts proposed to conduct the closure activities, with detailed descriptions of previous power plant closure experience;
3. identification of any facility-related installations or maintenance agreements not part of the CEC certification, designation of who is responsible for these, and an explanation of what will be done with them after closure;
4. a comprehensive scope of work for permanent plant closure and site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:
 - a. dismantling and demolition;
 - b. recycling and site clean-up;
 - c. impact mitigation and monitoring;
 - d. site remediation and/or restoration;
 - e. exterior maintenance, including paint, landscaping and fencing;
 - f. site security and lighting; and
 - g. any contingencies.
5. a schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the CEC-certified project;
6. an electronic submittal package of all relevant plans, drawings, risk assessments, and maintenance schedules and/or reports, including an above and below-ground infrastructure inventory map and registered engineer's or DCBO's assessment of demolishing the facility;
7. additionally, for any facility that permanently ceased operation prior to submitting a Final Closure Plan and for which only minimal or no maintenance has been done since, a comprehensive condition report focused on identifying potential hazards;

8. all information additionally required by the facility's Conditions of Certification applicable to plant closure;
9. an equipment disposition plan, including:
 - a. recycling and disposal methods for equipment and materials; and
 - b. identification and justification for any equipment and materials that will remain on-site after closure.
10. a site disposition plan, including but not limited to proposed rehabilitation, restoration, and/or remediation procedures, as required by the Conditions of Certification and applicable LORS, and site maintenance activities;
11. identification and assessment of all potential direct, indirect, and cumulative impacts and proposal of mitigation measures to reduce significant adverse impacts to a less-than-significant level. Potential impacts to be considered shall include, but not be limited to:
 - c. traffic;
 - d. noise and vibration;
 - e. soil erosion;
 - f. air quality degradation;
 - g. solid waste;
 - h. hazardous materials;
 - i. waste water discharges; and
 - j. contaminated soil;
12. identification of all current Conditions of Certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and
13. proposed strategies for achieving and maintaining compliance during closure; and
14. updated mailing list and Listserv of all responsible agencies, potentially interested parties, and property owners within one mile of the facility.
15. description of and schedule for security measures and safe shutdown of all non-critical equipment and removal of hazardous materials and waste (see Conditions of Certification for **Public Health, Solid Waste Management, Hazards, Hazardous Materials Management, Hazardous Waste, and Wildfire, and Worker Safety and Fire Protection**).

If the CEC-approved Final Closure Plan procedures are not initiated within one year of the plan approval date, it shall be updated and re-submitted to the CEC for supplementary review and approval. If a project owner initiates but then suspends closure activities, and the suspension continues for longer than one year, the CEC may initiate corrective actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

Appendix A Conditions of Certification

Attachment A Waste Discharge Requirements and Monitoring and Reporting for Willow Rock Energy Storage Center

**WASTE DISCHARGE REQUIREMENTS AND
MONITORING AND REPORTING
FOR
WILLOW ROCK ENERGY STORAGE CENTER**

Kern County

The discharges of waste from the Willow Rock Energy Storage Center project (Project) must be in accordance with the requirements contained in these Waste Discharge Requirements (WDRs). These WDRs are applicable to the following types of wastes: boring wastes generated during shaft construction, fill and excavation wastes discharged to surface waters during gentle construction, and stormwater generated during construction. GEM A-CAES LLC, a subsidiary of Hydrostor, Inc., is referred to as the Applicant.

A. DEFINITIONS

1. "Waste" includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.
2. "Boring waste" is drilling mud, cuttings from well-drilling operations, or any other borings in uncontaminated soils.
3. "Waters of the state" means any surface water or groundwater, including saline waters, within the boundaries of the state.
4. "Stormwater" is runoff resulting from recent precipitation events. Runoff flowing over construction sites can pick up pollutants like sediment, debris, and chemicals, which can then be carried offsite or directly into water bodies.

B. PROHIBITIONS

1. Discharge of any waste to surface waters is prohibited, except as authorized by these WDRs.
2. Discharge of waste must not cause pollution, contamination, or nuisance as defined in California Water Code Section 13050.
3. Discharge of waste that is classified as "hazardous," as defined in California Code of Regulations (CCR), title 23, section 2521, or classified as "designated," as defined in Water Code section 13173, is prohibited.

4. Discharge of waste that causes or contributes to the exceedance of an applicable water quality objective in the Water Quality Control Plan for the Lahontan Region (Basin Plan) is prohibited.
5. Where any applicable water quality objective contained in the Basin Plan is already being violated, the discharge of waste that causes further degradation or pollution is prohibited.
6. Discharge of waste causing the spread of groundwater contamination is prohibited.
7. Discharge of oil, gasoline, diesel fuel, any petroleum derivative, any toxic chemical, or hazardous waste is prohibited.
8. Discharge of water main, water storage tank, water hydrant, pipeline flushing, or hydrostatic testing water from tanks or pipelines that have been used to store or convey any medium other than potable water is prohibited, unless the Applicant has demonstrated to the CEC that all residual pollutant concentrations have been reduced to levels below applicable groundwater quality objectives in the Basin Plan.

C. REQUIREMENTS FOR BORING WASTE DISCHARGES

Boring waste discharges will stem from the boring of up to four vertical shafts to 2,100 feet below ground surface. The borings will be created using a combination of conventional shaft sinking and raise boring or blind boring. For conventional and raised boring makeup water is not required, and solid rock is produced. For blind boring municipal makeup water and cuttings will be used as drill mud. Blind boring will generate free liquid drill cuttings that must be discharged to the ground into temporary lined ponds.

1. Discharges of boring waste must be discharged to onsite temporary lined ponds and must not contain halogenated solvents.
2. The temporary lined ponds must be sufficiently sized and constructed of impervious materials to contain the boring waste without overtopping or through leakage from the liner.
3. The temporary lined pond(s) must be protected against erosion, overland runoff, and other impacts resulting from storm events.
4. During drilling operations, the Applicant must monitor the boring waste discharges as follows. For every 5,000 cubic yards of drill cuttings, collect at least one representative grab sample of the following waste types 1) pond solids, 2) pond semi-solids (drilling mud-water mixture), and 3) pond water (liquid floating on top of the solids and semi-solids), and analyze each sample by the following test methods: CCR, Title 22 metals EPA method 6020 and pH standard EPA method 150.1. The pond water must also be analyzed for total petroleum hydrocarbons (diesel range) EPA method 8015M, oil and grease EPA method 1664, chloride EPA method 300.0, Methylene Blue Active Substances (MBAS) SM 5540C, and total dissolved solids SM2540C.
5. For the data collected in C.4, the Applicant must evaluate the analytical results for the pond solids to determine if they are hazardous or non-hazardous waste. A concentration of a CCR, Title 22 metal that exceeds ten times the corresponding value of the total threshold

limit concentration (TTLC) is called a “trigger concentration” for that metal. These “trigger concentrations” are listed in Table 1. The following criteria must be used to evaluate the data.

- a. If the concentration of a metal is equal to or greater than the TTLC limit for that metal, then the material is a California (non-RCRA) hazardous waste.
- b. If the concentration of a metal is less than the TTLC limit, and less than 10 times the soluble threshold limit concentration procedure (STLC) limits, then the material is non-hazardous waste.
- c. If the concentration of a metal is less than the TTLC limit but is equal to or greater than 10 times the STLC limit, then the sample must also be analyzed by the STLC method.
- d. If the STLC results exceed an STLC trigger, the material is hazardous waste.
- e. If analytical results indicate drill cuttings, pond water, or pond solids concentrations are hazardous waste, boring waste discharges must cease, the Applicant must notify the CEC in accordance with Provision No. F.8I ad. The Applicant must submit a plan to the CEC proposing management and offsite disposal of the hazardous waste.

TABLE 1 – TTLC AND STLC LIMITS AND TRIGGER VALUES			
Metal	TTLC Limit (mg/kg¹ - wet weight)	STLC Limit (mg/L²)	STLC Limit x 10 Trigger Value (mg/L)
Antimony	500	15	150
Arsenic	50	5	50
Barium	10,000	100	1,000
Beryllium	75	0.75	7.5
Cadmium	100	1	10
Chromium III	2,500	5	50
Chromium IV	500	5	50
Cobalt	8,000	80	800
Copper	2,500	25	250
Lead	1,000	5	50
Mercury	20	0.2	2
Molybdenum	3,500	350	3,500
Nickel	2,000	20	200
Selenium	100	1	10
Silver	500	5	50
Thalium	700	7	70
Vanadium	2,400	24	240
Zinc	5,000	250	2,500

1 – mg/kg, milligram per kilogram

2 – mg/L, milligram per liter

6. The Applicant must comply with the General Monitoring Provisions in Section G.

7. At the end of drilling operations, the Applicant must:
 - a. Remove all free liquid from the temporary lined pond; and
 - b. Collect and analyze a representative sample of the pond solids in accordance with C.4 and then evaluate the analytical data in accordance with C.5.
 - i. Should analytical testing indicate that the boring waste is hazardous, the residual wastes including the liner must be disposed of at a waste disposal facility capable of accepting hazardous waste.
 - ii. Should the analytical testing indicate that the boring waste is non-hazardous, the residual wastes and liner materials can be disposed of onsite if all the following criteria are met: (1) the disposal site is greater than 5 feet above local groundwater level, (2) the liner materials are folded and punctured, (3) the waste and liner materials are covered by a minimum of 1 foot of clean soil, (4) the disposal site is located at least 100 feet from the nearest surface water, and (5) the area is graded to promote sheet flow and prevent ponding.

D. REQUIREMENTS FOR FILL AND EXCAVATION DISCHARGES TO SURFACE WATERS

Impacts to ephemeral streams will result from fill and excavation activities associated with construction access and staging areas for the installation of the power poles along the gen-tie electrical transmission line.

1. The authorized impacts to ephemeral streams total 0.11 acres and 1,705 linear feet.
2. The Applicant must restore the impacted areas by regrading to pre-project contours and revegetating with an appropriate native seed mix.
 - a. Adaptive measures such as reseeding, supplemental irrigation, and removal of non-native plant species must be taken to promote success of the revegetation.
 - b. Annual monitoring of the restored areas must continue until all the revegetation success criteria have been met.
 - c. Revegetation success criteria are:
 - i. At least 70% vegetation cover of native species;
 - ii. Less than 5% vegetation cover of non-native species; and
 - iii. Absence of rills and other signs of erosion.
3. There are no permanent impacts, therefore compensatory mitigation is not required.

E. REQUIREMENTS FOR STORMWATER DISCHARGES

Stormwater must be managed throughout construction to minimize erosion and the discharge of sediment laden water offsite. Temporary sediment and erosion control best management practices (BMPs) must be implemented until permanent soil stabilization is in place and good

housekeeping practices must be implemented to minimize the potential for non-stormwater discharges to degrade water quality.

1. The Applicant must install appropriate BMPs including construction storm water controls designed to minimize degradation of water quality. BMPs will include, but not be limited to, fiber rolls staked or weighted down with sand or gravel bags, silt fencing, a temporary detention basin, and/or weed-free hay bales staked to the ground with rebar or other suitable device.
2. Prior to the initiation of any construction related activities, the Applicant must develop a BMP implementation plan (BMP Plan) and install temporary erosion control facilities to prevent transport of earthen materials and other wastes off the property. Guidance for developing the BMP Plan is provided in Appendix 1, Best Management Practices Plan.
3. The Applicant must implement the BMP Plan upon commencement of construction.
4. The Applicant must at all times fully comply with the BMP Plan.
5. All land disturbing activities must be conducted in accordance with the following:
 - a. Temporary Construction BMPs
 - i. Surplus or waste materials must not be placed in drainage ways or within the 100-year flood plain of surface waters.
 - ii. All loose piles of soil, silt, clay, sand, debris, or earthen materials must be protected in a reasonable manner to prevent discharge of pollutants to waters of the State. Material stockpiles should be placed on the upgradient side of excavation whenever possible. Stockpiles may also be protected by covering to prevent contact with precipitation and by placing sediment barriers around the stockpiles.
 - iii. After completion of a construction project, all surplus or waste earthen material must be removed from the site and deposited at a legal point of disposal.
 - v. All non-construction areas (areas outside of the construction zone that will remain undisturbed) must be protected by fencing or other means to prevent unnecessary encroachment outside the active construction zone.
 - vi. During construction, temporary erosion control facilities (e.g., impermeable dikes, filter fences, weed-free straw bales, etc.) must be used as necessary to prevent discharge of earthen materials from the site during periods of precipitation or runoff.
 - vii. Control of run-on water from offsite areas must be managed (protected, diverted, treated, etc.) to prevent such water from degrading before it discharges from the site.
 - vii. Where construction activities involve the crossing and/or alteration of a stream channel, such activities require a prior written agreement with the California Department of Fish and Wildlife and shall be timed whenever possible to occur during the period in which streamflow is expected to be lowest for the year. Other control measures may be used as necessary to prevent adverse effects from work in surface waters.

- b. Permanent Construction BMPs
 - i. Impervious surfaces must be constructed with infiltration trenches or comparable infiltration structures along downgradient sides to infiltrate the increase in runoff resulting from the new impervious surfaces. Infiltration structures should also be constructed to accept runoff from structural (roof top) drip lines. Other control measures may be considered if design and/or site constraints are such that construction of infiltration devices is infeasible.
 - ii. Where possible, existing drainage patterns must not be significantly modified.
 - iii. Drainage swales disturbed by construction activities must be stabilized by the addition of crushed rock or riprap, as necessary, or other appropriate stabilization methods.
 - iv. Revegetated areas must be regularly and continually maintained in order to assure adequate growth and root development. Physical erosion control measures (controls other than live vegetation) must be placed on a routine maintenance and inspection program to provide continued erosion control integrity.
- 6. Should it be determined by the Applicant, CEC, or Lahontan Water Board staff that stormwater discharges and/or authorized non-stormwater discharges are causing or contributing to a violation of an applicable water quality standard, the Applicant must:
 - a. Implement corrective measures immediately following discovery that water quality standards were violated.
 - b. Revise the BMP Plan and monitoring procedures to incorporate: 1) additional BMPs that have been and will be implemented; 2) the implementation schedule; and 3) any additional monitoring needed.
- 7. An inspection of the construction site must be made daily during active construction and monthly during long periods of inactivity (e.g. winter), by the Applicant, resident engineer, superintendent, general contractor, or equivalent. The purpose of the inspection is to discover potential water quality problems at the construction site so that the Applicant can implement corrective measures. The following items must be inspected at the site, as applicable:
 - a. Damaged containment dikes or erosion fencing;
 - b. Unauthorized access by vehicles and/or sediment tracking off the site;
 - c. Boundary fence damage or removal;
 - d. Disturbed areas with no erosion control protection;
 - e. Evidence of any sediment leakage through erosion control fencing or containment dikes;
 - f. Soil piles unprotected or located in drainage ways;
 - g. Spilled chemicals, paints, fuels, oils, sealants, etc.;

- h. Upstream runoff diversion structures in place and operational;
- i. Any signs of downstream erosion from runoff discharges; and
- j. Sediment accumulation within onsite stormwater drainage facilities.

F. STANDARD PROVISIONS

1. The Applicant must at all times fully comply with the engineering plans, specifications, and technical reports developed for the Project and submitted to CEC as part of the Preliminary Staff Assessment.
2. A copy of these WDRs must be kept at the discharge facility for reference by operating personnel. Key operating and site management personnel must be familiar with its content.
3. The Applicant must properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) at all times to assure compliance with these waste discharge requirements. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures.
4. The Applicant must allow staff of the CEC or the Lahontan Water Board, upon presentation of credentials and other documents as may be required by law, to do the following:
 - a. Enter upon the Applicant's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of these WDRs.
 - b. Access and copy, at reasonable times, any records that must be kept under the conditions of these WDRs.
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under these WDRs.
 - d. Sample or monitor, at reasonable times, for the purposes of assuring compliance with these WDRs or as otherwise authorized by the CWC any substances or parameters at any location.
5. The Applicant must take all necessary steps to minimize or correct any adverse impact on the environment resulting from noncompliance with these WDRs, including such accelerated or additional monitoring as may be necessary to determine the nature and impact of the noncompliance.
6. All reports, and other documents required by these WDRs, and other information requested by the CEC must be signed by a member or manager given signing authority by the operating agreement of the Limited Liability Company or by a duly authorized representative of that person.
7. Any person signing a document under Provision No. F.6 makes the following certification, whether written or implied:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based

on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”

8. The Applicant must immediately report any noncompliance potentially endangering public health or the environment. Any information must be provided orally to the CEC within 24 hours of the time the Applicant becomes aware of the occurrence. A written report shall also be submitted to the CEC within five (5) calendar days of the time the Applicant becomes aware of the occurrence. The written report must contain (a) a description of the noncompliance and its cause; (b) the period of the noncompliance event, including dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and (c) steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.
9. The Applicant must report all instances of noncompliance not reported under Provision No. F.8 at the time monitoring reports are submitted. The reports must contain any applicable information listed in Provision No. F.8.
10. The Applicant must give notice to the CEC as soon as possible of any planned alterations to the engineering plans, specifications, and technical reports developed for the Project and submitted as part of the Preliminary Staff Assessment that may change the nature or concentration of pollutants in the discharges.

G. GENERAL MONITORING PROVISIONS

1. All samples must be representative of the volume and nature of the discharge or matrix of material sampled. The Applicant must use clean sample containers and sample handling, storage, and preservation methods in accordance with approved U.S. EPA analytical methods or as recommended by the selected analytical laboratory. All analytical samples must be labeled and records maintained to show the name of the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample.
2. All samples collected for laboratory analyses must be preserved as required and submitted to the laboratory within the required holding time appropriate for the analytical method used and the constituents analyzed. All samples submitted to a laboratory for analysis must be identified in a properly completed and signed chain of custody form containing the sampler, date, time, sample location, sample type, collection method, bottle type, and any preservative used for each sample. The chain of custody form must also contain custody information, including the date, time, transport method, and to whom samples were relinquished.
3. Consistent with Water Code section 13176, data produced and reports submitted for compliance with WDRs or this monitoring and report program must be generated by a laboratory with accreditation from the State Water Board, Division of Drinking Water,

Environmental Laboratory Accreditation Program (ELAP), where accreditation is specific to the analyses required, or the laboratory must hold a valid certificate of accreditation for equivalent analytical test methods validated for the intended uses and approved by the State Water Board or Lahontan Regional Water Board. The laboratory must include quality assurance/quality control data in all data reports and submit electronic data as required by the State Water Board and regional water boards. Data generated using field tests are exempt pursuant to California Water Code Section 13176.

4. Field instruments may be used to test field parameters (such as for pH, electrical conductivity, and dissolved oxygen) provided that the operator is trained in the proper use of the instrument and each instrument is serviced and/or calibrated at the recommended frequency by the manufacturer and in accordance with manufacturer instructions.
5. All sample and analysis field logs, laboratory reports, and quality assurance/ quality control data must be reported with the sample results to which it applies. The reports must include applicable information such as the method, equipment, analytical detection, quantitation limits, recovery rates, an explanation for any recovery rate that is outside method specifications, results of method blanks, results of matrix spikes and surrogate samples, and the frequency of quality control analysis. Sample results must be reported unadjusted for blank results or spike recovery. In cases where contaminants are detected in the quality assurance/quality control samples (e.g., laboratory blanks), the accompanying sample results must be appropriately flagged.
6. If the Applicant monitors any constituent more frequently than required by the WDRs, the monitoring results must be submitted.
7. The Applicant must retain records of all monitoring information including all calibration and maintenance records, copies of all reports required by these WDRs, and records of all data used to complete the application for these WDRs. Records must be maintained for a minimum of three years from the date of the sample, measurement, or report.

H. REPORTING REQUIREMENTS

1. The Applicant must comply with the following reporting requirements for boring waste discharges described in Section C.
 - a. Semi-annual monitoring reports, including all water, drill cuttings, and pond solids monitoring and laboratory analytical data collected during the corresponding reporting period, must be submitted by the report due date to the CEC.

Monitoring Reporting Period	Report Due Date
January 1 – June 30	August 15
July 1 – December 31	February 15

- b. Each semi-annual report must include, but not limited to, the following information.
 - i. Summary of drilling, operations, and maintenance activities

- ii. All data collected during the reporting period
 - iii. Tabulated results of sampling and laboratory analyses for water, drill cuttings, and pond solids
 - iv. A map and/or aerial photograph showing the Project's perimeter, boring locations (mine shafts), temporary lined ponds, staging area, and sampling points
 - v. Copies of all field monitoring and sampling data sheets, and analytical laboratory reports (e.g. chain of custody, field logs, equipment calibration logs)
2. Following completion of Project construction, the Applicant must submit a Project Completion Report to the CEC. The report must include the following information:
- a. Details on any modification from the construction plans to the proposed temporary lined ponds, fill and excavation activities in surface waters, construction stormwater management, and/or disposal facilities.
 - b. Details on any changes to the amount of impervious coverage for this Project.
 - c. Any significant problems which occurred during construction and remedial measures taken.
 - d. The area and length of channel of permanent and temporary impacts to waters of the state cumulative for the entire Project.
 - e. Documentation that that revegetation success criteria have been completed.
 - f. A summary of the activities related to construction storm water controls and the BMPs used.
 - g. Certification that the Project is in compliance with WDRs.

APPENDIX 1

BEST MANAGEMENT PRACTICES PLAN GUIDANCE

The purpose of the Best Management Practices (BMP) Plan is to evaluate potential sources of sediment and other pollutants at the construction site and put controls in place that will effectively prevent pollutant discharges to surface water and groundwater. The following general pollution control elements should be addressed in the BMP Plan:

1. Retain soil and sediment on the construction site;
2. Prevent non-stormwater discharges that would discharge pollutants off site;
3. Prevent the discharge of other pollutants associated with construction activities to land or surface waters;
4. Permanently stabilize disturbed soils; and
5. Minimize the effects of increased storm water runoff from impervious surfaces.

For detailed information on construction related BMPs, the EPA has developed the following document: Developing Your Stormwater Pollution Prevention Plan (https://www.epa.gov/sites/default/files/2015-10/documents/sw_swppp_guide.pdf).

Additional information may also be obtained by contacting the Lahontan Regional Water Quality Control Board at Lahontan@waterboards.ca.gov or at 760-241-6583.

Specific guidance for completing the BMP Plan is provided below.

TEMPORARY EROSION CONTROL

This element of the BMP Plan addresses temporary erosion control or soil stabilization measures to be implemented during the time while active construction and land disturbing work is active. The most efficient way to address erosion control is to preserve existing vegetation where feasible, limit disturbance, and stabilize and revegetate disturbed areas as soon as possible after grading or construction. Use of temporary erosion control measures is especially important on large, graded sites where soil exposure to rainfall and wind can cause significant soil loss if left unprotected during the time active construction activities are conducted. Some of these measures may overlap with the permanent soil stabilization measures discussed later in the section. Until permanent vegetation is established, temporarily covering the soil is the most cost-effective and expeditious method to prevent and minimize erosion.

Indicate on the BMP Plan what methods will be used to prevent erosion from cut and fill slopes and other disturbed areas after grading activities are completed, but before permanent soil stabilization measures can be implemented. Options may include, but are not limited to:

- Covering with mulch
- Temporary seeding or planting

- Apply soil stabilizers or binders (tackifier)
- Placing fiber rolls/logs on bare slope
- Covering surfaces with erosion control blankets
- Diverting run off around disturbed areas using stabilized conveyances

SEDIMENT CONTROL

Sediment control BMPs are required at appropriate locations along the site perimeter and at all internal inlets to the storm drain system. Sediment controls used in combination with the erosion controls described above can effectively prevent the discharge of pollutants off site. Effective filtration devices, barriers, and settling devices shall be selected, installed and maintained properly. The sediment control plan must also include provisions to temporarily stabilize construction access points such that soil, sediment, and other construction related materials are not tracked out beyond the site perimeter.

Indicate on the BMP Plan what sediment controls will be used at the site. Options may include, but are not limited to:

Filter Barriers

- Fiber rolls/logs
- Silt fence
- Straw bale barriers
- Gravel inlet filters

Retention Structures

- Sediment traps
- Settling basins

Stabilized Access Points/Good Housekeeping

- Crushed rock
- Mulch
- Landing mats
- Frequent sweeping

STABILIZATION

All disturbed areas of the construction site must be stabilized once construction is complete. Disturbed areas include drainage ditches or channels. Stabilization means implementing permanent rather than temporary erosion controls. It is recommended to stabilize disturbed areas in inactive (no further land disturbance planned) portions of the site as soon as feasible.

Final stabilization for the purposes of Project Completion is satisfied when all soil disturbing activities are completed and either of the two following criteria are met:

1. A uniform vegetative cover with 70 percent coverage has been established; or
2. Equivalent stabilization measures have been employed. These measures include the use of such BMPs as mulch, erosion blankets, rip rap, fiber treatments, or other erosion resistant soil coverings or treatments.

Where background native vegetation covers less than 100 percent of the surface, such as in arid areas, the 70 percent coverage criteria is adjusted as follows: if the native vegetation on adjacent undisturbed areas covers 50 percent of the ground surface, 70 percent of 50 percent ($.70 \times .50 = 35$) would require 35 percent total uniform surface coverage.

Indicate on the BMP Plan what stabilization measures will be used at the site. Options may include, but are not limited to:

- Seeding and/or planting (including hydro mulching/seeding)
- Mulching (wood chips, gravel, other) in combination with seeding/planting
- Installing erosion blankets (typically used on steeper disturbed slopes or unlined drainage ditches in combination with permanent seeding/planting)
- Placing rip rap

NON-STORM WATER MANAGEMENT

Non-storm water discharges should be eliminated or reduced to the extent feasible. Certain non-storm water discharges (e.g. irrigation of vegetative erosion control measures, pipe flushing and testing) may be necessary for the completion of some construction projects and are authorized these WDRs. Other non-storm water discharges such as concrete washout, and driveway and street washing that would flush sediment or other pollutants to storm drains or surface waters are not allowed and would be a violation of these WDRs. Dewatering waste should be discharged to land and infiltrated. A separate permit may be necessary if dewatering waste must be discharged to surface waters due to site constraints.

Indicate on the BMP Plan how unauthorized non-storm water discharges will be controlled. Options include, but are not limited to:

- Approved off-site wash-out and wash-down areas
- Lined wash-out containment basins/traps
- Dewatering waste infiltration or containment

SPILL PREVENTION AND CONTROL

The BMP Plan must describe measures to prevent and control potential leaks/spills of petroleum products such as fuels and lubricating materials, and other potentially hazardous

materials. Secured storage areas for fuels and chemicals should be established and sufficient spill cleanup materials should be at the site to respond to accidental spills.

Indicate on the BMP Plan what spill prevention and control measures will be used. Options include, but are not limited to:

- Covered material storage
- Material storage containment (berms, lined surfaces, secondary containment devices, etc.)
- Regular equipment leak inspections
- Drip pans
- Absorbents

POST-CONSTRUCTION STORM WATER MANAGEMENT

Post-construction storm water controls are needed to reduce the impacts of adding impervious surfaces to the landscape and adding potential pollutant sources within storm water drainage areas. Additional impervious surfaces reduce storm water infiltration and storage and increase the volume and velocity of run off downstream from developed sites. Whenever possible, use of infiltration and treatment devices is encouraged. Design approaches that limit overall land disturbance and reduce the amount of impervious surfaces are encouraged. Additional post-construction BMPs should also be incorporated into projects as appropriate and be properly maintained.

Indicate on the BMP Plan what post-construction BMPs will be implemented. Options include, but are not limited to:

- Infiltration structures
- Detention/retention basins
- Storm water treatment vaults
- Biofilter BMPs (typically vegetated swales, strips, and buffers)
- Energy dissipation devices (structures designed to prevent erosion and slow water velocity associated with conveyance systems)
- Efficient irrigation systems
- Proper drain plumbing (e.g. ensuring that interior drains are not connected to a storm sewer system)

MAINTENANCE, INSPECTION, AND REPAIR

BMPs implemented at the site must be properly maintained to be effective. The BMP Plan shall include provisions to inspect and maintain all BMPs identified in the plan throughout the duration of the project. Sites that are inactive and winterized through the wet season should be checked periodically to ensure the site remains stable. For sites where construction activity is conducted through the wet season, the Applicant must ensure that BMPs remain effective.

Indicate on the BMP Plan how BMPs will be inspected and repaired in accordance with the following minimum program:

For inactive construction sites during wet season

- Cease construction through wet season and winterize

For active construction sites during wet season

- Inspect BMPs before and after storm events
- Inspect BMPs once each 24-hour period during extended storm events
- Implement repairs or design changes as soon as feasible depending upon worker safety and field conditions
- Have provisions to respond to failures and emergencies

Appendix A Conditions of Certification

Attachment B Sample Security Plan Affidavit for Project Owners

SAMPLE CERTIFICATION

Affidavit of Compliance for Project Owners

I, _____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for employment at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20_____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

Appendix A Conditions of Certification

Attachment C Security Plan Affidavit for Contractors

SAMPLE CERTIFICATION

Affidavit of Compliance for Contractors

I, _____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

(Company name)

for contract work at

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20_____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

Appendix A Conditions of Certification

Attachment D Hazardous Materials Affidavit for Vendors

SAMPLE CERTIFICATION **Affidavit of Compliance for Hazardous Materials Transport Vendors**

I, _____
(Name of person signing affidavit) (Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B:

(Company name)

for hazardous materials delivery to

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

(Signature of officer or agent)

Dated this _____ day of _____, 20__.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

Appendix A Conditions of Certification

Attachment E Noise Complaint Resolution Form

NOISE COMPLAINT RESOLUTION FORM

Willow Rock Energy Storage Center (21-AFC-02)		
NOISE COMPLAINT LOG NUMBER:		
Complainant's name and address:		
Phone number:		
Date complaint received:	Time complaint received: _	
Nature of noise complaint:		
Definition of problem after investigation by plant personnel:		
Date complainant first contacted:		
Initial noise level at 3 feet from noise source:	_____ dBA	Date:
Initial noise level at complainant's property:	_____ dBA	Date:
Final noise levels at 3 feet from noise source:	_____ dBA	Date:
Final noise level at complainant's property:	_____ dBA	Date: _
Description of corrective measures taken:		
Complainant's signature:		Date:
Date installation completed:		
Date first letter sent to complainant:	(copy attached)	
Date final letter sent to complainant:	(copy attached)	
This information is certified to be correct.		
Plant Manager's Signature:		

Appendix A – Conditions of Certification

Attachment F: Sample Key Events List

KEY EVENTS LIST

PROJECT: Willow Rock Energy Storage Center
COMPLIANCE PROJECT MANAGER: Ashley Gutierrez

DOCKET #21-AFC-02

EVENT DESCRIPTION	DATE
SAFC Certification Date	
Obtain Site Control	
On-line Date (Commercial Operation Date)	
PRE-CONSTRUCTION	
Start Preliminary Site Assessments/Pre-Construction Activities (Biological and Cultural)	
Start Engineering Review & Pre-Approval with Kern County and CBO (Grading Plan/Dawn Road Improvement/Water Supply Line)	
SITE ACTIVITIES	
Start Site Assessment/Pre-construction (Land Survey)	
Start Site Mobilization/Construction	
Start Grading	
Start Reservoir Excavation	
Start Shaft Construction	
Begin Pouring Major Foundation Concrete (Spheres Piles)	
Start Cavern Construction	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Plant Synchronization (Startup)	
TRANSMISSION LINE ACTIVITIES	
Start Transmission Line Construction	
Complete Transmission Line Construction	
Energization and Interconnection Tests	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	
Start Filling Reservoir	
Complete Filling Reservoir	

Appendix B – Exhibit List

Willow Rock Energy Storage Center 21-AFC-02

Exhibit Number	Document Title and Description ¹	Disposition
1000	TN # 240751-23 Section 6 Alternatives Gem Energy Storage Center This section discusses alternatives to the proposed Gem Energy Storage Center (Gem / GESG). These include the “no project” alternative, site alternatives, transmission line route alternatives, technology alternatives, water supply alternatives, and excavated rock recycling or disposal alternatives. This discussion focuses on alternatives that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the potential impacts.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1001	TN # 241428 CONFIDENTIAL Appendix 3A, Interconnection Study Documents	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1002	TN # 241503 Joint Response of Pecho and Gem Supporting NOI Exemption And Request For Commission Order	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1003	TN # 242224 Joint Reply to CEC Staff's Response to Applicants' Filing Requesting Exemption from the NOI Process	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1004	TN # 242776 Gem Data Adequacy Master Response No 1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1005	TN # 242799 Att DA20-1 A-CAES Historical Operational Summary	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1006	TN # 243543 Order and Final Commission Decision *** THIS DOCUMENT SUPERCEDES TN 243536 *** -	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

¹ Any exhibit without an active hyperlink to the document in the docket is designated confidential.

Exhibit Number	Document Title and Description ¹	Disposition
	Commission Order and Final Decision on Exemption from Notice of Intention	
1007	TN # 244331 Applicant's Notice of Project Name Change	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1008	TN # 246751 Attachment DR95-1_C132-North-Q1782-TOT 1002-Gem-Appendix A	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1009	TN # 246752 Attachment DR95-1_QC13PII-SCE-Northern-Q1782TOT 1002-Gem-Appendix A-Attachment 1	Offered by Applicant Representative (Jeffery D. Harris); Admitted.
1010	TN # 247169 Attachment 3	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1011	TN # 247170 Queue Cluster 13 Phase II – Attachment 1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1012	TN # 247171 Appendix A – Q1782	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1013	TN # 247172 Queue Cluster 13 Phase 2 Attachment 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1014	TN # 247173 Appendix H – SCD Results	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1015	TN # 247174 Appendix G - Generation Sequencing Implementation (GSI)	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1016	TN # 247175 SCE's Northern Hemisphere Import Nomogram Study	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1017	TN # 247176 Area Report Appendix K	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1018	TN # 247177 QC13 Phase 2 Area Report Appendix E	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1019	TN # 247178 Queue Cluster 13 Phase II – Appendix B	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1020	TN # 247179 Queue Cluster 13 Phase II – Appendix C	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1021	TN # 247180 Queue Cluster 13 Phase II – Appendix D	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1022	TN # 247181 Queue Cluster 13 Phase II – Appendix F	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1023	TN # 247182 QC13 Phase II Appendix L - Subsynchronous Control Interaction Screening Assessment Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1024	TN # 247183 Queue Cluster 13 Phase II Interconnection Study Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1025	TN # 254774 Supplemental AFC Cover Letter and Data Adequacy Worksheets	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1026	TN # 254799 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part VI	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1027	TN # 254800 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part V	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1028	TN # 254801 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part IV	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1029	TN # 254802 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part III	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1030	TN # 254803 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part II	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1031	TN # 254804 Willow Rock Energy Storage Center Supplemental AFC Volume II - Appendix 54A - Part I	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1032	TN # 254805 Willow Rock Energy Storage Center SAFC, Volume 1, Part B	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1033	TN # 254806 Willow Rock Energy Storage Center SAFC - Volume 1, Part	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1034	TN # 254807 Willow Rock Energy Storage Center SAFC Volume II- Appendix 56A-510A	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1035	TN # 254808 Willow Rock Energy Storage Center SAFC Volume II- Appendix 515A-Part II	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1036	TN # 254809 Willow Rock Energy Storage Center SAFC Volume II- Appendix 515A-Part I	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1037	TN # 254810 Willow Rock Energy Storage Center SAFC Volume II- Appendix 513A-514A	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1038	TN # 254811 Willow Rock Energy Storage Center SAFC Volume II- Appendix 52A-53B	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1039	TN # 254812 Willow Rock Energy Storage Center SAFC Volume II- Appendix 1A-51F	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1040	TN # 254813 Hi Res Figures V1 File 1 of 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1041	TN # 254814 High Resolution Figures WRESC SAFC 2 of 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1042	TN # 254815 2023 DESERT TORTOISE SURVEY DESERT TORTOISE SURVEY Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1043	TN # 254816 WRESC BIOLOGICAL RESOURCES ASSESSMENT REPORT	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1044	TN # 254817 WRESC Burrowing Owl Focused Survey Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1045	TN # 254818 WRESC Mojave Ground Squirrel Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1046	TN # 254819 WRESC Jurisdictional Delineation	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1047	TN # 254820 WRESC Western Joshua Tree Report 1 of 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1048	TN # 254821 WRESC Western Joshua Tree Report 2 of 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1050	TN # 254828 Willow Rock Energy Storage Center SAFC Volume II - Appendix 511A - Part II	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1051	TN # 254829 Willow Rock Energy Storage Center SAFC Volume II - Appendix 511A-Part I	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1052	TN # 254897 Eastern Kern Air Pollution Control District (EKAPCD) Application Willow Rock Energy Storage Center Rule 210.1 Minor Source Air Quality Permit Application	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1053	TN # 254951 Amended Cover Letter and Attestation of Completeness	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1054	TN # 255273 EKAPCD Determination of Completeness EKAPCD Determination of Completeness	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1055	TN # 255594 EKAPCD Preliminary Determination of Compliance EKAPCD Preliminary Determination of Compliance	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1056	TN # 256365 CONFIDENTIAL Appendix_Willow Rock Energy Storage Center Heat and Mass Balance Diagram	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1057	TN # 256372 Eastern Kern Air Pollution Control District Notice of Final Determination of Compliance (FDOC)	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1058	TN # 256448 Appendix 1D Site-Related Property Owners and Relationship to Project Owner	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1059	TN # 256449 Appendix 1B Property Owner's Addresses and Map	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1060	TN # 256450 Appendix 5-8A Paleo Records Search Results - CONFIDENTIAL	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1061	TN # 256485 CONFIDENTIAL_CNDDDB Forms	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1062	TN # 256486 CONFIDENTIAL_Swaainson Hawk	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1063	TN # 256487 CONFIDENTIAL_Crotch BB	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1064	TN # 256488 CONFIDENTIAL_Focused Plant Survey Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1065	TN # 256489 CONFIDENTIAL_C05_F5_2_4a_C_CNDDDBPlants	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1066	TN # 256490 CONFIDENTIAL_C06_F5_2_4b_C_CNDDBWildlife	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1067	TN # 256491 CONFIDENTIAL_C08_F5_2_6a_C_ObservedSSPlants	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1068	TN # 256492 CONFIDENTIAL_C09_F5_2_6b_C_ObservedSSWildlife	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1069	TN # 256493 Confidential Cultural Resources Information	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1070	TN # 256622 Willow Rock Data Adequacy Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1071	TN # 256824 2022 Generator Interconnection Reassessment Report Northern Area Final Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1072	TN # 256825 2022 Generator Reassessment Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1073	TN # 256826 QC13 Phase 2 Study Report Attachment #2 Updated for 2022 Reassessment	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1074	TN # 256860 Attachment ES-1 Property Owners List	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1075	TN # 256861 Attachment WA-6 Heat and Mass Balance (Block Flow Diagram)	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1076	TN # 257516 Vertical Plume Velocity Assessment - Willow Rock Energy Storage Center Assessment of vertical plume velocities	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1077	TN # 257525 Summary of the Level of Service (LOS)-Based Traffic Study Methodology to be Implemented for the Willow Rock Energy Storage Project Summary of the Level of Service (LOS)-Based Traffic Study Methodology to be Implemented for the Willow Rock Energy Storage Project	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1078	TN # 257622 Willow Rock Wetland Methodology	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1079	TN # 257813 Willow Rock Energy Storage Center Cultural Resources Phase II Testing Plan	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1080	TN # 258308 Willow Rock Jurisdictional Waters Delineation Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1081	TN # 258309 Willow Rock Desert Tortoise Survey 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1082	TN # 258310 Willow Rock Mohave Ground Squirrel Survey	Offered by Applicant Representative (Jeffery D. Harris); Admitted.
1083	TN # 258311 Willows Rock Joshua Tree Census 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1084	TN # 258312 Willow Rock Swainson's Hawk Survey 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1085	TN # 258313 Willow Rock Sensitive Plant Survey 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1086	TN # 258314 Willow Rock Crotch's Bumble Bee Survey 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1087	TN # 258315 Willow Rock Burrowing Owl Survey 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1088	TN # 258316 Willow Rock Biological Resources Report 2024 Addendum	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1089	TN # 258518 Willow Rock Traffic Study Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1090	TN # 258681 Willow Rock Data Request Set 1 Response Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1091	TN # 258868 31406639-000_01_04_FX-X- 04_Rev1_SoilsMap_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1092	TN # 258869 31406639-000_01_05_FX-X- 05_Rev1_VegetationMap_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1093	TN # 258870 31406639-000_01_06_FX-X- 06_Rev1_AllJurisdictionalDelin_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1094	TN # 258871 31406639-000_01_08_FX-X- 08_Rev1_ProtectedConservedLands_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1095	TN # 258872 31406639-000_01_09_FX-X- 09_Rev1_SpecialStatusPlants_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1096	TN # 258873 31406639-000_01_10_FX-X- 10_Rev1_SpecialStatusWildlife_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1097	TN # 258874 31406639-000_01_04_F03- 04_Rev1_BUOL_SurveyTransects_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1098	TN # 258875 31406639-000_01_05_F03- 05_Rev1_BUOL_Occurances_CONFIDENTIAL_MapBook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1099	TN # 258876 31406639-000_01_04_F08- 04_Rev1_CBBeeAndNectarSources_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1100	TN # 258877 31406639-000_01_04_F07- 04_Rev1_JD_HydrologyMap_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1101	TN # 258878 31406639-000_01_05_F07- 05_Rev1_JD_Vegetation_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1102	TN # 258879 31406639-000_01_06_F07- 06_Rev1_JD_NWI_Map_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1103	TN # 258880 31406639-000_01_07_F07- 07_Rev1_JD_USDA_Soils_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1104	TN # 258881 31406639-000_01_08_F07- 08_Rev1_JD_JurisdictionalDelin_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1105	TN # 258882 Hydrostor MGS Survey Report_Resource Agency Version	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1106	TN # 258883 31406639-000_01_04_F05- 04_Rev1_SP_CNDDDB_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1107	TN # 258884 31406639-000_01_05_F05- 05_Rev1_SP_SensitivePlants_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1108	TN # 258885 31406639-000_01_04_F02- 04_Rev1_SH_ActiveNestLocations_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1109	TN # 258886 31406639-000_01_05_F02- 05_Rev1_SH_SWHAObsv_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1110	TN # 258887 31406639-000_01_04_F06- 04_Rev1_JT_Obvs_CONFIDENTIAL_Mapbook	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1111	TN # 259220 Willow Rock Data Request Set 2 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1112	TN # 259338 Willow Rock CURE Data Request Set 1 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1113	TN # 259423 REDACTED 31406639-000_01_C05_F5_2-4a_C_Rev0_CNDDDBPlants	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1114	TN # 259424 REDACTED WRESC Swainson's Hawk Focused Survey	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1115	TN # 259490 Attachment DR26-1 – Utility Pole Locations Map Book	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1116	TN # 259491 Attachment DR33-1 – Survey Area and Drainages Map	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1117	TN # 259492 Attachment DR74-1 – 2023 and 2024 Swainson’s Hawk Survey Nest Locations Map Book	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1118	TN # 259493 Attachment DR75-1 – 2023 and 2024 Swainson’s Hawk Survey Hawk Locations Map Book	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1119	TN # 259675 Willow Rock Data Request Set 3 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1120	TN # 259736 Willow Rock Data Request Set 4 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1121	TN # 260234 Attachment DR95-1_ITP_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1122	TN # 260235 Attachment DR92-1 Draft Preliminary Conceptual WRESC WJT Relocation Plan_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1123	TN # 260236 Attachment DR87-1_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1124	TN # 260237 Attachment DR88-1_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1125	TN # 260238 Attachment DR89-1_Joshua Tree Census_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1126	TN # 260239 Attachment DR82-1_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1127	TN # 260240 Attachment DR84-1_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1128	TN # 260241 Attachment DR85-1_Confidential	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1129	TN # 260242 Attachment DR96-1 Biological Surveys Shapefiles	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1130	TN # 260243 Attachment DR67 Large Generator Interconnection Agreement	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1131	TN # 260664 Willow Rock Energy Storage Center Cultural Resources Phase II Testing Plan	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1132	TN # 260808 Willow Rock Data Request Set 5 Response Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1133	TN # 260809 Willow Rock Center for Biological Diversity Data Request Set 1 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1134	TN # 261314 Willow Rock Data Request 6 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1135	TN # 261315 Willow Rock CURE Data Request 2 Response	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1136	TN # 261500 Willow Rock CEC Data Request Set 6 Attachment DR121-1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1137	TN # 261511 Willow Rock CEC Data Request Set 6 Attachment DR123-1 Cover Sheet	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1138	TN # 261515 Willow Rock CEC Data Request Set 6 Attachment DR124-1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1139	TN # 261516 Willow Rock CEC Data Request Set 6 Attachment DR125-1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1140	TN # 261563 Willow Rock Updated SAFC Project Description - Section 2 Redline	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1141	TN # 261564 Willow Rock Updated SAFC Introduction - Section 1 Redline	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1142	TN # 261844 Attachment 1261 – Confidential Mapbook Figure 4	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1143	TN # 261991 Willow Rock Jurisdictional Waters Delineation Report Appendix B	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1144	TN # 261992 Willow Rock Jurisdictional Waters Delineation Report Appendix A Part 3	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1145	TN # 261993 Willow Rock Jurisdictional Waters Delineation Report Appendix A Part 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1146	TN # 261994 Willow Rock Jurisdictional Waters Delineation Report Appendix A Part 1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1147	TN # 261995 Willow Rock Jurisdictional Waters Delineation Report Text	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1148	TN # 262180 Follow-up Responses on Biological and Water Resources, Drilling Cuttings, and DSOD Info for Willow Rock Energy Storage Center	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1149	TN # 262196 Willow Rock Incidental Take Permit	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1150	TN # 262243 Willow Rock Jurisdictional Drainages Additional Information Attachment	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1151	TN # 262244 Willow Rock Jurisdictional Drainages Additional Information Text	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1152	TN # 262295 Willow Rock NOI Application Rev	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1153	TN # 262349 Consolidated Email Responses to CEC Staff on Lahontan's February 26, 2025 Request for Additional Information (TN # 261932) Consolidated Email Responses to CEC Staff on Lahontan's February 26, 2025 Request for Additional Information (TN #: 261932)	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1154	TN # 262705 Phase II Cultural Resources Testing and Evaluation for WRESC Slip sheet for document submitted via Kiteworks due to file size.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1155	TN # 264316 Willow Rock Preliminary Staff Assessment Comments Report Comments - Willow Rock Preliminary Staff Assessment Comments Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1156	TN # 265067 Willow Rock Data Adequacy Response, Attachment PD-3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1157	TN # 265068 Willow Rock Data Adequacy Response, Attachment PD-2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1158	TN # 265069 Willow Rock Data Adequacy Response, Attachment PD-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1159	TN # 265071 Willow Rock Data Adequacy Response, Attachment PD-4 Part 1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1160	TN # 265074 Willow Rock Data Adequacy Response, Attachment PD-4 Part 2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1161	TN # 265073 Willow Rock Data Adequacy Response, Attachment PD-5 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1162	TN # 265072 Willow Rock Data Adequacy Response, Attachment TRAN-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1163	TN # 265075 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 7 BaselineKOP6a Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1164	TN # 265076 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 6 BaselineKOP6 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1165	TN # 265077 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 5 BaselineKOP5 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1166	TN # 265078 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 4 BaselineKOP4 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1167	TN # 265079 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 3 BaselineKOP3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1168	TN # 265080 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 2 BaselineKOP2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1169	TN # 265081 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 1 Baseline Pano Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1170	TN # 265082 Willow Rock Data Adequacy Response, Attachment TSD-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1171	TN # 265083 Willow Rock Data Adequacy Response, Attachment TSSN-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1172	TN # 265085 Willow Rock Data Adequacy Response, Attachment VIS-2_Part 8_BaselineKOP7 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1173	TN # 265087 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 16 UpdateKOP6A Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1174	TN # 265088 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 15 UpdateKOP6 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1175	TN # 265089 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 14 UpdateKOP5 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1176	TN # 265090 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 13 UpdateKOP4 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1177	TN # 265091 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 12 UpdateKOP3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1178	TN # 265092 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 11 UpdateKOP3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1179	TN # 265093 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 10 UpdateKOP2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1180	TN # 265094 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 9 UpdateKOP1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1181	TN # 265095 Willow Rock Data Request Set 2 Response, Attachment DR35-1 Part 2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1182	TN # 265096 Willow Rock Data Request Set 2 Response, Attachment DR35-1 Part 1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1183	TN # 265097 Willow Rock Data Request Set 3 Response, Attachment DR54-2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1184	TN # 265098 Willow Rock Data Request Set 3 Response, Attachment DR54-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1185	TN # 265099 Willow Rock CBD Data Request Set 1, Attachment DR5-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1186	TN # 265100 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 19 Figure Set Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1187	TN # 265101 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 18 UpdateKOP7 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1188	TN # 265102 Willow Rock Data Adequacy Response, Attachment VIS-2 Part 17 UpdateKOP7 Berm Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1189	TN # 265103 Willow Rock Data Request Set 2 Response, Attachment DR35-1 Part 3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1190	TN # 265104 Willow Rock Data Request Set 2 Response, Attachment DR35-1 Part 4 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1191	TN # 265105 Willow Rock Data Request Set 1 Response Report, Attachment DR2-5 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1192	TN # 265106 Willow Rock CURE Data Request 2 Response Attachment DR168-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1193	TN # 265107 Willow Rock CURE Data Request 2 Response Attachment DR144-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1194	TN # 265108 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1195	TN # 265109 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 2 Appendix A-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1196	TN # 265110 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 2 Appendix A-2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1197	TN # 265111 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 3 Appendix B-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1198	TN # 265112 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 3 Appendix B-2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1199	TN # 265113 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 5 Appendix D Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1200	TN # 265114 Willow Rock CURE Data Request 2 Response, Attachment DR136-1 Part 6 Appendix E Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1201	TN # 265115 Willow Rock CURE Data Request Set 1 Response, Attachment DR8-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1202	TN # 265116 Willow Rock CURE Data Request Set 1 Response, Attachment DR11-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1203	TN # 265117 Willow Rock CURE Data Request Set 1 Response, Attachment DR42-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1204	TN # 265118 Willow Rock CURE Data Request Set 1 Response, Attachment DR46-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1205	TN # 265119 Willow Rock CURE Data Request Set 1 Response, Attachment DR47-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1206	TN # 265120 Willow Rock CURE Data Request Set 1 Response, Attachment DR66-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1207	TN # 265121 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-1 Part 1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1208	TN # 265122 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-1 Part 2 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1209	TN # 265123 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-1 Part 3 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1210	TN # 265124 Willow Rock Data Request Set 1 Response Report, Attachment DR2-6 Text Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1211	TN # 265125 Willow Rock Data Request Set 1 Response Report, Attachment DR2-6 Appendices Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1212	TN # 265126 Willow Rock Data Request 6 Response, Attachment DR126-1 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1213	TN # 265129 Repeated Application for Confidential Designation Data Adequacy Response BIO-2pdf Repeated application for confidential designation of materials previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1214	TN # 265130 Repeated Application for Confidential Designation WRESC Confidential Appendix 53B Appendix E Vol 2	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1215	TN # 265131 250730 Repeated Application for Confidential Designation WRESC Confidential Appendix 53B Appendix E Vol 1	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1216	TN # 265132 250729 Repeated Application for Confidential Designation WRESC Confidential Appendix 53B Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1217	TN # 265136 Repeated Application for Confidential Designation Phase II Cultural Resources Testing and Evaluation Report	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1218	TN # 265141 Willow Rock Data Request 4 Response, Attachment DR102-5 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1219	TN # 265149 Willow Rock CURE Data Request 2 Response, Attachment DR143-1 Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1220	TN # 265150 Willow Rock CURE Data Request 2 Response, Attachment DR143-1 Part3 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1221	TN # 265151 Willow Rock CURE Data Request 2 Response, Attachment DR143-1 Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1222	TN # 265152 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part7	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
	Resubmission of files previously submitted through Kiteworks.	
1223	TN # 265153 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part6 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1224	TN # 265154 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part5 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1225	TN # 265155 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part4 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1226	TN # 265156 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part3 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1227	TN # 265157 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1228	TN # 265158 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1229	TN # 265159 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part11	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
	Resubmission of files previously submitted through Kiteworks.	
1230	TN # 265160 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part10 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1231	TN # 265161 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part9 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1232	TN # 265162 Willow Rock CURE Data Request Set 1 Response, Attachment DR103-2 Part8 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1233	TN # 265170 Opening Testimony and Evidence 07302025	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1234	TN # 265265 Rebuttal Testimony	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1235	TN # 265357 Willow Rock Data Adequacy Response, Attachment BIO-2_Part 1_Confidential Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1236	TN # 265358 Willow Rock Data Adequacy Response, Attachment BIO-2_Part 2_Confidential Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1237	TN # 265359	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
	Willow Rock Data Adequacy Response, Attachment BIO-2_Part 3_Confidential Resubmission of files previously submitted through Kiteworks.	
1238	TN # 265341 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1239	TN # 265342 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix A_Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1240	TN # 265343 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix A_Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1241	TN # 265344 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix B Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1242	TN # 265345 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix C Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1243	TN # 265346 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1244	TN # 265347 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1245	TN # 265348 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part3 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1246	TN # 265349 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part4 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1247	TN # 265350 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part5 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1248	TN # 265351 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part6 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1249	TN # 265352 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part7 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1250	TN # 265353 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part8 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1251	TN # 265354 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part9 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1252	TN # 265355 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part10 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1253	TN # 265356 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix D DPRs_Part11 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1254	TN # 265317 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part8 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1255	TN # 265318 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part9 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1256	TN # 265319 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part10 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1257	TN # 265320 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part11 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1258	TN # 265321 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part12 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1259	TN # 265322 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part13 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1260	TN # 265323 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part14 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1261	TN # 265324 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part15 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1262	TN # 265325 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part16 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1263	TN # 265326 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part17 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1264	TN # 265327 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part18 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1265	TN # 265328 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part19 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1266	TN # 265329 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part20 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1267	TN # 265330 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part21 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1268	TN # 265331 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part22 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1269	TN # 265332 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part23 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1270	TN # 265333 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part24 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1271	TN # 265334 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1272	TN # 265335 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1273	TN # 265336 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part3 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1274	TN # 265337 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part4 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1275	TN # 265338 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part5 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1276	TN # 265339 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part6 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1277	TN # 265340 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol1_Part7 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1278	TN # 265278 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part1 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1279	TN # 265279 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part2 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1280	TN # 265280 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part3 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1281	TN # 265281 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part4 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1282	TN # 265282 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part5 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1283	TN # 265283 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part6 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1284	TN # 265284 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part7 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1285	TN # 265285 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part8 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1286	TN # 265286 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part9 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1287	TN # 265287 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part10 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1288	TN # 265288 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part11 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1289	TN # 265289 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part12 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1290	TN # 265290 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part13 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1291	TN # 265291 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part14 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1292	TN # 265292 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part15 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1293	TN # 265293 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part16 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1294	TN # 265294 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part17 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1295	TN # 265295 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part18 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1296	TN # 265296 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part19 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1297	TN # 265297 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part20 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1298	TN # 265298 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part21 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1299	TN # 265299 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part22 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1300	TN # 265300 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part23 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1301	TN # 265301 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part24 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1302	TN # 265302 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part25 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1303	TN # 265303 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part26 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
1304	TN # 265304 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part27 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1305	TN # 265305 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part28 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1306	TN # 265306 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part29 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1307	TN # 265307 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part30 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1308	TN # 265308 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part31 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1309	TN # 265309 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part32 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1310	TN # 265310 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part33 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1311	TN # 265311 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part34 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1312	TN # 265312 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part35 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1313	TN # 265313 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part36 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted.
1314	TN # 265314 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part37 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1315	TN # 265315 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part38 Resubmission of files previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description¹	Disposition
1316	TN # 265316 Willow Rock Energy Storage Center Supplemental AFC Volume II - Confidential Appendix 53B_CRA Appendix E_Vol2_Part39 Resubmission of files previously submitted through Kiteworks	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1317	TN # 265272 Phase II Cultural Resources Testing and Evaluation for WRESC_Part1 Resubmission of TN 262705 previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1318	TN # 265273 Phase II Cultural Resources Testing and Evaluation for WRESC_Part2 Resubmission of TN 262705 previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1319	TN # 265274 Phase II Cultural Resources Testing and Evaluation for WRESC_Part3 Resubmission of TN 262705 previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1320	TN # 265275 Phase II Cultural Resources Testing and Evaluation for WRESC_Part4 Resubmission of TN 262705 previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1321	TN # 265276 Phase II Cultural Resources Testing and Evaluation for WRESC_Part5 Resubmission of TN 262705 previously submitted through	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
	Kiteworks.	
1322	TN # 265277 Phase II Cultural Resources Testing and Evaluation for WRESC_Part6 Resubmission of TN 262705 previously submitted through Kiteworks.	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1323	TN # 265375 Willow Rock- Joint Statement of GEM A-CAES and CURE	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
1324	TN # 265694 Applicant's Response to Order After Prehearing Conference and Further Instructions for Evidentiary Hearing Applicant's Response to Order After Prehearing Conference and Further Instructions for Evidentiary Hearing	Offered by Applicant Representative (Jeffery D. Harris); Admitted on 8/21/2025.
2000	TN # 264843 Willow Rock Energy Storage Center Final Staff Assessment	Offered by Commission Staff (Jared Babula); Admitted on 8/21/2025.
2001	TN # 265268 Staff's Rebuttal Written Testimony and Evidence	Offered by Commission Staff (Jared Babula); Admitted on 8/21/2025.
2002	TN # 265264 Technical Memorandum Regarding CEC Willow Rock Measurement Results at NSA-7	Offered by Commission Staff (Jared Babula); Admitted on 8/21/2025.
2003	TN # 265687 Staff's Supplemental Testimony and Edits to Select Conditions of Certification	Offered by Commission Staff (Jared Babula); Admitted on 8/21/2025.
4000	TN # 265163 Ileene Anderson Opening Testimony	Offered by Intervenor Representative (Zeynep J. Graves, Senior Counsel for Center for Biological Diversity); Admitted on 8/21/2025.
4001	TN # 265263 Ileene Anderson Rebuttal Testimony	Offered by Intervenor Representative (Zeynep J. Graves, Senior Counsel for Center for Biological Diversity); Admitted on 8/21/2025.

Exhibit Number	Document Title and Description ¹	Disposition
4002	TN # 265164 Ileene Anderson Testimony Exhibit - CNPS Alliance	Offered by Intervenor Representative (Zeynep J. Graves, Senior Counsel for Center for Biological Diversity); Admitted on 8/21/2025.
4003	TN # 265165 Ileene Anderson Testimony Exhibit - California Natural Communities	Offered by Intervenor Representative (Zeynep J. Graves, Senior Counsel for Center for Biological Diversity); Admitted on 8/21/2025.
4004	TN # 265166 Ileene Anderson Testimony Exhibit - Vol 1 Western Joshua Tree Conservation Plan	Offered by Intervenor Representative (Zeynep J. Graves, Senior Counsel for Center for Biological Diversity); Admitted on 8/21/2025.

Appendix C Acronyms and Definitions

Acronym or Term	Definition
A	ampere
A-CAES	advanced compressed air energy storage
AAM	American Association of Museums
AAQS	ambient air quality standards (AAQS)
AB	Assembly Bill
AC	air conditioning
ACI	American Concrete Institute
ACR	Annual Compliance Report
ACSR	aluminum conductor steel reinforced
AED	automated external defibrillator
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
AERSCREEN	Screening Procedures for Estimating the Air Quality Impact of Stationary Sources, Revised (USEPA- 454/R-92-019)
AFC	Application for Certification
AFY	acre-feet per year
AISC	American Institute of Steel Construction
ALUCP	Kern County Airport Land Use Compatibility Plan
AMCA	Air Moving and Conditioning Association
ANSI	American National Standards Institute
APCO	Air Pollution Control Officer
API	American Petroleum Institute
APN	assessor parcel number
APLIC	Avian Power Line Interaction Committee
AQCMM	Air Quality Construction Mitigation Manager
AQCMP	Air Quality Construction Mitigation Plan
AQIA	air quality impact analysis
ARMR	Archeological Resource Management Report
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating, and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
AST	aboveground storage tank
ASTM	American Society of Testing and Materials
ATC	Authority to Construct
ATCM	airborne toxic control measures
AVEK	Antelope Valley East Kern Water Agency

AWS	American Welding Society
AWWA	American Water Works Association
BACT	Best Available Control Technology
BATF	Bureau of Alcohol, Tobacco, Firearms and Explosives
BAU	business-as-usual
BEA	U.S. Bureau of Economic Analysis
BESS	battery energy storage system
BGEPA	Bald and Golden Eagle Protection Act
bgs	below ground surface
bhp	brake horsepower
BLM	Bureau of Land Management
BMP	best management practices
BPS	Best Performance Standards
BRMIMP	Biological Resources Mitigation Implementation and Monitoring Plan
Building Code	California Building Code
Building Standards Code	California Building Standards Code, also known as Title 24, California Code of Regulations
BUOW	burrowing owl
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
Cal OSHA	California Division of Occupational Safety and Health
CalEEMod	California Emissions Estimator Model®
CalEPA	California Environmental Protection Agency
California ISO	California Independent System Operator
CalOES	California Office of Emergency Services
Caltrans	California Department of Transportation
Cal-IPC	California Invasive Plant Council
CBO	Chief Building Official
CCTV	closed-circuit television
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CDPR	California Department of Pesticide Regulation
CEC	California Energy Commission
Center	Center for Biological Diversity
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERS	California Environmental Reporting System
CESA	California Endangered Species Act
CEQ	Council on Environmental Quality

CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CH ₄	methane
CIH	Certified Industrial Hygienist
CIPC	Critical Infrastructure Protection Committee
CIVIL	Civil engineering
CML	Continuous Monitoring Location
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	carbon monoxide
COC	Condition of Certification
COM	Compliance Monitoring Plan
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CRAS	Centralized Remedial Action Schemes
CRHR	California Register of Historical Resources
CRPR	California Rare Plant Ranks
CRM	Cultural Resource Manager
CRS	Cultural Resource Specialist
CRSI	Concrete Reinforcing Steel Institute
CSS	Construction Safety Supervisor
CTMP	Construction Traffic Management Plan
CTRMMP	Cultural and Tribal Resources Mitigation And Monitoring Plan
CTRR	Cultural and Tribal Cultural Resources Report
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
CVC	California Vehicle Code
CWA	Clean Water Act
Dam Safety Program	California Water Code, Division 3, Part 1, and California Code of Regulations, Title 23, Division 2, Chapter 1
dBA	sound levels measured in decibels (dB) using A-weighting
DCBO	Delegate Chief Building Official
DESCP	Drainage Erosion and Sedimentation Control Plan
DOD	Department of Defense
DPM	diesel particulate matter
DPR	California Department of Parks and Recreation

DRECP	Desert Renewable Energy Conservation Plan
DTSC	Department of Toxic Substances Control
DWR	Department of Water Resources
DWR-DSOD	Department of Water Resources Division of Safety of Dams
EAP	emergency action plan
EIA	economic impact analysis
EIR	Environmental Impact Report
EJ	environmental justice
EKAPCD	Eastern Kern Air Pollution Control District
ELEC	Electrical engineering
Electrical Code	California Electrical Code
EMF	electromagnetic field
EMFAC2021	California Emission FACTor model for motor vehicle emissions
EMS	emergency medical services
EPCRA	Emergency Planning and Community Right-to-Know Act
ESA	Federal Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHSZ	Fire Hazard Severity Zone
FSA	Final Staff Assessment
GEN	general
gen-tie	generation tie
GIE	gas insulated equipment
GIS	Geographic Information Systems
GO	General Order
GPS	global positioning system
gr/scf	grains per standard cubic foot
GWP	Global Warming Potential
HAP	hazardous air pollutants
HC	hydrostatically compensating
HCM 7th	Highway Capacity Manual 7 th Edition
HEPA	High Efficiency Particulate Arresting
HFCs	hydrofluorocarbons
HM	Habitat Management
HMBP	Hazardous Materials Business Plan
HMIS	Hazardous Materials Inventory Statement
HMMP	Hazardous Materials Management Plan
HSP	Health and Safety Plan
HWCL	Hazardous Waste Control Law
H2	Hydrogen

H ₂ S	hydrogen sulfide
H&SC	California Health and Safety Code
IBA	Important Bird Area
IEEE	Institute of Electrical and Electronics Engineers
ISMP	Invasive Species Management Plan
IWMP	Integrated Weed Management Plan
KCEPH	Kern County Environmental Health Division
KCFD	Kern County Fire Department
KCSO	Kern County Sheriff's Office
kg	kilogram
KMZ	Keyhole Markup Language
KOP	Key Observation Point
kV	kilovolt
kW	kilowatt
LADWP	Los Angeles Department of Water and Power
lbs	pounds
LDES	long duration energy storage
L _{dn}	day-night average sound levels
LEPC	Local Emergency Planning Committee
Leq	Average energy level intensity of noise
LGIA	Large Generator Interconnection Agreement
Li-ion	lithium-ion
LORS	laws, ordinances, regulations, and standards
LOS	level of service
MBTA	Migratory Bird Treaty Act
MCR	Monthly Compliance Report
MD	Metropolitan Division
MECH	Mechanical engineering
MEIR	maximally exposed individual resident
MEIS	maximally exposed individual sensitive receptor
MEIW	maximally exposed individual worker
MSA	Metropolitan Statistical Area
MSHA	Mining Safety and Health Administration
MTCO _{2e}	metric tons of CO ₂ equivalent
MW	megawatt
MW _{hr}	megawatt-hour
NAAQS	National Ambient Air Quality Standards
NA	Nonattainment
NACE	National Association of Corrosion Engineers
NAHC	Native American Heritage Commission
NBMP	Nesting Bird Management Plan

NEC	National Electric Code
NERC	North American Electric Reliability Corporation
NESC	National Electric Safety Code
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NOx	emissions primarily consisting of nitric oxide (NO) and nitrogen dioxide (NO ₂)
NO ₂	nitrogen dioxide
NPDES	National Pollution Discharge Elimination System
NSA	Noise Sensitive Area
NSR	New Source Review
N ₂ O	nitrous oxide
OEHHA	California Office of Environmental Health Hazard Assessment
OHV	off-highway vehicles
OSHA	Department of Labor Occupational Health and Safety Administration
OWTS	onsite wastewater treatment system
O ₃	ozone
PAA	Project area of analysis
PAR	Property Analysis Record
Pb	lead
PCR	Periodic compliance report
PCS	Process Control System
PEM	polymer electrolyte membrane
PFYC	Potential Fossil Yield Classification
PGA	peak ground acceleration
PMI	point of maximum impact
PM ₁₀	particulate matter of 10 micrometers or less in diameter
PM _{2.5}	particulate matter of 2.5 micrometers and smaller in diameter
POC	people of color
PPE	personal protective equipment
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRM	paleontological resource monitor
PRMMP	Paleontological Resources Monitoring and Mitigation Plan
PRR	paleontological resource report
PRS	paleontological resource specialist
PSA	Preliminary Staff Assessment
PSD	Prevention of Significant Deterioration

PTA	Petition to Amend
PTE	potential to emit
PTZ	Pan, Tilt, Zoom
PTO	Permit to Operate
QA/QC	quality assurance and quality control
RACT	Reasonable Available Control Technology
RAM	Reliability, Availability and Maintainability study
RIMS II	Regional Input-Output Modeling System
RCRA	Resource Conservation and Recovery Act
REL	Reference Exposure Level
RFBs	redux flow batteries
ROG	reactive organic gases
ROW	right-of-way
RPS	Renewable Portfolio Standard
RQ	Reportable Quantity
RTE	round-trip efficiency
RTP/SCS	Regional Transportation Plan/Sustainable Community Strategy
RWQCB	Regional Water Quality Control Board
SAFC	Supplemental Application for Certification
SAP	Sampling and Analysis Plan
SB	Senate Bill
SB 100	Senate Bill 100—The 100 Percent Clean Energy Act of 2018
SCE	Southern California Edison
Scoping Plan	AB 32 Climate Change Scoping Plan in 2008 and updated in 2014, 2017, and 2022.
SDI	Steel Deck Institute
SDS	Safety Data Sheets
SF6	sulfur hexafluoride
SGMA	Sustainable Groundwater Management Act
SHRC	California State Historical Resources Commission
SIL	Significant Impact Levels
SJVAPCD	San Joaquin Valley Air Pollution Control District
SLCP	short-lived climate pollutant
SMARA	Surface Mining and Reclamation Act
SMGB	State Mining and Geology Board
SMP	Soils Management Plan
SOFCs	solid oxide fuel cells
SO2	sulfur dioxide
SO4	sulfate
SPCC	Spill Prevention, Control and Countermeasure Plan
SRA	State Responsibility Area

STRUC	Structural engineering
SVP	Society of Vertebrate Paleontology
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TDM	Transportation Demand Management
TDS	total dissolved solids
Title 8	Title 8 of the California Code of Regulations
tpy	trips per year
TRB	Transportation Review Board
TSCA	Toxic Substances Control Act
UPS	uninterruptible power supply
USACE	United States Army Corps of Engineers
USAR	Urban Search and Rescue
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UST	underground storage tank
UTM	Universal Transverse Mercator
VAR	volt-ampere reactive
VH	Villa Haines
VMP	Vegetation Management Plan
VOC	volatile organic compound as defined in Rule 210.1
WATER	Soil and Water
Water Code	California Water Code
WDR	Waste Discharge Requirement
WEAP	Worker Environmental Awareness Program
WECC	Western Electric Coordinating Council
Willow Rock	Willow Rock Energy Storage Center
WJT	western Joshua tree
WJTCA	Western Joshua Tree Conservation Act
WPRP	Wildlife Protection and Relocation Plan
WQCA	Water Quality Control Act
WRESC	Willow Rock Energy Storage Center

Appendix D

Agency and Public Comment

Commenter	Organization	Citation	Topic(s)
Neal Desai	National Parks Conservation Association	8/20/2025 TN 265717	Strong support for the project, Long Duration Energy Storage, Environmental Protection
Kim Domingo	Rosamond Community Services District	8/21/2025 TN 265732	Support Project, Economic Investment, Long Duration Energy Storage, Clean and Reliable Energy
Greg Wood	Rosamond Community Services District	8/21/2025 TN 265733	Support Project, Direct and Indirect Benefits, Jobs, Supply Chain, Environmental Justice, Reliable Energy
Rick Webb	Rosamond Community Services District	8/21/2025 RT 49:16—52:6	Support Project, Jobs, Community Outreach, Resource Adequacy
Joel MacKay	Rosamond Municipal Advisory Council	8/21/2025 RT 52:7—53:13	Support Project, Community Outreach, Public Benefits,
Lorelei Oviatt	Kern County Planning and Natural Resources	8/21/2025 RT 53:14—56:13	Support Project, Biological Resources, Renewable Energy
Anthony Myers	Safe Haven Kids League of California City	8/21/2025 RT 57:12—59:24	Support Project, Community Outreach, Jobs
George Hodgkinson	Mojave Chamber of Commerce, Elks Lodge	8/21/2025 RT 60:11—62:15	Support Project, Renewable Energy, Community Outreach
Richard Chapman	Kern Economic Development Corporation	8/21/2025 RT 62:22—64:15	Support Project, Renewable Energy, Jobs, Economic Benefit
Drew Mercy	Antelope Valley Economic Development & Growth Enterprise	8/21/2025 RT 64:19—66:12	Support Project, Jobs, Renewable Energy, Community Outreach
Neal Desai	National Parks Conservation Association	8/21/2025 RT 66:21—68:1	Support Project, Renewable Energy, Land Use
Miguel Sandoval	Eastern Kern Air Pollution Control District	8/21/2025 RT 68:18—73:6	Testimony certifying Final Determination of Compliance
Jeremy Pohlman	California Department of Fish and Wildlife	8/21/2025 RT 26:23 – 27:2, 82:8 – 20; 121:4 – 124:8,	Agency comments on Biological Resources

		133:10 – 135:14, and 168:1 – 172:11	
Lena Germinario	California Department of Fish and Wildlife	8/21/2025 RT 27:4-8, and 82:22-24	Agency comments on Biological Resources
Derek Kliewer	California Department of Fish and Wildlife	8/21/2025 RT 27:9-11	Agency comments on Biological Resources
Erik Malvick	Department of Water Resources Division of Safety of Dams	8/21/2025 RT 180:23 – 184:14, 190:21 – 200:23, 203:23 – 205:20, 212:19 – 214:7, 222:12 – 223:1	Agency comments on the design, construction and operational safety of the reservoir embankment.
Shawn Jones	Department of Water Resources Division of Safety of Dams	8/21/2025 RT 184:15-19	Agency comments on the design, construction and operational safety of the reservoir embankment.
Peter Thyberg	Department of Water Resources Division of Safety of Dams	8/21/2025 RT 184:21-25, 200:24 – 202:13, 220:21 – 222:5	Agency comments on the design, construction and operational safety of the reservoir embankment.
Erik Malvick	Department of Water Resources Division of Safety of Dams	9/16/2025 TN 266043	Legal, technical and procedural description of Dam Safety Program, and support for Staff's proposed Conditions of Certification WATER-5 and WATER-6.

Appendix E – Master Cumulative Project Map and List

Figure 1 Appendix E Master Cumulative Project Map

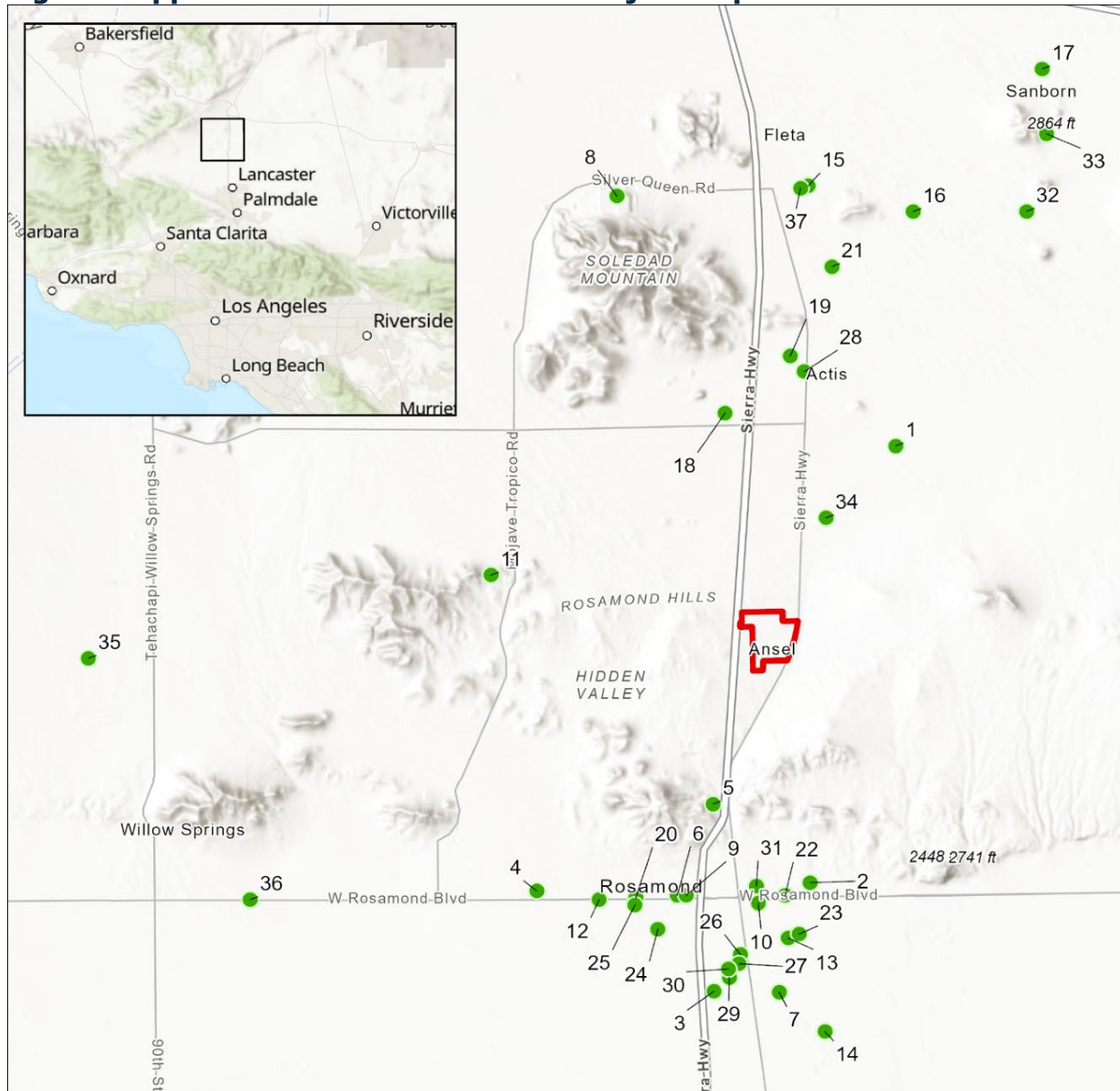


**Figure A-1
Cumulative Projects**

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
1	Edwards Air Force Base Solar Project	Photovoltaic (PV) solar project on 4,000-acre Edwards Air Force Base (AFB) property and generation tie (gen-tie) line approximately 16 miles in length. Greater than 100 megawatts (MW) but not more than 750 MW, with the generated energy distributed to investor owned utilities, municipalities, other energy off-takers and/or Edwards AFB	Located on Edwards AFB, approximately 6 miles northeast of the community of Rosamond and 6 miles south of Mojave	2.5 miles northeast of the project site	Construction completed 2023
2	Investment Concepts Inc	Conditional Use Permit (CUP) 118 multi-unit apartment complex	County Assessor's Parcel Numbers (APN) 471-112-06	2.8 miles south of the project site	Applied
3	Dewalt Corp for Rosamond 5 properties	Construct 89-unit multifamily project	APN 473-022-23	4.1 miles south of the project site	Approved
3	Dewalt Corp	Precise development of 87 duplex structures (174 units)	APN 473-022-23	4.1 miles south of the project site	Approved
4	Investment Concepts Inc	CUP for apartment complex	APN 252-161-49	3.9 miles northwest of the project site	Approved
4	Kern County Planning Dept	Kern County Housing Element Implementation 2022, zone change to R-3 Site No.6	APN 252-161-49	3.9 miles northwest of the project site	Approved
5	Westpark LLC, Howard Field	Proposed hotel development	APN 471-022-07	1.8 miles south of the project site	Applied
6	Halferty development	Develop plan for mixed commercial, retail development	APNs 251-181-145, 251-181-152	3.0 miles south of the project site	Approved
7	BHT Developers, LLC	Auto Auction Facility	APNs 473-023-042, 473-023-059, 473-023-067, 473-023-061	4.1 miles south of the project site	Applied
8	Golden Queen Mining Company, LLC	Addendum to EIR approved for surface mining and reclamation plan	APN 429-190-69	5.5 miles north of the project site	Approved

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
9	Interex Property advisors	Development plan for auto service station, motel, retail, and restaurants	APN 251-120-010	3 miles south of the project site	Applied
10	RE McCollum, LLC	Self-storage development plan	APN 258-090-02	3 miles south of the project site	Applied
11	GEM Hill Quarry (CalPortland Company)	Surface mining operation and development of a reclamation plan on approximately 82.2 acres, 15 MM tons of volcanic tuff GEM Hill	APNs 345-294-17, 345-032-05, 345-032-31, 345-031-02 and 345-032-02	3.1 miles west of the project	Approved
12	FH II LLC / Frontier Communities	Change zoning to allow for 120-unit single family residential development	APN 472-100-63	3.6 miles southwest of the project site	Approved
13	Garo Karakoulian	CUP for auto dismantling and recycling facility	APN 258-160-26	3.5 miles south of the project site	Applied
14	SSI Rosamond Solar, LLC	Solar array accessory to water treatment facility	APN 471-040-01	3.4 miles north of the project site	Approved
15	True North Renewable Energy	Amendments to Kern County General Plan and Willow Springs Specific Plan to designate the site as Solid Waste Disposal Facility and CUP to allow a renewable energy facility on 117 acres.	APNs 429-101-30 through 429-101-37	5.4 miles north of the project site	Approved
16	Capella Solar	Approximate 5 MW modular commercial concentrating solar power plant with a supercritical CO2 power cycle and solid media thermal, which is comprised of an approximately 117-acre field of computer-controlled heliostat mirrors focusing solar energy on receiver apertures on top of an approximate 330-foot-tall, centralized power tower, and ancillary. The project would be operated as a test facility.	APNs 429-060-13 through 429-060-19	5.4 miles north of the project site	Processing

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
17	Enterprise Solar	Construction and operation of a solar PV facility and associated infrastructure necessary to generate 600 MWs of renewable electrical energy with up to 4,000 megawatt-hours (MWh) of energy storage capacity (approximately 1,000 MW) on approximately 2,320 acres. Infrastructure includes laydown yards, a meteorological station, and a substation. PV panels, inverters, converters, foundations, and transformers will be installed onsite.	Cross Streets: SR14 and SR58	7.6 miles northeast of the project site	Approved
18	Castellanos Truck Parking and Storage	General Plan Amendment, Zone Classification Change, Precise Development plan to allow a Truck Parking and Storage Facility	APN 430-053-08	2.5 miles north of the project site	Applied
19	Babkan Safarian & Denise Rodriguez	General Plan Amendment, Zone Classification Change, Precise Development plan to allow vehicle and cargo container storage	APN 430-141-27	3.2 miles north of the project site	Applied
20	Irvine Camillo	Precise Development Plan for commercial development	APN 472-100-15	3.2 miles southeast of the project site	Applied
21	Antonio & Jeanette Vergara	CUP for construction materials recycling facility	APN 429-010-02	4.4 miles north of the project site	Applied
22	Carl Wood	Precise Development Plan for new retail development	APNs 258-170-16, 258-170-17	2.9 miles south of the project site	Applied
23	Walter DeBoer, BRPH	Modification to Precise Development Plan for change of occupancy to manufacturing.	APN 258-160-42	3.4 miles south of the project site	Applied
24	Silvia Valdez	CUP for installation of mobile home greater than 10 years	APN 251-191-13	3.5 miles southeast of the project site	Applied

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
25	Aaron Rivani by Cindy Parra	Zone classification change from A-1 to R-1	APN 472-100-16	3.2 miles southeast of the project site	Applied
26	Kern County Planning Dept	Kern County Housing Element Implementation 2022, Zone change to R3 Site No, 4	APNs 258-120-12, 258-130-16, 258-150-02, 258-130-23	3.6 miles south of the project site	Approved
27	Kern County Planning Dept	Kern County Housing Element Implementation 2022, plan amendment to 5 1/2.5 and zone classification change to R3, Site No.9	APN 473-031-03	3.7 miles South of the project site	Approved
28	Kern County Planning Dept	Kern County Housing Element Implementation 2022, Zone change to R3 Site No.2	APN 430-030-10	3.1 miles north of the project site	Approved
29	Kern County Planning Dept	Kern County Housing Element Implementation 2022, Zone change to R3 Site No.7	APN 473-031-09	3.9 miles south of the project site	Approved
30	Kern County Planning Dept	Kern County Housing Element Implementation 2022, Zone change to R3 Site No.5	APN 473-031-27	3.8 miles south of the project site	Approved
31	Matthew McCormick	CUP for single family residence in C-2	APN 251-025-09	2.7 miles south of the project site	Applied
32	Sanborn Solar	Solar PV power generating facilities and associated facilities that would generate up to a combined total of 300 MW of renewable electrical energy and up to 3 GWh of energy storage capacity	Cross Streets: SR 14 and Silver Queen Road and SR 58 (Business) and Lone Butte Road	5.9 miles northeast of the project site	Approved
33	Bellefield Solar Project	Solar PV facility and energy storage system along with associated infrastructure necessary to generate up to 1,500 MW of alternating current and up to 1,500 MWh energy storage capacity	Cross Streets: Altus Avenue & State Route 58	6.9 miles northeast of the project site	Approved
34	Mojave Micro Mill	Construct and operate a micro mill facility and associated infrastructure	Cross streets: Sopp Road and Sierra Highway	1.3 miles north of the project site	Completed in 2025

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
		necessary to produce rebar from scrap metal through various recycling processes. Development would include an approximate 475,800 square-foot steel mill facility with an additional 51,221 square feet of accessory buildings and structures, as well as an approximate 63-acre accessory solar array on 174 total acres of privately owned land. Outdoor storage for scrap materials and staging is proposed as part of the project.			
35	Bullhead Solar	Solar PV facility with associated infrastructure on approximately 1,343.2 acres. Preferred and optional generation-tie (gen-tie) routes to the Rosamond and Whirlwind substations, only one of which would be constructed. The project also includes laydown yards, a meteorological station, a microwave/communication tower, and a substation.	Along Dawn Road off Sierra Hwy 14 between 105th Street West and 75th Street West, north of Favorito Avenue Dawn Road and South of Champagne Avenue.	8.1 miles west of the project	Approved
36	Gettysburg Solar/AV Apollo	Approximately 30t MW photovoltaic (PV) electric generating facility, including approximately 30 MW of energy storage capacity, on approximately 158 acres of privately-owned land in unincorporated Kern County.	Rosamond, ¼ miles east of intersection of Rosamond Blvd and 80th	6.9 miles southwest of the project site	Approved
37	Organics Energy Solar	High solids anaerobic digestion (HSAD) facility with incidental advanced	Silver Queen Road and United Street	5.4 miles north of the project site	Processing

TABLE 1 Appendix E Master Cumulative Project List

Map ID Number	Project Name	Description	Location	Distance to Project (miles)	Status
		composting for the management and processing of residential, commercial, and industrial organic waste and green material. The Project would provide organics processing infrastructure and organic materials diversion from regional landfills and generate renewable energy through the HSAD process			

Appendix F – Proof of Service List

Docket: 21-AFC-02

Project Title: Willow Rock Energy Storage Center

Generated On: 12/14/2025 3:51:25 PM

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