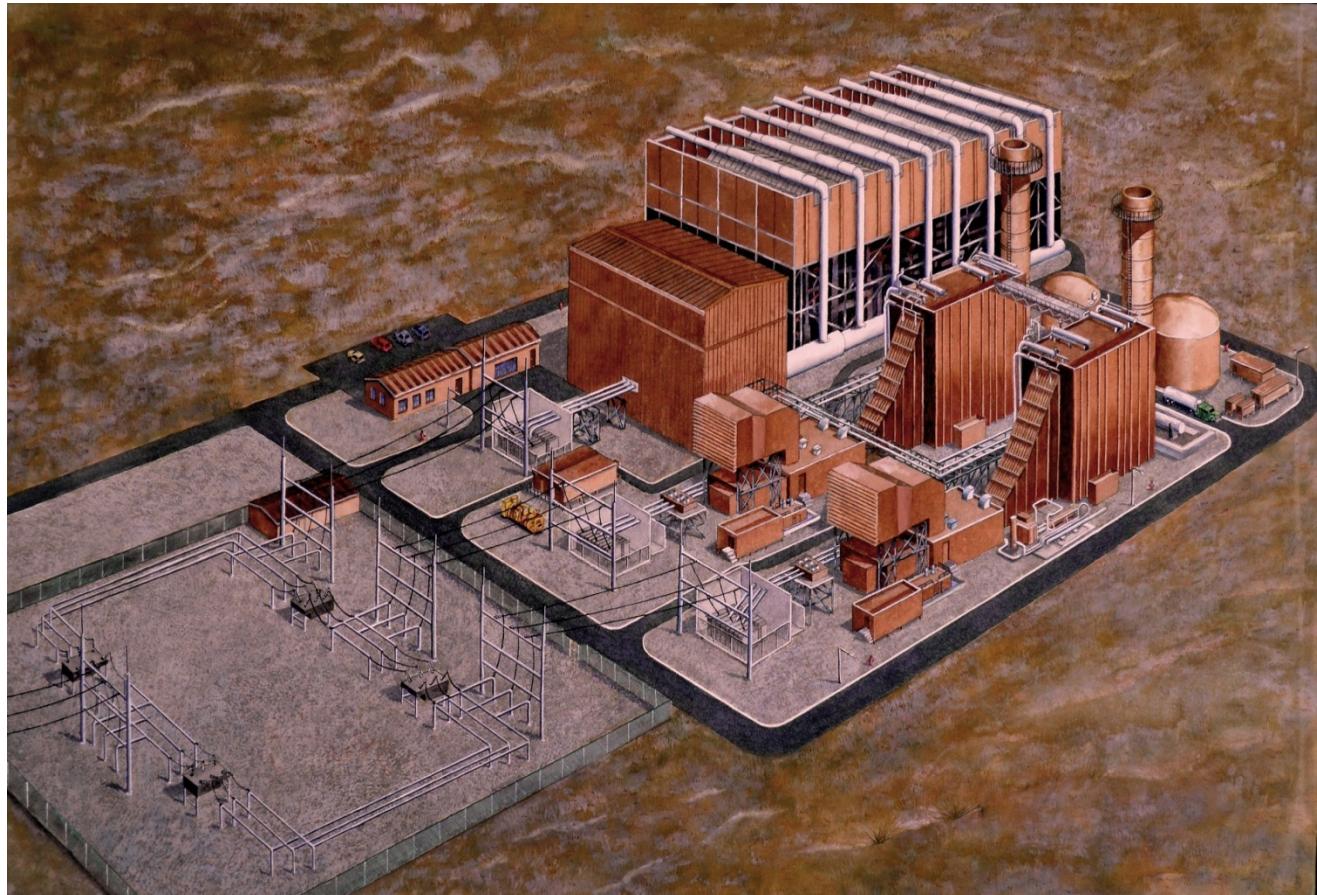


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PALMDALE ENERGY PROJECT AMENDMENT

FINAL COMMISSION DECISION



CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown Jr, Governor

August 2017
CEC-800-2017-003-CMFD

DOCKET NUMBER 08-AFC-09C

**CALIFORNIA
ENERGY COMMISSION**

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Sacramento, CA 95814

<http://www.energy.ca.gov/sitingcases/palmdale/index.html>

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Hearing Officer



**Before the Energy Resources Conservation and Development
Commission of the State of California**
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PETITION TO AMEND THE:

PALMDALE ENERGY PROJECT

Order No. 17-0809-4

Docket No. 08-AFC-09C

COMMISSION ADOPTION ORDER

This Energy Commission Order adopts the Commission Decision for the Petition to Amend the Palmdale Hybrid Power Project.¹ The Commission Decision consists of the Presiding Member's Proposed Decision (PMPD) filed on July 3, 2017,² as modified by the Errata filed on August 3, 2017,³ and as further modified by the Commission during the August 9, 2017 Business Meeting as described in Attachment A to this Order. The Commission Decision is based upon the evidentiary record of these proceedings and takes into consideration the comments received prior to and at the August 9, 2017 Business Meeting. The Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached, and conditions imposed.

This Order incorporates by reference the text and evidence referred to in the PMPD and the Errata to the PMPD. The requirements contained in the Commission Decision ensure that the proposed facility 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 Energy Commission hereby adopts the following findings pursuant to the California Environmental Quality Act (California Public Resources Code, section 21000 et seq.), the Warren-Alquist Act (California Public Resources Code, section 25000 et seq.) and the Energy Commission Regulations (California Code of Regulations, title 20), in addition to those contained in the Commission Decision for the Palmdale Energy Project:

¹ The Petition to Amend the Palmdale Hybrid Power Project (TN 204459) also included a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project.

² TN 220009.

³ TN 220544.

1. Imposition and implementation of the conditions of certification contained in the Commission Decision will ensure that the Palmdale Energy Project is designed, sited, constructed, 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. Imposition and implementation of the conditions of certification contained in the Commission Decision will ensure protection of environmental quality as well as reasonably safe and reliable operation of the facility. The conditions of certification also ensure that the Palmdale Energy Project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative environmental impacts.
3. Changes or alterations that would mitigate or lessen the impacts of the Palmdale Hybrid Power Project, and which will be beneficial to the public, have been incorporated into the Palmdale Energy Project.
4. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.
5. The Palmdale Energy Project will not be sited, constructed, or operated on land designated for use as a state, regional, county or city park, wilderness, scenic or natural reserve area for wildlife protection, recreation, historic preservation or natural preservation, or on an estuary in an essentially natural and undeveloped state.
6. An environmental justice screening analysis was conducted and the Palmdale Energy Project, as mitigated, will not have a disproportionate impact on low-income or minority populations.
7. The Commission Decision contains a discussion of the public benefits of the Palmdale Energy Project as required by Public Resources Code section 25523(h).
8. The Palmdale Energy Project benefits the local and regional study areas in terms of an increase in local expenditures and payrolls during construction and operation of the facility, as well as benefits to public finance and local economies through taxation. These activities will provide a degree of economic benefit to the local area.
9. In contrast to the Palmdale Hybrid Power Project, the Palmdale Energy Project will use less water by using air-cooled technology instead of water for cooling, and will be built with more efficient equipment for the generation of electricity.
10. The evidence does not establish the existence of any environmentally superior alternative site.

11. The Commission Decision contains measures to ensure that the planned, temporary, or unexpected closure of the Palmdale Energy Project will occur in conformance with applicable laws, ordinances, regulations, and standards.
12. The proceedings leading to the Commission Decision have been conducted in conformity with the regulations governing the consideration of an amendment to an approved 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 request that the name of the project be changed from Palmdale Hybrid Power Project to the Palmdale Energy Project is granted.
2. The amended Palmdale Energy Project as described in the Commission Decision is hereby granted, and a certificate to construct and operate the project is hereby approved.
3. The approval of the Palmdale Energy Project is subject to the timely performance of the conditions of certification and compliance verifications. The conditions of certification and compliance verifications are integrated with this Order and are not severable therefrom. While the project owner may delegate the performance of a condition or verification, the duty to ensure adequate performance of a condition or verification may not be delegated.
4. This Order is adopted, issued, effective, and final on August 14, 2017.
5. Reconsideration of this Order is governed by Public Resources Code section 25530.
6. Judicial review of this Order is governed by Public Resources Code section 25531.
7. The Commission hereby adopts the conditions of certification, compliance verifications, and associated dispute resolution procedures set forth in the Commission Decision as its mitigation monitoring program required by Public Resources Code section 25532. All conditions take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.
8. This Order licenses the project owner to commence construction on the Palmdale Energy Project subject to the provisions of California Code of Regulations, title 20, section 1720.3. This license expires by operation of law when the Palmdale Energy Project's start-of-construction deadline passes with no construction having commenced.

9. The Executive Director of the Commission shall transmit a Notice of Decision and appropriate accompanying documents as provided by Public Resources Code section 25537, and California Code of Regulations, title 20, section 1768.
10. The Hearing and Policy Unit of the Chief Counsel's Office shall incorporate the PMPD, Errata and any modifications made by the Commission during the August 9, 2017 Business Meeting into a single document. Publication of that compilation shall not affect the adoption, effective, issuance, or final dates of this Order established in paragraph 4, 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 August 9, 2017.

AYE: Weisenmiller, Douglas, McAllister, Hochschild, Scott

NAY: None

ABSENT: None

ABSTAIN: None

Original Signed by:

Cody Goldthrite
Secretariat

ATTACHMENT A
ADDITIONAL CHANGE TO REVISED PMPD ADOPTED AT
AUGUST 9, 2017 ENERGY COMMISSION BUSINESS MEETING

[No modifications were adopted at the August 9, 2017 Energy Commission Business Meeting]

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I. INTRODUCTION

SUMMARY OF THE PRESIDING MEMBER'S PROPOSED DECISION

This Presiding Member's Proposed Decision (Decision) contains the rationale of the California Energy Commission (Energy Commission) in approving proposed amendments to the previously approved Palmdale Hybrid Power Project (PHPP). The Energy Commission determines that the proposed amended project, now known as the Palmdale Energy Project¹ (PEP), will, as mitigated, have no significant impacts on the environment and will comply with all applicable laws, ordinances, regulations, and standards (LORS).

This Decision is based exclusively upon the evidentiary record established during this amendment proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the evidentiary record² supporting our findings and conclusions, and specified the measures required to ensure that the PEP is designed, constructed, and operated in a manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

The Energy Commission has exclusive jurisdiction to license this project and considered the amendment under a review process established by Public Resources Code section 25540.6 and California Code of Regulations, title 20, section 1769.

Prior Energy Commission Action and Decision

On August 4, 2008, the City of Palmdale submitted an Application for Certification (AFC) seeking approval from the Energy Commission to develop the PHPP; a hybrid of natural-gas-fired, combined-cycle generating equipment integrated with solar thermal generating equipment to be developed in the northern portion of the City of Palmdale,

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² The Reporter's Transcripts of the evidentiary hearings are cited as "date of hearing RT page:line-page:line. For example: 12/21/16 RT 77:14-78:16. The exhibits included in the evidentiary record are cited as "Ex. Number," followed by a page reference. Where the document is unpaginated, or is a compilation of two or more documents with overlapping pagination, we may refer to the page location in the official pdf file copy of the document. Where a document is referred to by "TN" (transaction number), it may be accessed via the Energy Commission's web page for this project, more specifically the "Docket Log," whose address for the Palmdale Energy Project Compliance proceedings is <https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=08-AFC-09C>. Alternatively, you may type the TN number into the search dialog at: <http://docketsearch.energy.ca.gov/Pages/default.aspx>. A list of all exhibits is contained in **Appendix B** of this Decision.

Los Angeles County, California.³ The Energy Commission issued its Final Decision allowing the City of Palmdale to construct and operate the PHPP on August 15, 2011 (2011 Decision).⁴

The PHPP project site, as approved by the Energy Commission, is a 333-acre vacant and undeveloped site located approximately 60 miles north of downtown Los Angeles in the northernmost portion of the City of Palmdale, at 950 East Avenue M at the intersection of Sierra Highway and East Avenue M. The property is located immediately north and west of the combined facilities of the Los Angeles/Palmdale Regional Airport and Air Force Plant 42.⁵

The PHPP site is part of a 613.4-acre property owned by the City of Palmdale in an area currently zoned for industrial use. The PHPP site was permitted for 250 acres for the solar field, 26 acres for the power block, and 51 acres combined for the access road, setbacks, and drainage facilities. The permitted 50-acre temporary construction laydown area was located west of and adjacent to the proposed power plant site. The project site is relatively flat. The main population of the city of Palmdale is located approximately four miles south. The City of Lancaster is located immediately north of the project site along East Avenue M.⁶

The PHPP was approved to generate 570 nominal megawatts (MW) as a combined-cycle power plant, employing two General Electric (GE) Frame 7FA natural-gas-fired combustion turbine generators (CTGs) rated at 154 MW each, two heat-recovery steam generators (HRSGs), one steam-turbine generator (STG) rated at 267 MW, and 250 acres of parabolic solar-thermal collectors and associated heat transfer equipment arranged in rows. The PHPP would also include one evaporative (wet) cooling tower for steam condensation and evaporative inlet air cooling for the CTGs, an operations building, and auxiliary equipment.⁷

The PHPP was approved to use up to a maximum of 3.6 acre-feet per year (AFY) of potable water for sanitary purposes and 4,121 AFY of tertiary treated wastewater for industrial, wash-down, and associated process water uses necessary for its industrial steam generation and landscape irrigation. The source of the tertiary treated recycled

³ TN 47383.

⁴2011 PHPP Final Decision (TN 61876) <https://efiling.energy.ca.gov/getdocument.aspx?tn=61876>.

⁵ *Id.* at p. 2-1.

⁶ *Id.* at p. 2-2.

⁷ *Id.*

water was the City of Palmdale and/or the City of Lancaster. The Los Angeles County Waterworks would supply the potable water.⁸

The 2011 Decision approved two different alternative transmission line routes (see **Project Description Figure 1**). The first alternative route consists of two phases. Phase I would construct an overhead 230-kV line of approximately 23.7 miles in new and existing rights-of-way between the project site and Southern California Edison's (SCE) Pearblossom Substation to the southeast. Phase II would require construction of a new 11.9-mile, double-circuit overhead 230-kV line within the right-of-way of existing lines connecting the Pearblossom and Vincent Substations.⁹

The second alternative route would be a total of 12.8 miles, also built with two segments of 230-kV lines. The first segment of the second alternative would be underground for a total of 6.75 miles, and would follow the same route as the underground gas and water lines for the project. The second segment would be constructed as an overhead line for 6.05 miles (see **Project Description Figure 2**).¹⁰

The Current Amendments

On April 30, 2015, the PHPP project owner, City of Palmdale, filed a Petition for Ownership Transfer to Palmdale Energy, LLC (Petitioner), a solely-owned subsidiary of Summit Power Project Holdings, LLC. On the same day, the Petitioner submitted a Petition to Amend (Petition) to the California Energy Commission seeking permission to make changes to the Final Decision of the PHPP. The Petition proposes to change the approved PHPP from a 570 MW hybrid combined-cycle and solar-trough power plant to a natural-gas-fired 645 MW combined-cycle power plant.¹¹ Specifically, the Petition proposes to reduce the project site to 50 acres, eliminate the solar component, and replace the combustion turbine technology with fast-start flexible technology, as well as requests the project name be changed from Palmdale Hybrid Power Project to Palmdale Energy Project. The changes to the PHPP proposed by the amendments are described in greater detail in the **PROJECT DESCRIPTION** section of this Decision.

⁸ 2011 PHPP Final Decision; pp. 7.2-2 – 7.2-8.

⁹ *Id.* at p 5.5-1.

¹⁰ 2011 PHPP Final Decision, p. 5.5-1.

¹¹ With the CTGs at full load and the duct burners in-service, the HRSGs produce sufficient steam for operation of the STG at its peaking output of 276.2 MW (gross) at average ambient conditions, which results in an overall plant gross output of approximately 716.9 MW or plant net output of 699.4 MW. Ex. 2, p. 2-7, Figure 2-6c.

STANDARDS APPLICABLE TO AMENDMENT PROCEEDINGS

Warren-Alquist Act and Title 20 Regulations

The amended project and its related facilities are subject to Energy Commission licensing jurisdiction.¹² The Energy Commission's amendment process provides a thorough review and analysis of all aspects of a proposed power plant project. During this process, the Energy Commission conducts a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental aspects of the project. Specifically, the Energy Commission's process allows for and encourages public participation so that members of the public may participate either informally or on a formal level as intervenors. Intervenors have the opportunity to present evidence and question witnesses. Public participation is encouraged at every stage of the process.

Depending on the complexity of the proposed change(s), an amendment may be analyzed by Energy Commission staff (Staff) and referred directly to the Energy Commission for a final decision. Alternatively, as is the case in this proceeding, the amendment may be referred to a committee of two Commissioners (Committee)¹³ who manage the proceeding, take evidence, and submit a Presiding Member's Proposed Decision (PMPD) for public comment and consideration by the Energy Commission for a final decision.

A critical component of the amendment review process is Staff's preparation of its Final Staff Assessment (FSA).¹⁴ The FSA contains Staff's final, independent, objective evaluation of the engineering, environmental, and health and safety aspects of the project, as well as a staff determination of whether the project conforms to all applicable LORS. The FSA also includes Staff's recommendations for any new or amended existing conditions of certification as necessary to mitigate significant environmental effects and ensure compliance with all relevant LORS for the proposed amendment.

Following the publication of the FSA, the Committee holds a Prehearing Conference to assess the readiness of the parties to proceed to an Evidentiary Hearing, including adequacy of available information, unresolved issues or questions, and the positions of the parties. At the Evidentiary Hearings, all formal parties may present sworn testimony,

¹² Pub. Resources Code, § 25500 et seq.; Cal. Code Regs., tit. 20, § 1769.

¹³ The Committee for the PEP project consists of Commissioner Karen Douglas, Presiding Member, and Commissioner Janea A. Scott, Associate Member. The full Energy Commission made this Committee assignment at an Energy Commission Business Meeting on August 12, 2015.

¹⁴ Ex. 500.

which is subject to questioning by the other parties and the Committee. Members of the public may offer oral or written comments at the hearings. Evidence submitted at the Evidentiary Hearings provides the basis for the Committee's analysis and recommendations to the full Energy Commission.

The Committee's analysis and recommendations appear in the PMPD, which is available for a 30-day public comment period. After considering comments received during this period, the Committee may decide to publish a revised PMPD and provide an additional 15-day public comment period. Finally, the Energy Commission decides whether to accept, reject, or modify the Committee's recommendations at an Energy Commission Business Meeting.

Throughout the licensing process, members of the Committee, and ultimately the Energy Commission, serve as fact-finders and decision-makers. Parties including the petitioner, Staff, and intervenors 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 any issues in the proceeding with the decision-makers, their staffs, or the assigned hearing officer, unless these communications are made on the public record. The Office of the Public Adviser is available to assist the public in participating in all aspects of the amendment proceeding.

Before approving an amendment, the Energy Commission must find that:

- The amended project will not have significant¹⁵ unmitigated environmental effects or that specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the proceeding, and that the benefits of the project outweigh the unavoidable significant environmental effects of the project;
- The amended project will remain in compliance with all applicable LORS, or that the facility is required for the public convenience and necessity and that there are not more prudent and feasible means of achieving the public convenience and necessity;
- The change in the project will be beneficial to the public, petitioner, or intervenors; and

¹⁵ The Commission's regulations use the term "significant adverse environmental effect." See, e.g., Cal. Code Regs., tit. 20, § 1755. "Adverse" is redundant, however, in that by definition in the CEQA Guidelines (Cal. Code Regs., tit. 14, § 15382) an effect must be "adverse" in order to be "significant;" positive or beneficial effects cannot be significant. Therefore, when we use the terms "significant effect" or "significant impact" in this document, the reader may assume that those effects and impacts are adverse.

- There has been a substantial change in circumstances since approval of the 2011 Decision justifying the change or that the change is based on information that was not known and could not have been known with the exercise of reasonable diligence prior to approval of the 2011 Decision.¹⁶

Environmental Review

The California Environmental Quality Act (CEQA)¹⁷ requires that a lead agency consider the effects on the environment for projects it is considering. During licensing proceedings, the Energy Commission acts as the lead state agency under CEQA.¹⁸ The Energy Commission's regulatory process, including the evidentiary record and associated analyses, is functionally equivalent to the preparation of an Environmental Impact Report (EIR).¹⁹ As a practical matter, the Energy Commission utilizes the substantive concepts from CEQA, including baseline cumulative impacts, and tiering/streamlining of environmental review for projects previously approved by the Energy Commission.

CEQA Guidelines, Section 15162

CEQA encourages decision makers to, where appropriate, use a previous environmental analysis rather than conduct a new duplicative analysis. When an EIR has been previously certified or a negative declaration has been adopted, the Energy Commission is precluded from preparing a subsequent or supplemental EIR unless:

1. Substantial changes are proposed in the project that will require major revisions to the previous EIR due to the involvement of new significant environmental

¹⁶ Cal. Code Regs, tit. 20, §§ 1769, subd. (a)(3); 1755, subd. (d).

¹⁷ The CEQA statute, California Public Resources Code, section 21000 et seq., codifies a statewide policy of environmental protection. The California Resources Agency promulgates the CEQA Guidelines, California Code of Regulations, title 14, section 15000 et seq. (Guidelines), which detail the protocol by which state and local agencies comply with CEQA requirements. We refer to the statute and the Guidelines collectively as "CEQA." Hereafter, we will refer to the CEQA Guidelines in the format "CEQA Guidelines, section ____."

¹⁸ Pub. Resources Code, §§ 25519(c), 21000 et seq.

¹⁹ Pub. Resources Code, § 21080.5. An Environmental Impact Report (EIR) is a detailed informational document setting forth such matters as the significant environmental effects of a proposed project, any significant environmental effects that cannot be avoided if the project is implemented, mitigation measures proposed to minimize the significant environmental effects, and alternatives to the proposed project. (Pub. Resources Code, §§ 21061, 21100, 21100.1.) Although not called such, the Energy Commission prepares documents that function as EIRs. We use the term "EIR" to refer to our decisional document for ease of comparison with the language of the cases interpreting CEQA. (Pub. Resources Code, § 21080.5; CEQA Guidelines, § 15251, subd. (j)).

- effects or a substantial increase in the severity of previously identified significant effects; or
2. Substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
 3. New information of substantial importance, which was not known and could not have been known in 2011, shows:
 - A. The project will have one or more significant effects not discussed in the previous EIR;
 - B. Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - C. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - D. Mitigation measures or alternatives that are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.²⁰

Doubts are resolved in favor of finality, not in favor of reopening the CEQA process with a supplemental EIR, “even if the initial EIR is discovered to have been fundamentally inaccurate and misleading in the description of a significant effect or the severity of its consequences.”²¹ The courts err in favor of finality because “the time for challenging the sufficiency of the original EIR has long since expired, and the question is whether circumstances have changed enough to justify repeating a substantial portion of the process.”²²

The Energy Commission’s environmental review of the PEP is limited to those subject areas for which a subsequent or supplemental analysis is required by CEQA. If so

²⁰ Pub. Resources Code, § 21166; CEQA Guidelines § 15162.

²¹ *Laurel Heights Improvement Assn. v. Regents of University of California* (1993) 6 Cal.4th 1112, 1130.

²² *Bowman v. City of Petaluma* (1986) 185 Cal.App.3d 1065, 1073, internal citations and italics omitted.

required, we analyze the impacts of the incremental changes associated with the amendments.²³

The remainder of this document is, thus, organized by subject area. The discussions focus on whether supplementation of the previous environmental document (the 2011 Decision) is required and whether the PEP will comply with all applicable LORS. Where there are no significant changes to the findings and conclusions in the 2011 Decision,²⁴ its analysis will not be repeated beyond a brief explanation of the reasons for making that determination. For the convenience of the parties and public we will, however, include all of the conditions of certification for the PEP in **Appendix A**, whether or not they are changed from those adopted in the 2011 Decision.

Cumulative Impacts

Cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental effects.²⁵ A cumulative impact consists of an impact that is created as a result of the combination of the project evaluated in the EIR, together with other projects causing related impacts.²⁶ Related projects are past, present, and probable future projects producing similar impacts to the proposed amended project.²⁷

Under CEQA, there are two acceptable and commonly used methodologies for establishing the cumulative impact setting or scenario: the “list approach” and the “projections approach.” The first approach would use a “list of past, present, and probable future projects producing related or cumulative impacts.”²⁸ The second approach is to use a “summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document that has been adopted or certified, which described or evaluated regional or area-wide conditions contributing to the cumulative impact.”²⁹ This Decision uses the “list approach” to provide a tangible

²³ “[I]f the project under review merely constitutes a modification of a previously approved project previously subjected to environmental analysis, then the ‘baseline’ for purposes of CEQA is adjusted such that the originally approved project is assumed to exist.” (Remy & Thomas, *Guide to CEQA* (11th ed., 2006) p. 207.)

²⁴ 2011 PHPP Final Decision (TN 61876).

²⁵ *San Joaquin Raptor Rescue Center v. County of Stanislaus* (1994) 42 Cal.App.4th 608.

²⁶ CEQA Guidelines, § 15130, subd. (a)(1).

²⁷ CEQA Guidelines, § 15130, subd. (b)(1)(A).

²⁸ *Id.*

²⁹ CEQA Guidelines, § 15130, subd. (b)(1)(B).

understanding and context for analyzing the potential cumulative effects of the amended project.

Introduction Table 1 contains the list of projects used in this Decision for the required cumulative impacts analysis. Most of the projects in **Introduction Table 1** are required to undergo their own independent environmental reviews under CEQA. Staff developed the Cumulative Project List for the PEP by contacting planning staff of the cities of Palmdale and Lancaster. Staff also reviewed proposed project information from other agencies, including the California Department of Transportation and the CEQANet database.³⁰

Introduction Table 1³¹

Label ID #	Project Name	Description	Location	Distance from Project (Miles)	Status*
1	Recycled Water Project	The proposed Antelope Valley Recycled Water Backbone would link Lancaster pipelines to Palmdale's Water Reclamation Plant.	Sierra Highway, Ave M, Ave O, Ave P, Ave R, Rancho Vista Blvd, Palmdale	Various Locations	IS/MND
2	Site Plan Review No. 14-03	Construction of a 1-story, 28,878 sq. ft. DMV facility with 264 parking spaces.	8th Street West, Lancaster	2.5	MND
3	Kaiser Wind Turbine Project	Installation and operation of a 250-foot Toshiba U50 (750 kW) wind turbine. 1,500-foot trench would allow for the installation of a conduit to connect the wind turbine to the medical office building.	10th St West, 5th St. West, Ave. L, Ave. K-8, Lancaster	2.5	MND
4	Conditional Use Permit 14-12 (Penny Lane)	Construction of 75 affordable housing units totaling 68,866 sq. ft.	43401-43499 E Sahuayo Street, Lancaster	2.6	MND
5	CUP 14-017	Assisted living facility totaling 114,760 sq. ft. on 6-acres.	Northwest corner of Rancho Vista Blvd. and Division St. Palmdale	3.0	Completed
6	High Desert Corridor Project	Construct a new freeway/expressway connecting the City of Palmdale with the town of Apple Valley in San Bernardino County. HDCP is approximately 63 miles long. Construction estimated 2016 to 2040. Six construction phases each phase estimated 36 to 48 months.	SR-14 to SR-18, Los Angeles and San Bernardino counties	3.1	DEIR, Final EIR projected to be released Spring 2016

³⁰ Ex. 500, pp. 1-12 – 1-15.

³¹ Ex. 500, pp. 1-13 – 1-15.

Label ID #	Project Name	Description	Location	Distance from Project (Miles)	Status*
7	SPR 14-004	Request to construct pre-owned auto sales (three buildings totaling 51,103 sq. ft.).	Northeast corner of Technology Dr. and 5th St West, Palmdale	3.6	Approved
8	SPR 15-004	Proposed assisted care living facility within a 57,935 sq. ft. building.	12th Place East and East Ave. Q-2, Palmdale	3.8	Pending Approval
9	CUP 15-011	Request to establish use with alcohol sales and parking lot improvements.	100 feet south Avenue Q3, Palmdale	3.9	Pending Approval
10	SPR 15-005	Proposed 13,750 sq. ft. medical office building on 1.44-acres.	700 ft. south of Palmdale Blvd W of 5th St West, Palmdale	4.5	Approved
11	CUP 15-003	Request to develop 1.09-acres into church classrooms (1) bldg. at 2,075 sq. ft.	1328 East Ave R, Palmdale	4.7	Pending Approval
12	CUP 14-028	Proposed legalization of existing religious assembly use and proposed 6,817 sq. ft. expansion.	3030 East Ave. R-8, Palmdale	5.4	Pending Approval
13	47th Pavilion – Super Target Center	7,300 sq. ft. tire store.	Avenue R and 47th Street East, Palmdale	5.6	Completed
14	SPR 14-008	Request to develop a 1.4-acre parcel with a 4,152 sq. ft. retail/food use.	Ave R and 47th St E, Palmdale	5.6	Approved
15	Rancho Vista Boulevard and Town Center Drive	Walmart will be constructing a 40,000 sq. ft. market on the north side of Ranch Vista Boulevard, west of Town Center Drive.	North side of Ranch Vista Boulevard, west of Town Center Drive, Palmdale	5.7	Completed
16	Site Plan Review No. 15-03	Automobile recycling yard, including 5,580 sq. ft. of vendor shops, a 9,600 sq. ft. warehouse, and a 12,000 sq. ft. car crusher.	W Avenue H and Division Street, Lancaster	5.7	MND
17	Plaza Vallarta (Avenue R and 47th Street East)	7,200 sq. ft. auto parts store.	Avenue R and 47th Street East, north of Chase bank, Palmdale	5.8	Requires Final Approval Completed
18	Rottman Drilling Co.	Engine type: DIESEL IC ENGINE, PORTABLE PRIME Equipment: Year of Mfg. 2008, Rebuilt in 2014, Certified Tier 3, USEPA Family 8DDXL14.0VLD	46471 N Division Street, Lancaster	5.9	Approved

INTRODUCTION

Label ID #	Project Name	Description	Location	Distance from Project (Miles)	Status*
19	Blessed Junipero Serra Parish Expansion (CUP 14-13)	Expansion of a church totaling approximately 62,612 sq. ft.	60th Street West & Avenue M (Columbia Way), Lancaster	7.5	MND
20	SPR 14-006	Proposal to construct a ground mounted solar PV facility on 39-acres.	Southeast corner future alignment of Ave P and 100th E, Palmdale	9.3	Approved
21	SPR 15-001	Request to develop 25-acres into solar PV facility	Southwest corner of 110th East and Ave. Q, Palmdale	9.6	Approved
22	SPR 14-010	Request to develop 24-acres for solar from approved SPR 13-003 (160 acres)	Southwest corner of East Ave O and 110th St East, Palmdale	9.8	Approved
23	Northwest 138 Corridor Improvement Project	Corridor alternatives and related operational improvements such as improving sight distance and bringing non-standard roadway features up to current standards. Extends 36 miles along SR-138 from I-5 to SR-14 in Los Angeles County.	SR-138, 36 miles between I-5 and SR-14, Los Angeles County	10.1	Preparing DEIR. Circulation Spring 2016
24	Independence Solar and Big Horn Solar projects	Two PV solar facilities. Conditional Use Permit 15-07 is for construction and operation of a 5 MW PV facility and Conditional Use Permit 15-09 is for construction and operation of a 60 MW PV facility.		11.5	IS
25	Lancaster Energy Center	150 MW AC ground-mounted solar PV power facility. Project components would include access roads, solar modules, single-axis tracking or fixed-tilt systems, direct current (DC) to AC power inverters, medium voltage transformers, a medium voltage collection system, and interconnection switching stations.	Lancaster	11.7	DEIR
26	Del Sur Solar Project	Proposed 100 MW utility-scale solar generating facility on 725-acres. Solar electricity generated would be delivered by an approximately 2 to 4-mile underground gen-tie and communication line that would extend to two previously approved substations near the existing Southern California Edison Antelope Substation on West Avenue J, south of the proposed project.	Lancaster	12.5	DEIR June 2015
27	XpressWest	XpressWest is a proposed high-speed	I-15 corridor to Las	41.1	Obtaining

INTRODUCTION

Label ID #	Project Name	Description	Location	Distance from Project (Miles)	Status*
		passenger railroad that would connect Las Vegas with Southern California.	Vegas		additional required regulatory approvals

*IS = Initial Study

MND= Mitigated Negative Declaration

EIR = Environmental Impact Report

DEIR = Draft Environmental Impact Report

PROCEDURAL HISTORY OF THE CURRENT PETITION TO AMEND

The Warren-Alquist Act and Energy Commission regulations³² mandate a public review process and specify the occurrence of certain procedural events in which the public may participate. The key procedural events that occurred for the amended project are summarized below.

The formal parties to this action are the Petitioner, Palmdale Energy LLC, and Staff. No other individuals or entities requested to become intervenors.³³

On April 30, 2015, Palmdale Energy LLC filed the Petition to Amend and a Petition for Ownership Transfer.³⁴ The Energy Commission approved the ownership transfer on June 10, 2015 (TN 205022). On July 20, 2015, the Petitioner submitted a Revised Petition to Amend that contained information regarding the PEP's taller stack heights (from 145 feet to 160 feet), air quality, public health, greenhouse gas emission, socioeconomics, traffic and transportation, noise and vibration, visual resources, and cumulative impacts.³⁵ The Notice of Public Site Visit, Environmental Scoping Meeting, and Informational Hearing was issued on October 16, 2015,³⁶ and those events were held on November 16, 2015, in Palmdale, California.

³² Cal. Code Regs., tit. 20, § 1701 et seq.

³³ The City of Lancaster filed a Petition to Intervene on August 17, 2015 (TN 205759), which was granted on September 14, 2015 (TN 206102). On February 19, 2016, Lancaster withdrew as an intervenor (TN 210478).

³⁴ Ex. 1 and TN 204458, respectively.

³⁵ Exs. 2 — 6.

³⁶ TN 206385.

The Committee issued a Scheduling Order on December 2, 2015,³⁷ which was subsequently revised on February 17, 2017.³⁸

Staff held public workshops on December 17, 2015, and February 17, 2016, on the topics of air quality, cultural resources, hazardous materials, public health, socioeconomic, transmission system engineering, soil and water resources, worker safety and fire protection, and other technical issues.³⁹

On February 3, 2016, the Antelope Valley Air Quality Management District (AVAQMD) published its Preliminary Determination of Compliance for the PEP.⁴⁰

Staff published its Preliminary Staff Assessment (PSA) on March 23, 2016.⁴¹ Staff filed a Notice of Public Workshop on the PSA on April 8, 2016, and conducted a public workshop on the PSA on April 20, 2016.⁴² The 30-day public comment period for the PSA ended on April 22, 2016. In addition to comments from the Petitioner, four comment letters were submitted about the PSA.⁴³ Staff responded to the comments in their Final Staff Assessment, which was published on September 12, 2016.⁴⁴

On May 10, 2016, the Committee held a Public Status Conference.⁴⁵

On August 24, 2016, the AVAQMD filed its Final Determination of Compliance for the PEP.⁴⁶

On October 7, 2016, Applicant requested to delay the filing of Opening Testimony, Prehearing Conference Statements, and the Prehearing Conference to allow time to correct an error in the data supplied for the air-cooled condenser (ACC).⁴⁷ No opposition was filed in response to the request and the schedule was delayed. The Petitioner submitted new information regarding the thermal plumes associated with the ACC on

³⁷ TN 206819.

³⁸ TN 216085.

³⁹ TN 206869 and TN 210121.

⁴⁰ TN 210167.

⁴¹ TN 210835.

⁴² TN 210985.

⁴³ TN 211012, TN 211217, TN 211352, and TN 211353.

⁴⁴ Ex. 500.

⁴⁵ TN 211133.

⁴⁶ TN 212922.

⁴⁷ TN 213940.

November 28, 2016.⁴⁸ On December 9, 2016, Petitioner requested the Committee reinstate a schedule.⁴⁹

The Committee noticed and conducted a Prehearing Conference on March 10, 2017, at the Energy Commission in Sacramento, California, and an Evidentiary Hearing on March 22, 2017, at the Palmdale City Hall in Palmdale, California.⁵⁰ The Committee filed its PMPD on July 3, 2017, subject to a 30-day comment period. The Committee conducted a Committee Conference on the PMPD on July 24, 2017. The comment period closed on August 2, 2017.

On August 3, 2017, the Committee filed Errata to the PMPD containing corrections to the PMPD and responses to significant comments on the PMPD. At its August 9, 2017 Business Meeting, the Energy Commission considered the PMPD and the Errata and adopted the proposed Decision.

ENERGY COMMISSION OUTREACH

Several divisions within the Energy Commission provide various notices concerning power plant siting cases. Staff provides notices of its workshops and the release of the Staff assessments. The Hearing Office notices Committee-led events such as the Informational Hearing and Site Visit, Status Conferences, the Prehearing Conference, and the Evidentiary Hearing. The Public Adviser's Office provides additional outreach for critical events, language support, and information to interested persons that would like to become more actively involved in the proceeding. The public may also subscribe to a proceeding's e-mail List Serve offered on the Energy Commission's website, which gives an immediate notification of documents filed in the proceeding. Through the activities of these entities, the Energy Commission has attempted to ensure that interested persons are notified of activities in this proceeding.

AGENCY AND PUBLIC COMMENTS

The record contains public comments from concerned individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing. A summary and response to substantive comments is included in the individual sections that follow.

⁴⁸ TN 214567.

⁴⁹ TN 214721.

⁵⁰ TN 216085.

II. PROJECT DESCRIPTION

INTRODUCTION

This section describes the Palmdale Energy Project¹ (PEP), including the setting of the project location, and the project's objectives. This section also includes a comparison to the Palmdale Hybrid Power Project (PHPP) approved in 2011 by the California Energy Commission.

This topic was uncontested. Evidence on the topic of Project Description is contained in Exhibits 1, 2, 3, 4, 6, 21, 43, 46, 56, 500, and 508.²

SETTING

The PEP will be located within the licensed but undeveloped PHPP site located at 950 East Avenue M, Palmdale, California. The proposed site for the PEP is located approximately 60 miles north of downtown Los Angeles and in the northernmost portion of the city of Palmdale, east of the intersection of Sierra Highway and East Avenue M. The project site is located immediately north and west of the combined facilities of Los Angeles/Palmdale Regional Airport and U.S. Air Force Plant 42. **Project Description Figure 1** shows an overview of the project site approved previously as the PHPP. **Project Description Figure 2** shows the location of the PHPP power block and solar field, and the PEP power block and laydown area as proposed in the Petition to Amend. Finally, **Project Description Figure 3** provides a plot plan of the PEP site. **Project Description Figure 4** provides a general arrangement drawing of the PEP.

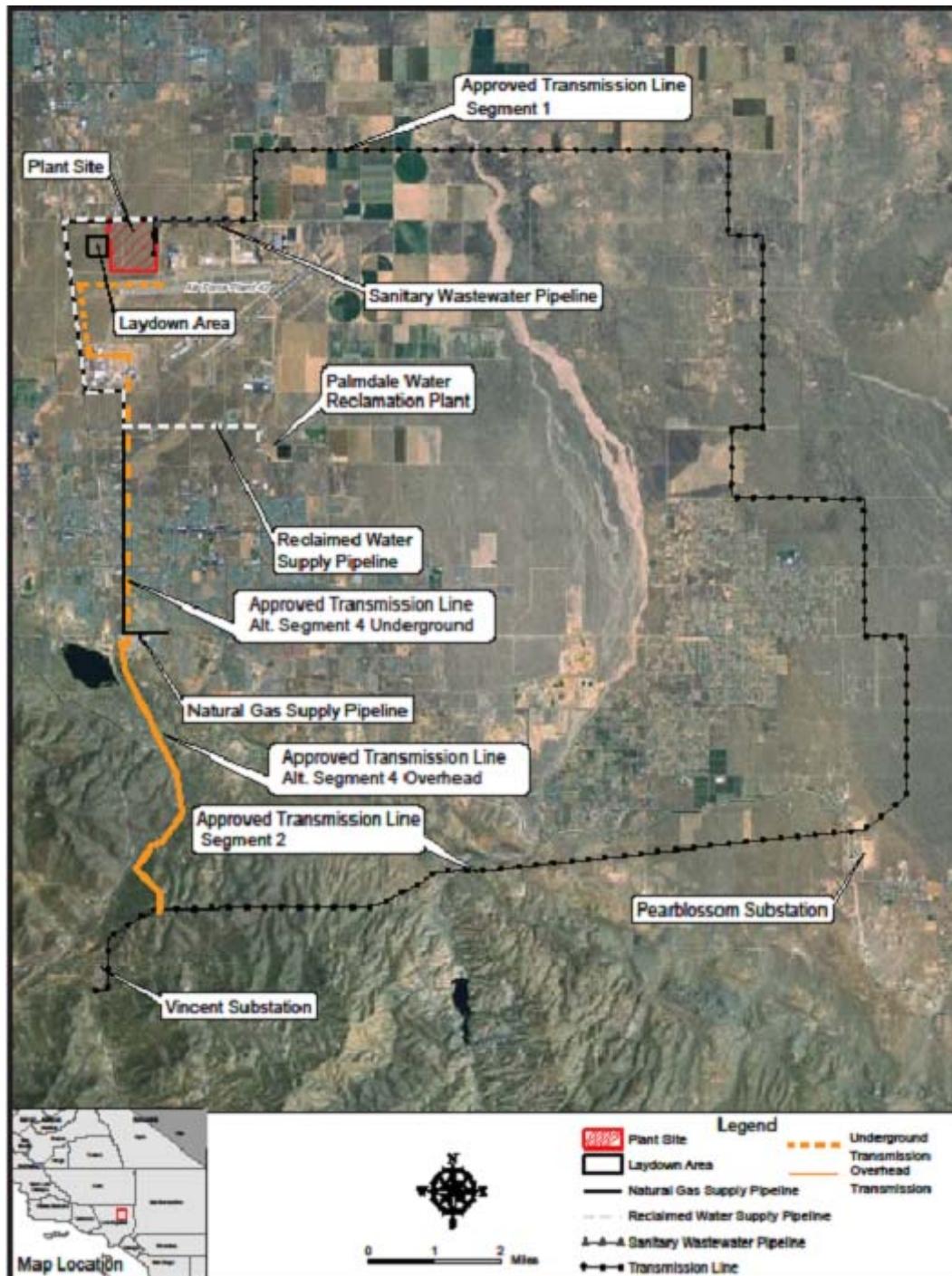
The PEP will be constructed on a 50-acre site that is currently a vacant and undeveloped land owned by the City of Palmdale in an industrial area of the city. An additional 20-acre portion of land located adjacent and north of the PEP site will be used for construction laydown and parking. After completion of the project construction, the 20-acre parcel will be restored and re-vegetated, if necessary, and remain under the ownership of the City of Palmdale. The site is relatively flat with the main population of the city of Palmdale located approximately four miles to the south. The city limit line between Palmdale and Lancaster is immediately north of the project site along East Avenue M.³

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

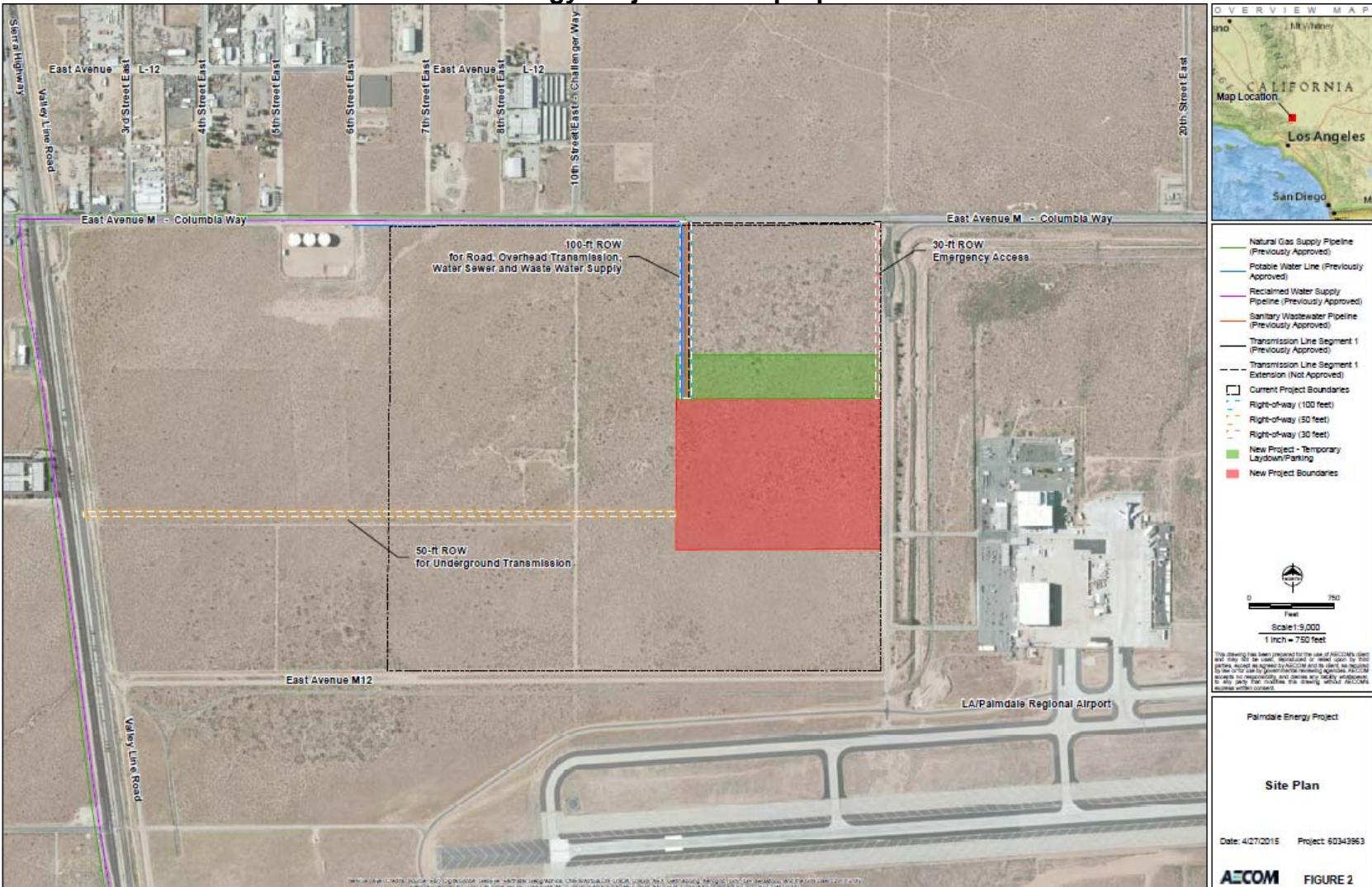
² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 3-1.

Project Description- Figure 1
Overview of the PHPP project site (approved in 2011)

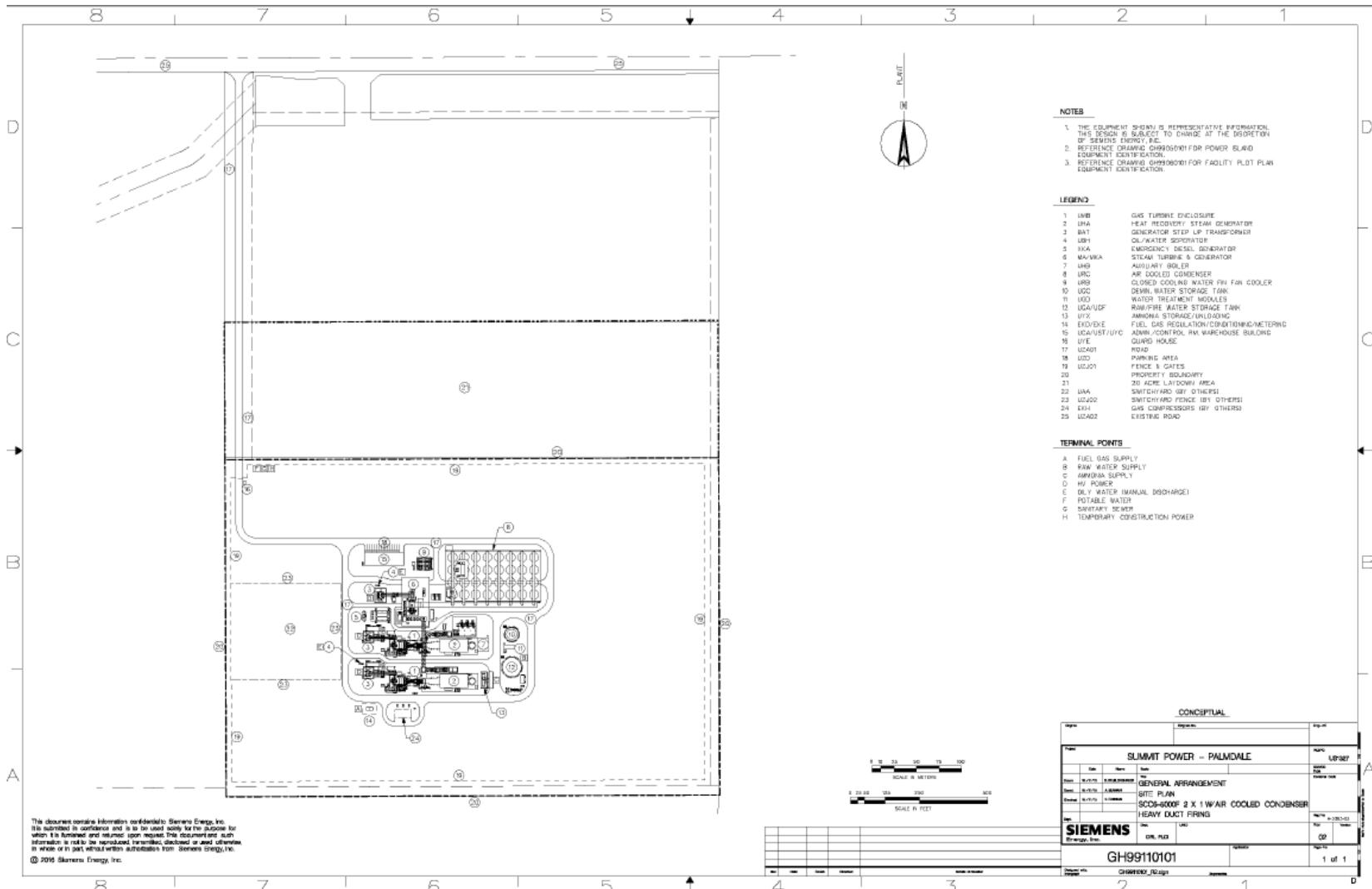


Project Description - Figure 2
Overview of the Palmdale Energy Project site as proposed in the Petition to Amend.



PROJECT DESCRIPTION

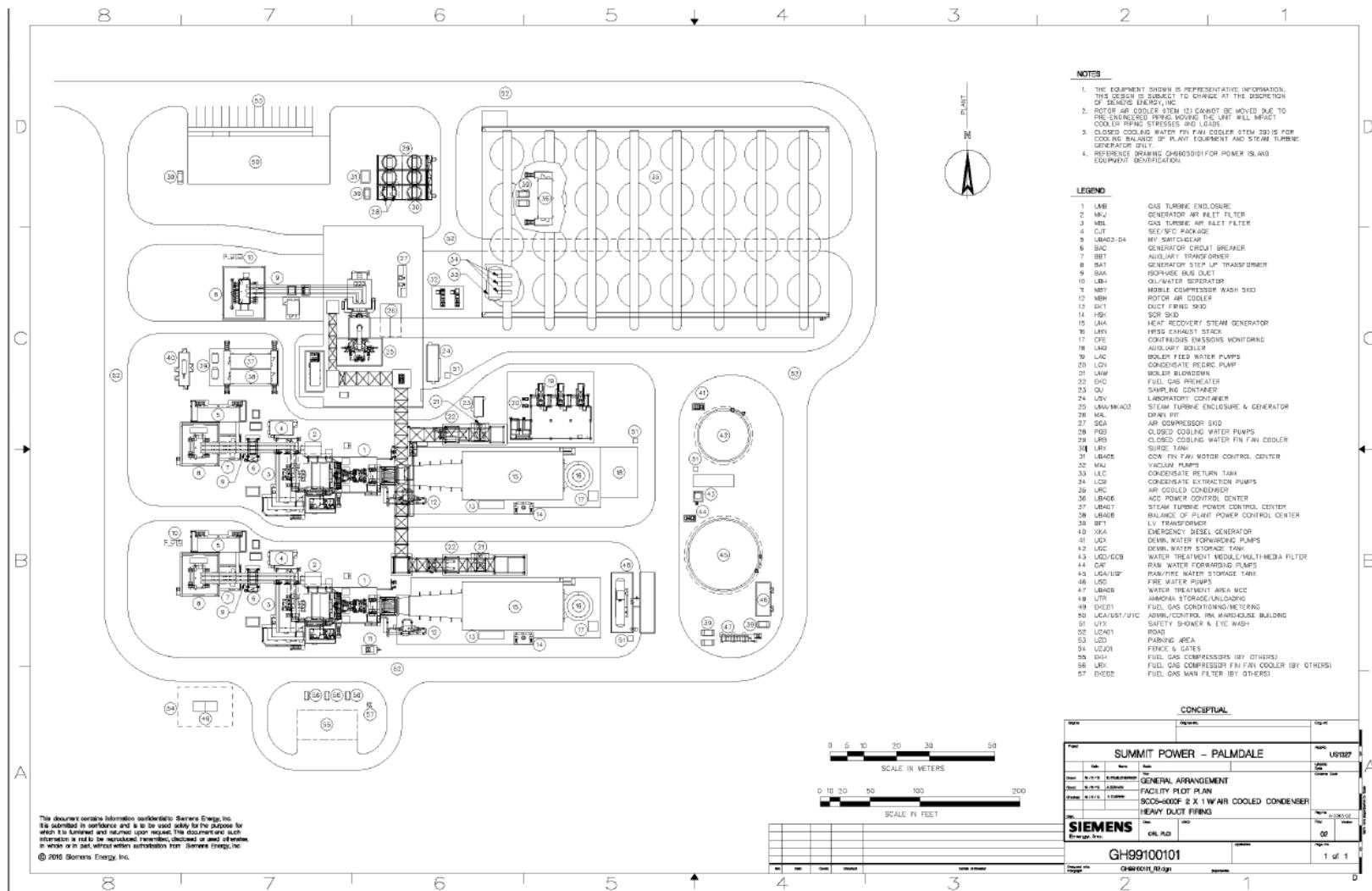
Project Description - Figure 3 General Arrangement Site Plan



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Project Description - Figure 4

General Arrangement Facility Plot Plan



PROJECT DESCRIPTION

PROJECT DESCRIPTION

Summary of the 2011 PHPP Decision⁴

The Energy Commission issued a Final Decision approving the construction and operation of the PHPP on August 10, 2011 (2011 Decision). To date, the facility has not been constructed. Under the 2011 Decision, the PHPP would have been a 570 megawatt (MW) project consisting of a hybrid of natural-gas-fired, combined-cycle generating equipment integrated with solar thermal generating equipment to be developed on an approximately 333-acre site. The combined-cycle equipment would utilize two natural-gas-fired combustion turbine generators (CTGs), two heat recovery steam generators (HRSGs), and one steam turbine generator (STG). The planned solar thermal equipment involved arrays of parabolic solar collectors for heating a high-temperature heat transfer fluid. The heat transfer fluid would be used to boil water to generate steam. The solar thermal input was to provide approximately 10 percent of the peak power generated by the project during the daily periods of highest energy demand. The combined-cycle equipment was to be integrated thermally with the solar thermal generating equipment at the HRSG and both would have used the single STG.⁵

The most visible features of the gas-fired portion of the PHPP included two 145-foot tall HRSG stacks, one 59-foot-tall, ten-cell cooling tower, two 70-foot-tall inlet air filters, and a 70-foot-tall STG enclosure.⁶ As approved, the PHPP would have permanently occupied 250 acres for the solar field, 26 acres for the power block, and 51 acres for the access road, setbacks, and drainage facilities. The project identified a temporary construction laydown area of 50 acres immediately to the west.⁷ To offset project emissions and reduce air emissions, the project owners were to pave segments of roads in the vicinity of the PHPP.⁸

The 2011 Decision approved two different alternative transmission line routes (see **Project Description – Figure 1**). The first alternative route consisted of 35.6-mile long overhead generator transmission lines with two segments. Segment 1 would be 23.7 miles long and located within new and existing rights-of-way (ROW) extending from the on-site substation through the northeast corner of the site, along 10th Street East and East Avenue L. The overhead transmission lines would then continue over industrial and agricultural areas, over open spaces, and along new and existing road ROW, until it connected at the California Department of Water Resources (DWR) Pearblossom

⁴ 2011 Final Decision, 08-AFC-09, Order No. 11-0810-09 (TN 61876).

⁵ *Id.* at p. 1-1.

⁶ Ex. 500, p. 4.12-2.

⁷ 2011 Final Decision pp. 1-2.

⁸ *Id.* at p. 2-4.

substation. The generator tie-line along Segment 1 would be a single circuit 230 kilovolt (kV) line supported on steel poles spaced approximately 750 feet apart, and between 100 feet and 135 feet in height. Approximately 18.2 miles of Segment 1 would be located within the city of Palmdale, while the remaining 5.5 miles would be within unincorporated Los Angeles County.⁹

Segment 2 of the first alternative route would be an 11.9 mile long, 230 kV overhead transmission line located in unincorporated Los Angeles County. It would proceed from north of the DWR's Pearblossom Substation southwest to Southern California Edison's (SCE) Vincent Substation. Segment 2 would be designed, built, operated, and maintained by SCE because the line would be located within an existing SCE ROW.¹⁰

The second alternative route was a total of 12.8 miles, also built with two segments of 230-kV lines. The first segment of the second alternative would be underground for a total of 6.75 miles, and would follow the same route as the underground gas and water lines for the project. The second segment would be constructed as an overhead line for 6.05 miles (see **Project Description Figure 1**).

The PHPP proposed using secondary-treated water for construction and tertiary-treated water for plant operations. Los Angeles County Waterworks was to supply this water under an agreement between the Palmdale and Lancaster water treatment plants. The tertiary-treated water would require a new 18-inch, 7.4-mile tertiary water supply pipeline. Potable (i.e., drinking) water was to be supplied by the Los Angeles County Waterworks via a 1.37-mile connection line along East Avenue M to an existing Los Angeles County Waterworks potable water service pipeline.¹¹

Natural gas was to be delivered to the project through a new 20-inch, 8.7-mile underground gas line designed and constructed by the Southern California Gas Company (So Cal Gas). The proposed gas line would be constructed from the project site south along Sierra Highway, east along Lockheed Way, south along 10th Street East, to East Avenue South along existing streets, and share the same route as the proposed secondary-treated water line.¹²

Construction of the PHPP was expected to take about 27 months, including startup testing. The construction workforce was estimated to employ on average 367 workers per month and would peak during month 12 with up to 767 workers on site. The construction schedule would typically consist of a 12-hour workday (Monday through

⁹ Ex. 500, p. 3-2.

¹⁰ *Id.* at pp. 3-2 – 3-3.

¹¹ 2011 Final Decision, p.2-3.

¹² *Id.* at p 2-3.

Friday), between the hours of 6:00 a.m. and 6:00 p.m. The City of Palmdale anticipated operational hours for the project would be seven days per week, 24 hours a day, employing 36 full-time employees. Capital costs for the combined-cycle portion of the PHPP were estimated at \$615 million to \$715 million.¹³

Industrial process wastewater and cooling water were to be treated using a Zero Liquid Discharge (ZLD) system, separating water for reuse from solids in the form of brine that would be converted into solids for disposal at an appropriately permitted off-site disposal facility. Sanitary wastewater was to be discharged through the Los Angeles County Sanitation District's sewer system.¹⁴

Petition to Amend

Palmdale Energy LLC filed a Petition to Amend the 2011 Decision on April 30, 2015, and a Revised Petition to Amend on July 20, 2015 (collectively referred to as "Petition").¹⁵ The PEP consists of a 645 MW (nominal capacity) two-on-one, natural-gas-fired, combined-cycle generating station. Primary equipment for the generating facility would include two Siemens SGT6-5000F natural-gas-fired CTGs rated at 220 MW each, two HRSGs, one STG rated at 232 MW, and one auxiliary boiler to provide sealing steam, allowing startup of the steam turbine shortly after the gas turbines. The PEP also includes the use of an air cooled condenser (ACC), a turbine inlet evaporative cooler for the CTGs, an operations building, and auxiliary equipment. The tallest components of the project would be the two 160-foot-tall, 22-foot-diameter HRSG exhaust stacks; 15 feet taller than the tallest stack height of the PHPP.¹⁶

The proposed PEP is designed to operate as a flexible capacity resource with the ability to start up to two times per day. The expected annual capacity factor is between 40 and 60 percent. Expected availability of the PEP is in the range of 90 to 95 percent.¹⁷

Construction of the PEP is expected to take 25 months. The construction workforce would average 371 workers over the entire construction period, and would peak during month 12 with up to 710 workers on site. Construction costs are estimated to be between \$700 and \$800 million. The operation workforce is expected to require 23 full-time employees.¹⁸

¹³ 2011 Final Decision, pp. 2-3 and 2-5.

¹⁴ *Id.* at pp. 2-3 - 2-4

¹⁵ Exs. 1-6 (jointly referred to herein as the Petition).

¹⁶ Ex. 500, p. 3-3.

¹⁷ *Id.*

¹⁸ Ex. 500, p. 3-5.

The proposed differences between the PHPP and the proposed PEP are highlighted below:

- Replacement of the General Electric gas turbines with two Siemens SGT6-5000Fs
- Increase in MW capacity from 570 MW (nominal) to 654 MW (nominal)
- A new steam turbine
- A new auxiliary boiler
- Elimination of the solar components (e.g., parabolic solar collectors, high-temperature heat transfer fluid storage, etc.) of the PHPP
- Elimination of brine concentrator/crystallizer systems
- Replacement of the wet cooling towers with an ACC
- Reduction of the project site from 333 acres to 50 acres
- Reduction of the construction laydown and parking area from 50 acres to 20 acres
- Reorientation of the power block with the HRSG stacks to the east and the combustion turbine inlets to the west
- Increased HRSG stack height by 15 feet
- Relocation of the site access road approximately 900 feet further east on East Avenue M to the western edge of the site property line
- Relocation of the point where the 230 kV transmission line turns south to the generating facility from East Avenue M to a point approximately 1,800 feet further west on East Avenue M
- Addition of three 230 kV transmission line towers along the south side of East Avenue M north of the project site and extension of the generation tie-line westerly approximately 1,800 feet along the south side of East Avenue M
- Addition of waste stream consisting of combustion turbine inlet evaporative cooler blow down, water treatment system reject, and plant drains
- Reduction in the length of the approved project's sewer pipeline, which will now interconnect with an existing city of Palmdale sewer pipeline along the south side of East Avenue M
- Change in the water steam cycle chemistry control system from a phosphate-based system to an all volatile system

- Possible change from a CO₂-based fire suppression system for gas turbine components to an FM200 based system,¹⁹ and
- Change in water consumption of recycled water from approximately 3,725 acre-feet/year AFY to a maximum of about 400 AFY.

Process water needs would be met by the use of reclaimed water supplied by either the Palmdale Water Reclamation Plant (PWRP) or the city of Lancaster Advanced Waste Water Treatment Plant. The PEP will likely interconnect to the existing reclaimed water pipeline located near the intersection of Sierra Highway and East Avenue M via a one-mile extension to the project. The pipeline will be installed primarily in existing street ROWs within the city of Palmdale. The Petition does not modify the route of the reclaimed water supply line. In the event that neither of the above options is ready to serve the project, water is proposed to be trucked from the PWRP to the PEP until the connection is made.²⁰

PROJECT OBJECTIVES

The Petition identified the PEP's objectives as follows:

- Provide an efficient, flexible, reliable, and environmentally sound power generating facility to meet future electrical power needs of California;
- Provide daily fast start and fast ramping capabilities needed to provide Flexible Capacity that is required to manage the integration of intermittent resources;
- Locate the facility within the boundaries of the city of Palmdale to provide economic development and tax revenue to the city of Palmdale and surrounding areas;
- Site the facility in a location zoned and planned for industrial use in an industrial area and with ready access to both adequate supplies of non-potable water to meet the facility's process water needs and to a natural-gas pipeline that can supply the project without requiring significant modifications to the regional gas supply system;
- Minimize the generating facility's water usage as much as practical; and
- Utilize the existing California Independent Service Operator (California ISO) Large Generator Interconnection Agreement (LGIA).²¹

¹⁹ Ex. 500, p. 3-4.

²⁰ Ex. 500, p. 3-5.

²¹ Ex. 2, pp. 2-33 – 2-34.

FINDINGS SPECIFIC TO AN AMENDMENT

As noted in the **INTRODUCTION** section of this Decision, before approving an amendment, the Energy Commission must find that:

- The PEP will not have significant unmitigated environmental effects or that specific economic, social, or other considerations make infeasible the mitigation measures or project alternatives identified in the proceeding, and that the benefits of the project outweigh the unavoidable significant environmental effects of the project;
- The PEP will remain in compliance with all applicable laws, ordinances, regulations, and standards (LORS) or that the facility is required for the public convenience and necessity and that there are not more prudent and feasible means of achieving the public convenience and necessity;
- The change from the previously-approved project will be beneficial to the public, petitioner, or intervenors; and
- There has been a substantial change in circumstances since the original approval justifying the change or that the change is based on information which was not known and could not have been known with the exercise of reasonable diligence prior to the original approval.²²

BENEFITS

According to the evidence, the modifications proposed in the Petition provide an opportunity to modify the PHPP to meet the new regional demand without the need to permit a new site. In addition, the PEP will substantially reduce the original footprint, further reducing environmental impacts that were found to be less than significant with the imposition and implementation of mitigation measures by the 2011 Decision. The use of a fully-permitted site (as reconfigured) with an approved LGIA, is a responsible approach to helping California achieve its regional demand and further integrate renewable resources.²³

Specifically, the PEP reduces the permanent project footprint (excluding linear facilities) from 333 acres to approximately 50 acres. It also reduces the temporary construction laydown and parking from 50 acres to 20 acres and provides the following environmental benefits:

²² Cal. Code Regs, tit. 20, §§ 1755, subd. (d); 1769, subd. (a)(3).

²³ Ex. 1, p. 1-7.

- Reduces permanent habitat impacts from 333 acres to 50 acres;
- Reduces temporary habitat impacts from 50 acres to 20 acres (construction laydown and parking areas);
- Reduces operational water use from 4,125 AFY to approximately 400 AFY, primarily by replacing the wet-cooling tower with an ACC;
- Elimination of on-site waste treatment associated with the Brine Concentrator/Crystallizer system;
- Reduces water use during construction from 807 acre feet to less than 100 acre feet;
- Reduces mass grading of 283 acres as a result of elimination of the solar field;
- Reduces direct and indirect impacts to washes by eliminating the solar field;
- Eliminates the use of 260,000 gallons of Therminol heat transfer fluid by eliminating the solar component;
- Eliminates glint and glare impacts and other visual impacts from the 250 acres of the solar field;
- Eliminates the visual plume that occurs with a “wet” cooling tower;
- Reduces the visual impact to viewers by eliminating the large south field;
- Reduces construction emissions;
- Reduces traffic impacts due to the smaller peak and average construction labor force; and
- Eliminates the need to install a one-mile, sanitary wastewater pipeline from the PEP plant site to the intersection of 10th Street East and East Avenue L.²⁴

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **PROJECT DESCRIPTION** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

²⁴ Ex. 1, pp. 1-7 – 1-8.

FINDINGS OF FACT

Based upon the evidence, the Energy Commission makes the following findings:

1. The changes to the previously-approved Palmdale Hybrid Power Project as proposed in the Palmdale Energy Project will be beneficial to the public by reducing water use, providing additional local generating capacity, providing construction and operations employment and tax revenues, and reducing environmental impacts due to a smaller project site.
2. The Palmdale Energy Project will help integrate renewables by providing efficient, quick-start, air-cooled generation.
3. The Palmdale Energy Project will not have significant unmitigated environmental effects.
4. There has been a substantial change in circumstances since the original approval justifying the change as described in this Decision.

CONCLUSIONS OF LAW

1. The amended Palmdale Energy Project is described at a level of detail sufficient to allow review in compliance with the provisions of the Warren-Alquist Act, the California Environmental Quality Act, and the California Code of Regulations, title 20, section 1769.
2. The change from the previously-approved Palmdale Hybrid Power Project will be beneficial to the public and Petitioner.
3. The Palmdale Energy Project will remain in compliance with all applicable laws, ordinances, regulations, and standards.

III. ENGINEERING ASSESSMENT

The broad engineering assessment of the Palmdale Energy Project (PEP) consists of separate analyses that examine **FACILITY DESIGN ENGINEERING**, **EFFICIENCY**, and **RELIABILITY**. These analyses include the on-site power generating equipment and the project-related linear facilities.

A. FACILITY DESIGN

INTRODUCTION

Facility Design encompasses the civil, structural, mechanical, and electrical engineering design of the PEP. The purpose of the facility design analysis is to verify that the laws, ordinances, regulations, and standards (LORS) applicable to the design and construction of the project have been identified, verify that the project and ancillary facilities have been described in sufficient detail, determine whether special design features should be considered during final design to deal with conditions unique to the site, describe the design review and construction inspection process, and establish conditions of certification that will be used to monitor and ensure compliance with the LORS and any special design requirements.

This topic was uncontested. Evidence on the topic of Facility Design is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, 505, and 508.¹

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PALMDALE HYBRID POWER PROJECT (PHPP) DECISION²

The 2011 PHPP³ Decision (2011 Decision) imposed conditions of certification that establish a design review and construction inspection process to ensure compliance with applicable engineering LORS and to confirm the PHPP would be built in a manner

¹ 3/22/17 RT 9:3-11; 12:11-12:51:1.

² 2011 PHPP Final Decision (TN 61876).

³ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

to ensure human health and safety. In addition, those conditions of certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. They further require project design approval and construction inspection by the Energy Commission's delegate Chief Building Official (DCBO) to ensure compliance with those conditions of certification and the LORS.⁴

ENVIRONMENTAL ANALYSIS

No environmental standards apply to the topic of Facility Design.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP. The evidence establishes that the only LORS applicable to the project that has been amended since the 2011 Decision is the applicable version of the California Building Standards Code (CBSC) from 2007 to 2013. The PEP does not trigger any new LORS that may not have been applicable to the original project.⁵

After reviewing the Petitioner's design proposals for the project's structural features, site preparation, major structures and equipment, mechanical systems, electrical designs and ancillary facilities, the Energy Commission Staff witness concluded that, with the implementation of conditions of certification, the project design will meet all LORS.⁶

CHANGES TO CONDITIONS OF CERTIFICATION

Facility Design conditions of certification contained in the 2011 Decision refer to the 2007 edition of the CBSC. Since the issuance of the Decision in 2011, the CBSC has been revised and its current applicable version is the 2013 edition. The conditions of certification relevant to Facility Design have been updated and are contained in **Appendix A**.⁷ These revisions to the conditions of certification are minor and do not substantially affect Facility Design since the same LORS, design review, and inspection process apply to both the PHPP and the PEP.⁸

In order to ensure that the facility's decommissioning and closure will be completed in a manner that is environmentally sound, safe, and protects the public health and safety, the project owner must implement a decommissioning and closure plan, as described in Conditions of Certification **COM-7** and **COM-15** in the **Compliance Monitoring Plan**.

⁴ Ex. 500, p. 5.1-2.

⁵ Ex. 500, p. 5.1-1.

⁶ Ex. 500, p. 5.1-3.

⁷ Exs. 500, p. 5.1-2; 508, **FACILITY DESIGN** Conditions of Certification; Appendix A, p. 20.

⁸ *Id.*

The project owner must submit this plan to the Energy Commission for review and approval prior to decommissioning the facility⁹

With the imposition and implementation of the updated and existing Conditions of Certification **GEN-1** through **GEN-8**, **CIVIL-1** through **CIVIL-4**, **STRUC-1** through **STRUC-4**, **MECH-1** through **MECH-3**, and **ELEC-1**, the PEP will comply with all applicable LORS.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **FACILITY DESIGN** were received after the Final Staff Assessment was published or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The laws, ordinances, regulations, and standards identified in the 2011 Decision and supporting documents are applicable to the Palmdale Energy Project.
2. The Energy Commission design review and construction inspection process will provide the necessary reviews to ensure compliance with applicable facility design laws, ordinances, regulations, and standards and conditions of certification.

CONCLUSIONS OF LAW

1. The conditions of certification set forth in **Appendix A** ensure that the project will be designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety and to ensure compliance with all applicable engineering laws, ordinances, regulations, and standards pertinent to its geologic location, and its civil, structural, mechanical, and electrical engineering aspects.
2. The conditions of certification in **Appendix A** and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of the planned, the unexpected temporary, or the unexpected permanent closure of the facility.

⁹ Exs. 500, p. 5.1-2; 508, **FACILITY DESIGN** Conditions of Certification; **Appendix A**, p. 20.

B. POWER PLANT EFFICIENCY

INTRODUCTION

This section reviews whether the Palmdale Energy Project¹ (PEP) will use energy efficiently and avoid unnecessary consumption of energy.

This topic was uncontested. Evidence on the topic of Power Plant Efficiency is contained in Exhibits 1, 2, 3, 3, 4, 6, 43, 46, 56, 500, and 508.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The Petition to Amend³ proposes to substitute the approved rapid response (fast response flexible ramping capability) two-on-one, combined-cycle configuration using two General Electric 7FA Combustion Turbine Generators (CTGs) and a cooling tower with a rapid response two-on-one, combined-cycle configuration using two Siemens SGT6-5000F CTGs and an ACC. The petition also proposes to eliminate the solar energy component associated with the PHPP.

Consistent with the PHPP, natural-gas fuel will be delivered to the PEP via a new Southern California Gas (SoCalGas) pipeline. The SoCalGas natural gas comes from resources in the Southwest, Canada, and the Rocky Mountains.

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION⁴

The 2011 Palmdale Hybrid Power Project (PHPP) Decision (2011 Decision) found that the PHPP's maximum nominal efficiency was 59 percent using its solar energy component, and 53 percent without its solar energy component, which compared favorably with the efficiency of typical combined-cycle power plants without a solar energy component.

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12:51:1.

³ Exs. 1 and 2.

⁴ 2011 PHPP Final Decision (TN 61876).

The 2011 Decision concluded that the quantities of natural-gas fuel needed for the PHPP would create a less than significant impact on natural-gas supplies and resources and found the source of natural-gas fuel for the project to be reliable. There were no conditions of certification imposed for power plant efficiency for the PHPP.⁵

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines, section 15162, are met. The evidence establishes that there would be:

1. No new significant impacts related to power plant efficiency not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts related to power plant efficiency;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to power plant efficiency; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment related to power plant efficiency.⁶

The maximum nominal combined-cycle efficiency of the PEP is 56 percent. This efficiency is greater than the 53 percent maximum nominal efficiency of the PHPP with the solar system off, but less than the 59 percent maximum nominal efficiency of the PHPP with the solar system operating.⁷ However, the PHPP's ability to reach 59 percent efficiency would have been limited to the times when solar heat reaches its peak on summer afternoons. Thus, on an annual basis, the PHPP's average efficiency would not likely be higher than its median figure of 56 percent, which is also the PEP's expected efficiency. It would, therefore, be unlikely that the PEP would consume significantly more natural gas annually than the PHPP, and similar to the PHPP, the PEP would not create a significant impact on natural-gas supplies and resources.⁸

⁵ Ex. 500, p. 5.3-1.

⁶ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162; Ex. 500, p. 5.3-2.

⁷ Ex. 500, p. 5.3-2.

⁸ *Id.*

The PEP's thermal efficiency compares favorably to the efficiency of the currently operating similar combined-cycle electric generation power plants that provide rapid-response capability.⁹

Just as for the PHPP, natural gas will be delivered to the PEP via a new 8.7-mile long SoCalGas pipeline. The natural gas originates from resources in the Southwest, Canada, and the Rocky Mountains, which represent a resource of considerable capacity and offer access to adequate supplies of natural gas. Therefore, the source of natural-gas fuel for the amended project is reliable.¹⁰

Therefore, we find, on the basis of this uncontroverted evidence, no need to conduct additional review on the potential environmental impacts of the PEP related to power plant efficiency.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, OR STANDARDS (LORS)

No federal, state, or local LORS apply to power plant efficiency.¹¹

CHANGES TO CONDITIONS OF CERTIFICATION

There are no conditions of certification under the topic of **POWER PLANT EFFICIENCY**.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **POWER PLANT EFFICIENCY** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The Palmdale Energy Project would substitute the Palmdale Hybrid Power Project's rapid response (fast response flexible ramping capability) two-on-one, combined-cycle configuration using two General Electric 7FA Combustion Turbine Generators and a cooling tower with a rapid response two-on-one combined-cycle configuration using two Siemens SGT6-5000F combustion turbine generators and an air cooled condenser.
2. The Palmdale Energy Project's maximum nominal combined-cycle efficiency would be 56 percent.

⁹ Ex. 500, p. 5.3-2.

¹⁰ *Id.*

¹¹ Ex. 500, p. 5.3-1.

3. The Palmdale Energy Project's thermal efficiency would compare favorably to the efficiency of the currently-operating similar combined-cycle electric generation power plants that provide rapid-response capability.
4. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines, section 15162, described in the **INTRODUCTION** section of this Decision are present regarding power plant efficiency.
5. There are no applicable laws, ordinances, regulations, or standards applicable to power plant efficiency.
6. There are no conditions of certification required for power plant efficiency.

CONCLUSIONS OF LAW

The Energy Commission concludes that the Palmdale Energy Project satisfies the standards established by the California Environmental Quality Act Guidelines for non-renewable energy consumption because it will not result in adverse effects upon energy supplies or resources, or require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.

C. POWER PLANT RELIABILITY

INTRODUCTION

The topic of power plant reliability focuses on whether the Palmdale Energy Project¹ (PEP) will be designed, sited, and operated to ensure safe and reliable operation.² The Energy Commission generally makes the determination of reliability by looking at whether a project is at least as reliable as other power plants in the system, including the licensed Palmdale Hybrid Power Project (PHPP).

This topic was uncontested. Evidence on the topic of Power Plant Reliability is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.³

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PHPP DECISION

The 2011 PHPP Decision (2011 Decision)⁴ did not impose any conditions of certification specifically for the reliability aspects of the PHPP. Instead, the 2011 Decision focused on various aspects of reliability and utilized conditions of certification from other sections of the 2011 Decision to ensure reliability. The 2011 Decision found that the PHPP's plant maintenance program and redundant equipment list, the sources of the project's natural-gas fuel and cooling-water supplies, and the project's ability to withstand natural disasters by complying with the Facility Design conditions of certification would result in an adequate level of reliability that equals or exceeds reliability of similar operating electric generation facilities.⁵

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines, section 15162, are met. The evidence establishes that there would be:

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² Pub. Resources Code, § 25520, subd. (b); Cal. Code Regs., tit. 20, §§ 1741(b)(3), 1745.5(b)(15).

³ 3/22/17 RT 9:3-11; 12:11-12:51:1.

⁴ 2011 PHPP Final Decision (TN 61876).

⁵ Ex. 500, p. 5.4-1.

1. No new significant power plant reliability impacts not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to reliability; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment related to reliability.⁶

Similar to the PHPP, the PEP will include two combustion turbine generators (CTGs), each coupled with one heat-recovery steam generator (HRSG). This arrangement provides inherent reliability compared to a power plant with only one set of CTGs and HRSGs. Failure of a non-redundant component of one CTG/HRSG train cannot disable the other train, thereby allowing the power plant to continue to generate electricity, though at reduced output. While the functioning train's CTG is operating, its HRSG could produce enough steam to run the steam turbine generator at partial load. The PEP's ancillary systems will also include adequate redundancy to ensure their continued operation if equipment fails.⁷

The PEP's proposed maintenance program and sources of natural-gas fuel and cooling-water supplies are the same as the PHPP. Also, similar to the PHPP, the PEP can withstand natural disasters and comply with the latest seismic design criteria by complying with the conditions of certification described in the **FACILITY DESIGN** section of this Decision. The PEP includes a quality assurance and quality control program for project design, construction, procurement, and operation.⁸ Therefore, the PEP has demonstrated a level of plant availability and reliability similar to the PHPP.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

No federal, state, or local/county laws, ordinances, regulations, or standards (LORS) apply to power plant reliability.⁹

CHANGES TO CONDITIONS OF CERTIFICATION

Conditions of certification imposed in the 2011 Decision to ensure reliability are contained in the **FACILITY DESIGN** and **GEOLOGICAL AND PALEONTOLOGICAL RESOURCES** sections. These conditions are re-imposed for the PEP with no changes.

⁶ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a); Ex. 500, p. 5.4-2.

⁷ Ex. 500, p. 5.4-2.

⁸ *Id.*

⁹ Ex. 500, p. 5.4-3.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **POWER PLANT RELIABILITY** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project's plant maintenance program and redundant equipment list, the sources of the project's natural-gas fuel and water supplies, and the project's ability to withstand natural disasters by complying with the conditions of certification for **FACILITY DESIGN** and **GEOLOGICAL AND PALEONTOLOGICAL RESOURCES** resulted in an adequate level of reliability that equals or exceeds the reliability of other power plants.
2. There are no laws, ordinances, regulations, or standards that apply to the Palmdale Energy Project related to power plant reliability.
3. The Palmdale Energy Project will be built and operated in a manner consistent with industry norms for reliable operation and will maintain a level of reliability that equals or exceeds the reliability of other similar electric generation power plants, including the Palmdale Hybrid Power Project.
4. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines, section 15162, and described in the **INTRODUCTION** section of this Decision, are present regarding power plant reliability.
5. The Palmdale Hybrid Power Project Decision included no conditions of certification for power plant reliability.

CONCLUSIONS OF LAW

1. The Palmdale Energy Project does not create significant direct, indirect, or cumulative environmental effects related to power plant reliability.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the amended Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts relating to power plant reliability.

D. TRANSMISSION SYSTEM ENGINEERING

INTRODUCTION

This section of the Decision assesses the engineering and long-term planning consequences of new transmission facilities associated with the Palmdale Energy Project¹ (PEP). This includes whether the project's new transmission facilities and outlet line to the point of interconnection will comply with applicable laws, ordinances, regulations, and standards (LORS), and whether any upgrades beyond the interconnection point are necessary to mitigate potential project-related impacts to the electrical grid.

This topic was uncontested. Evidence on the topic of Transmission System Engineering is contained in Exhibits 1, 2, 3, 4, 6, 22, 28, 30, 38, 39, 41, 42, 43, 46, 56, 500, and 508.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The PEP would eliminate the solar components and replace the approved generators with two Siemens SGT6-5000F Combustion Turbine Generators and one steam turbine generator. The expected peak generation output with the duct burners in-service is approximately 700 megawatt (MW), 130 MW more than the approved Palmdale Hybrid Power Project (PHPP).³

The PEP proposes to extend the generator tie-line westerly for approximately 1,800 feet. The generator tie-line would be built with 1272 kcmil aluminum conductor steel-reinforced (ACSR) bundled conductors. Three poles would be added to support the extension section of the generator tie-line. The balance of the approved original generator tie-line routes remains unchanged. Power would be distributed to the Southern California Edison (SCE) transmission system through the SCE Vincent Substation.⁴

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 5.5-1.

⁴ *Id.*

SUMMARY OF 2011 DECISION⁵

The 2011 PHPP Decision (2011 Decision) approved two different alternative transmission line routes (see **Project Description Figure 1** in the **PROJECT DESCRIPTION** section of this Decision). The 35.6 mile long route would connect the PHPP from the project site to the SCE Vincent Substation via a 1590 ACSR-bundled overhead conductor. The 2011 Decision also approved an alternative 12.8-mile-long generator tie-line (gen tie-line) route that includes a 6.75-mile underground transmission cable and a 6.05-mile overhead conductor. The alternative route would also connect to the Vincent Substation. Power would be distributed to the SCE system for the Vincent Substation. With the exception of the 1,800 feet of additional gen tie-line along East Avenue M, due to the change in the location of the project switchyard, the PEP proposes no changes to either of the approved generator tie-line routes.⁶

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines, section 15162, are met. Energy Commission staff (Staff) testified that, even with the substitution of equipment, reconfiguration of the project footprint, additional 130 MW of generation, and additional 1,800 feet of transmission generation tie-line, there would be:

1. No new significant transmission system engineering impacts not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to transmission system engineering; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 PHPP Decision would substantially reduce one or more significant effects of the PEP on the environment related to transmission system engineering.⁷

The evidence establishes that the PEP facilities between the PEP generators and the SCE Vincent Substation include step-up transformers, a 230 kV switchyard, the 230 kV overhead transmission lines, and termination equipment, which are acceptable and will

⁵ 2011 PHPP Final Decision (TN 61876).

⁶ Ex. 500, p. 5.5-1.

⁷ Ex. 500, pp. 5.5-1; 5.5-5.

comply with all applicable LORS. The PEP will not cause additional downstream transmission impacts beyond those identified in the approved PHPP.

Therefore, we conclude that adoption and implementation of Conditions of Certification **TSE-1** through **TSE-7** will mitigate any significant impacts associated with the PEP.⁸

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The evidence establishes that there have been no changes to the LORS since the 2011 PHPP Decision that apply to the PEP's transmission system engineering. After reviewing the PEP's proposed transmission line route including its design, operational plan, and routing, the evidence establishes that with the implementation of conditions of certification, the transmission system engineering will meet all LORS as previously identified in the 2011 Decision.⁹

We, therefore, find that with the imposition and implementation of Conditions of Certification **TSE-1** through **TSE-7** (contained in **Appendix A**), the PEP will not cause any direct, indirect, or cumulative impacts on transmission.¹⁰

CHANGES TO CONDITIONS OF CERTIFICATION

There are no proposed changes to the conditions of certification on the topic of **TRANSMISSION SYSTEM ENGINEERING**.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **TRANSMISSION SYSTEM ENGINEERING** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based upon the evidence, the Energy Commission makes the following findings:

1. The laws, ordinances, regulations, and standards identified in the 2011 Decision for the Palmdale Hybrid Power Project and supporting documents are also applicable to the Palmdale Energy Project.
2. No new laws, ordinances, regulations, or standards apply to the Palmdale Energy Project.
3. The 2011 Decision found that the Palmdale Hybrid Power Project would conform with all applicable laws, ordinances, regulations, and standards.

⁸ All conditions of certification are contained in **Appendix A**.

⁹ Ex. 4.11-2.

¹⁰ Ex. 5031; Ex. 6000, pp. 5.5-2 – 5.5-3.

4. The 2011 Decision found that the Palmdale Hybrid Power Project, with the implementation of the conditions of certification of the original project, would not have any significant direct, indirect, or cumulative impacts to transmission system engineering.
5. The facilities between the new generators and the SCE Vincent Substation, including the step-up transformers, the project 230 kV switchyard, the 230 kV overhead transmission lines, and termination equipment are acceptable and comply with all laws, ordinances, regulations, and standards.
6. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines, section 15162, described in the **INTRODUCTION** section of this Decision are present regarding transmission system engineering.
7. The Palmdale Energy Project interconnection with the transmission grid will not require additional downstream transmission facilities (other than those identified for the Palmdale Hybrid Power Project) that would require review under the California Environmental Quality Act.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards relating to transmission system engineering.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to transmission system engineering.

E. TRANSMISSION LINE SAFETY AND NUISANCE

INTRODUCTION

This topic focuses on ensuring that the proposed Palmdale Energy Project's¹ (PEP) transmission line is constructed and operated in a manner that protects environmental quality, ensures public health and safety, and complies with applicable laws. This section assesses the potential impacts of the transmission line on aviation safety, 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 array (EMF) exposure, and identifies mitigation measures that would reduce any potential impacts to less than significant levels.

This topic was uncontested. Evidence on the topic of Transmission Line Safety and Nuisance can be found in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION³

The 2011 Palmdale Hybrid Power Project (PHPP) Decision (2011 Decision) approved two different alternative transmission line routes (see **Project Description Figure 1** in the **PROJECT DESCRIPTION** section of this Decision). The first alternative route would be built in two phases. Phase I would construct an overhead 230-kV line of approximately 23.7 miles in new and existing rights-of-way between the project site and Southern California Edison's (SCE) Pearblossom Substation to the southeast. Phase II would require construction of a new 11.9-mile, double-circuit overhead 230-kV line within the right-of-way of existing lines, connecting the Pearblossom and Vincent Substations.⁴

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12:51:1.

³ 2011 PHPP Final Decision (TN 61876).

⁴ 2011 PHPP Final Decision, p. 5.5-1

The second alternative route would be a total of 12.8 miles, also built with two segments of 230-kV lines. The first segment of the second alternative would be underground for a total of 6.75 miles, and would follow the same route as the underground gas and water lines for the project. The second segment would be constructed as an overhead line for 6.05 miles (see Project Description Figure 2).⁵

We concluded that with the imposition of Conditions of Certification **TLSN-1** through **TLSN-5**, the PHPP's potential direct, indirect, and cumulative impacts to transmission line safety and nuisance (e.g., aviation safety, radio frequency interference, audible noise, fire hazards, hazardous and/or nuisance electrical shocks, and electric and magnetic field (EMF) exposure) would be mitigated to a level of less than significant and would comply with all LORS.⁶

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines section 15162 are met.

The PEP's only proposed modification to the PHPP transmission scheme relates to the point of connection between the facility's proposed 230-kV tie-line and the area's electric power grid to which the PEP would be connected at SCE's existing Vincent Substation south of Palmdale. The proposed route modification includes an additional 1,800 feet of overhead transmission conductor that would be constructed from the facility's switchyard to a point further west on Avenue M than proposed for the PHPP (see **Project Description Figure 2** in the **PROJECT DESCRIPTION** section of this Decision). This new line segment would be located on three transmission poles.

Staff testified that, even with the additional 1,800 feet of overhead transmission conductor and three additional utility poles, there would be:

1. No new significant transmission line safety and nuisance impacts not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP on transmission line safety; and

⁵ 2011 PHPP Final Decision, p. 5.5-1.

⁶ 2011 PHPP Final Decision; pp. 5.5-1 – 5.5-6.

4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁷

Therefore, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, and cumulative transmission line and safety impacts.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP. The evidence establishes that there have been no changes to the LORS since 2011 that apply to the PEP. After reviewing the PEP's proposed transmission line route, including its design, operational plan, and routing, the evidence establishes that, with the implementation of conditions of certification, the transmission system engineering will meet all LORS, as previously identified in the 2011 Decision.⁸

We, therefore, find that, with the implementation of the conditions of certification contained in **Appendix A** to this Decision, the PEP does not cause any direct, indirect, or cumulative impacts on transmission line safety and nuisance.

CHANGES TO CONDITIONS OF CERTIFICATION

The conditions of certification as set forth in the PHPP are still applicable to the PEP and ensure that the PEP will not have significant adverse impacts on transmission line safety and nuisance and will comply with all LORS.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **TRANSMISSION LINE SAFETY AND NUISANCE** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards, and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts regarding transmission line safety and nuisance.

⁷ Ex. 500, pp. 4.11-1 – 4.11-3.

⁸ Ex. 4.11-2.

2. None of the factors that require a subsequent or supplemental environmental analysis set forth in the California Environmental Quality Act Guidelines section 15162, described in the **INTRODUCTION** section of this Decision, are present regarding transmission line safety and nuisance.
3. No new laws, ordinances, regulations, or standards since certification of the Palmdale Hybrid Power Project apply to the Palmdale Energy Project.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to transmission line safety and nuisance.

IV. PUBLIC HEALTH AND SAFETY

Site preparation, construction, and operation of the Palmdale Energy Project¹ (PEP) 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 **GREENHOUSE GAS EMISSIONS**, **AIR QUALITY**, **PUBLIC HEALTH**, **HAZARDOUS MATERIALS MANAGEMENT**, and **WORKER SAFETY/FIRE PROTECTION**.

A. GREENHOUSE GAS (GHG) EMISSIONS

INTRODUCTION

Generation of electricity using any fossil fuel, including natural gas, produces GHG emissions and criteria air pollutants that have been traditionally regulated under the federal and state Clean Air Acts. Criteria air pollutants are defined as air contaminants for which the state and/or federal government has established an ambient air quality standard to protect public health, such as nitrogen dioxide, sulfur dioxide, carbon monoxide, ozone, inhalable particulate matter, and fine particulate matter.²

GHG emissions are not criteria air pollutants with direct impacts; instead, they are discussed in the context of cumulative impacts.³ This is particularly true because electricity is produced by operation of an interconnected system of generation sources. Operation of one power plant like the PEP affects all other power plants in the interconnected system.⁴

GHG emissions from fossil-fuel-fired power plants are primarily carbon dioxide (CO₂), with smaller amounts of nitrous oxide, methane, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons. CO₂ emissions are the most common and abundant of these emissions.⁵

There is scientific consensus that climate change is occurring as a result of man-made GHG emissions, of which electricity generation from fossil fuels is a significant

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

² Ex. 500, p. 7.1-44.

³ For a discussion of the impacts of criteria air pollutants, please see the **AIR QUALITY** and **PUBLIC HEALTH** sections of this Decision. For the definition of cumulative impacts, please see the **INTRODUCTION** section of this Decision.

⁴ Ex. 500, p. 7.1-41.

⁵ Ex. 500, p. 7.1-44.

contributor, and that reducing man-made GHG emissions is essential in order to decrease or stop future global temperature increases. The California Legislature has declared that “[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.”⁶ The California Legislature and the Governor have called for California to achieve a 40 percent reduction from 1990 levels of GHGs by 2030.⁷

This topic was uncontested. Evidence on the topic of Greenhouse Gas Emissions is contained in Exhibits 1, 2, 3, 4, 6, 8, 10 - 20, 22, 24, 25, 28, 29, 31, 33, 34, 36, 37, 40, 43 - 50, 52 - 56, 500, 502, 504, 505, and 508.⁸

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision. Criteria air pollutant emissions from the PEP are described in greater detail in the **AIR QUALITY** section of this Decision.

PROJECT DESCRIPTION

The PEP power block would consist of two 214 megawatt (MW) Siemens SGT6-5000F combustion turbine generators with inlet evaporative cooling and dry low nitrogen oxide combustors, one 276 MW steam turbine generator, and two heat recovery steam generators (HRSGs) with 193.1 million British thermal units per hour (MMBtu/hr) duct burners. The PEP would include a 110 MMBtu/hr natural-gas-fired auxiliary boiler that would be used to provide steam when the main power block is off line and during startups to support the fast start design. The PEP would also have two diesel-fired engines, one for emergency generation and one for fire suppression.

The primary sources of GHG emissions would be the natural-gas-fired combustion turbines, auxiliary boiler, and emergency equipment. There would be minimal GHG emissions associated with sulfur hexafluoride emissions from the circuit breakers. The employee and delivery traffic GHG emissions from off-site activities are negligible in comparison with the gas turbine GHG emissions.⁹

For additional information regarding the design and features of the PEP project, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

⁶ Ex. 500, pp. 7.1-45 – 7.1-46.

⁷ Health & Safety Code § 38550 (Senate Bill 32, California Global Warming Solutions Act of 2006).

⁸ 3/22/17 RT 9:3-11; 12:11-12; 51:1.

⁹ Ex. 500, pp. 7.1-50 – 7.1-51.

SUMMARY OF 2011 PALMDALE HYBRID POWER PROJECT (PHPP) DECISION

In the 2011 PHPP Decision (2011 Decision),¹⁰ we analyzed the equipment to be used by the previously approved PHPP, including the solar component.

The 2011 Decision concluded that GHG emissions from construction activities resulted in a “less than significant” impact.¹¹ Therefore, the 2011 Decision did not adopt any specific conditions of certification to mitigate short-term construction impacts related to GHG, other than Condition of Certification **AQ-SC5**, which required implementation of best practices¹² to reduce any GHG emissions from construction equipment.

The 2011 Decision also reviewed the operational GHG emissions impacts, starting with the California electricity system’s need for new efficient gas-fired generation to displace and replace less efficient generation in order to integrate additional intermittent renewable generation. The 2011 Decision recognized that as new plants are built, the system will incrementally change resulting in each plant having different impacts. Additional technologies such as storage, smart grid, and distributed generation, as well as greater efficiency and demand response measures, will also change the physical needs and operation of the electrical system. Within this framework and given current conditions, the 2011 Decision concluded that the PHPP would support the integration of existing and new renewable generation and displace less efficient gas-fired generation, thereby reducing system-wide GHG emissions.

The PHPP was also subject to the state’s cap-and-trade program, a programmatic approach to addressing stationary source GHG emissions. The 2011 Decision therefore found that approval of the PHPP did not result in any adverse cumulative impacts to air quality and was consistent with state energy policy and the achievement of the state’s renewable energy goals. No specific conditions of certification for GHG emissions impacts related to operation of the power plant were adopted; however, the analysis noted that conditions of certification imposed under the **AIR QUALITY** section ensured compliance with laws, ordinances, regulations, and standards (LORS) and/or mitigated impacts to “less than significant” levels.¹³

¹⁰ 2011 PHPP Final Decision (TN 61876).

¹¹ 2011 PHPP Final Decision, pp. 6.1-19 - 6.1-22.

¹² These best practices included limiting idling times and requiring, as appropriate, equipment that meets the latest emissions standards. In addition, mandating the use of newer equipment and low-carbon fuel (e.g., bio-diesel and ethanol) were outlined. (Ex. 5114, p. 4.1-8.)

¹³ 2011 PHPP Final Decision, pp. 6.1-8 - 6.1-22.

ENVIRONMENTAL ANALYSIS

As stated above, the Energy Commission's GHG emissions analysis is a cumulative impact assessment. The PEP alone would not be sufficient to change the global climate, but would emit GHGs and, therefore, has been analyzed as a potential cumulative impact in the context of existing GHG regulatory requirements and GHG energy policies.¹⁴ Nonetheless, we reviewed the PEP's GHG emissions over its phases.

Thresholds of Significance

The California Environmental Quality Act (CEQA) Guidelines provide three factors for lead agencies to consider when assessing the significance of impacts for the analysis of GHG emissions:

1. The extent to which the project may increase or reduce GHG emissions as compared to the existing environmental setting;
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project; and
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. Such requirements must be adopted by the relevant public agency through a public review process and must reduce or mitigate the project's incremental contribution of greenhouse-gas emissions. If there is substantial evidence that the possible effects of a particular project are still cumulatively considerable notwithstanding compliance with the adopted regulations or requirements, an environmental impact report (EIR) must be prepared for the project.¹⁵

We evaluate the emissions of the PEP in the context of the electricity sector as a whole. This approach does not include a specific number threshold of significance for GHG emissions; instead, we look at how the PEP will affect the electricity sector's emissions based on its proposed role and its compliance with applicable regulations and policies.

Included in this sector-wide GHG emission analysis method is the determination of whether a project is consistent with the *Avenal* precedent decision, which requires a finding as a conclusion of law that any new natural-gas-fired power plant certified by the Energy Commission must:

¹⁴ Ex. 500, p. 7.1-54.

¹⁵ CEQA Guidelines, §15064.4.

- not increase the overall system heat rate for natural-gas plants;
- not interfere with generation from existing renewables or with the integration of new renewable generation; and
- taking into account the two preceding factors, reduce system-wide GHG emissions.¹⁶

Construction Impacts

The evidence shows that the small GHG emissions increases from construction activities would not be significant for several reasons. First, the period of construction will be short-term and the emissions intermittent during that period will not be ongoing during the life of the project. Additionally, control measures that address criteria pollutant emissions, such as limiting idling times and requiring, as appropriate, equipment that meets the latest criteria pollutant emissions standards, would further minimize GHG emissions to the extent feasible. The use of equipment that meets the latest criteria pollutant emissions standards will increase efficiency and reduce GHG emissions.¹⁷

The GHG emissions estimate for project construction including the PEP's linear facilities is presented below in **Greenhouse Gas Table 1**. The term CO₂E represents the total GHG emissions after weighing by the appropriate global warming potential. **Greenhouse Gas Table 1** also includes the estimated construction emissions for the PHPP. The PHPP emissions are 40 percent higher than the estimated emissions for the PEP.

Greenhouse Gas Table 1
PEP Estimated Construction Greenhouse Gas Emissions

Construction Element	CO₂E Equivalent (MTCO₂E)
Combined-Cycle Facility	5,640
Reclaimed Water Line	1,919
Natural Gas Pipeline	2,591
Sewer Line	303
Potable Water Line	121
T-Line Segment 1	3,014
T-Line Segment 2	944
PEP Construction Total	14,532
Licensed PHPP Construction Total	20,616

Source: Ex. 500, p. 7.1-50.

¹⁶ California Energy Commission, 2009 Final Commission Decision for the Avenal Energy Plant (CEC-800-2009-006-CMF, December 2009), p. 114.

¹⁷Ex. 500, p. 7.1-53.

Operational Impacts

Greenhouse Gas Table 2 includes the estimated GHG emissions for the PEP power block based on potential operational profiles. The project owner evaluated three potential operating scenarios to determine the maximum annual GHG emissions:

- **Scenario 1:** A total of 8,000 hours of operation per year per turbine, including up to 7,960 hours at base load with up to 35 warm starts, five cold starts, and 40 shutdowns. This scenario includes 24-hour per day operation and 836 hours of auxiliary boiler operation.
- **Scenario 2:** A total of 4,320 hours of operation per year per turbine, including up to 3,625 hours at base load with up to 360 hot starts, 360 warm starts, five cold starts, and 725 shutdowns. This scenario includes 24-hour per day operation and 4,884 hours of auxiliary boiler operation.
- **Scenario 3:** A total of 5,000 hours of operation per year per turbine, including up to 4,470 hours at base load with up to 180 hot starts, 360 warm starts, five cold starts, and 545 shutdowns. This scenario includes 24-hour per day operation and 4,136 hours of auxiliary boiler operation.¹⁸

Greenhouse Gas Table 2
GHG by Operating Scenario Summary

	Turbine, Duct Burners, Auxiliary Boiler CO ₂ -equivalent (MT CO ₂ E per year) ^a
Scenario 1	1,925,311
Scenario 2	1,079,408
Scenario 3	1,235,716

Source: Ex. 500, p. 7.1-51.

Notes: ^a One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.

Greenhouse Gas Table 3 includes the estimated GHG emissions for the PEP on an annual basis. **Greenhouse Gas Table 3** includes GHG emissions from Scenario 1 and combines them with emissions from both the emergency generator and fire pump engines. Scenario 1 is the only scenario with a capacity factor above 60 percent. All emissions are converted to maximum annual CO₂ and CO₂-equivalent emissions for the stationary sources.¹⁹

¹⁸ Ex. 500, p. 7.1-51.

¹⁹ *Id.*

Greenhouse Gas Table 3
GHG Maximum Scenario Summary^a

Emission Source	Operational GHG (MT CO ₂ E per year) ^b
Carbon Dioxide (CO ₂)	1,923,355
Methane (CH ₄)	905
Nitrous Oxide (N ₂ O)	1,079
SF ₆ ^c	9
Total Project Emissions	1,925,347
Estimated Energy Output (net)	5,686,624
Estimated Annualized CO₂ Performance (MTCO₂/MWh)	0.338
Estimated Annualized GHG as CO₂E Performance (MTCO₂E/MWh)	0.339

Source: Ex. 500, p. 7.1-52.

Notes:^a Table includes Scenario 1 only because Scenarios 2 and 3 propose a capacity factor below 60%

^b One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilogram.

^c CEC 2010b.

The PEP would emit approximately 1,925,347 metric tonnes of CO₂-equivalent per year if operated at its maximum permitted level. Based on the proposed operating scenarios, the project would be licensed to operate at a capacity factor greater than 60 percent. The Senate Bill (SB) 1368²⁰ Emissions Performance Standard applies individually to each of the two turbines of the combined-cycle that could have a capacity factor above the SB 1368 trigger level of 60 percent.²¹

Determining Operational GHG Impacts: A System Approach

Evaluation of operational impacts of the PEP requires consideration of the project's role(s) in the integrated electricity system. In summary, these effects include: reducing the operation and GHG emissions from the older, existing power plants; potentially displacing local electricity generation; the penetration of renewable resources; and accelerating generation retirements and replacements, including facilities currently using once-through cooling. Additionally, GHG emissions impacts arising from operation are mitigated through compliance with the state's cap and trade regulation, which is designed to reduce electricity sector GHG emissions over time in order to meet the Assembly Bill (AB) 32²² statewide GHG emissions reduction goals.²³

²⁰ Public Utilities Code section 8340 et seq.

²¹ Ex. 500, p. 7.1-52.

²² Health & Safety Code section 38500, et seq.

²³ Ex. 500, p. 7.1-53.

It is not possible to determine, with any accuracy, the GHG emissions that would be expected from an electricity system that includes the PHPP, or from one that includes the PEP. While the maximum amount of natural gas that can be combusted annually under the air quality and other permits for either the PHPP or the PEP provides a ceiling for the plants' CO₂-equivalent emissions, permitted levels of operation and expected operation, while related, are very different metrics.²⁴ More importantly, the ceiling is for GHG emissions *from the plant itself*, its consideration ignores the quantity of GHG emissions from the generators that are displaced.²⁵

Similarly, a comparison of the thermal efficiencies of the two projects (e.g., at full load) does not provide any information regarding their expected GHG emissions or the system-wide emissions that would result from their development. While the proposed PEP has a higher thermal efficiency than the approved PHPP at most levels of output, the differences in the efficiency and operating flexibility of the two projects mean that they would be operated differently. As such, they would displace different existing generation resources whose thermal efficiencies, and thus GHG emissions, cannot be known based only on theoretical modeling. As a result, their relative impact on system GHG emissions cannot be known with certainty.²⁶

It is very likely, however, that the PEP would lead to greater reductions in GHG emissions compared to the PHPP, as its increased flexibility (e.g., faster start-up time, ability to operate at lesser shares of full output, and to change output by more MW/minute) facilitates the integration of larger amounts of zero-carbon variable energy resources (solar and wind). This can be seen in **Greenhouse Gas Figure 1**, which depicts the estimated operating profile of the generating resources of the increasingly high-solar electricity system that California will develop over the next 15 years as the state's Renewables Portfolio Standards mandate increases to 50 percent in 2030. Much of the additional renewable energy will come from solar resources, even if there is limited development of utility-scale solar generation, as the residential and commercial sectors take advantage of falling distributed solar costs, tax incentives, and payments for energy remitted to the system at retail rates. In addition, new residential construction

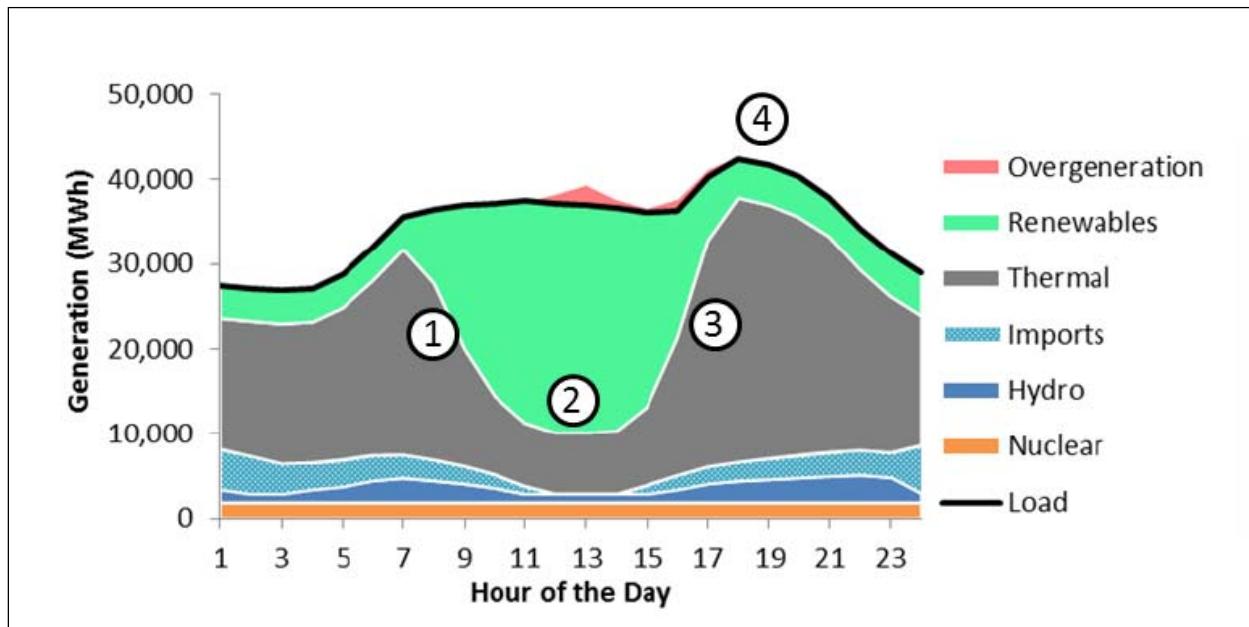
²⁴ Natural-gas-fired peaking facilities are usually permitted at roughly a 30 percent capacity factor, but are expected to operate in the range of two to five percent. Load following generation is permitted at a 30 to 50 percent capacity factor, but expected to operate in the 10 to 20 percent range. Finally, combined cycles have frequently permitted at close to 100 percent, but are expected to operate in the 40 to 70 percent range. (Ex. 500, p. 7.1-55.)

²⁵ Ex. 500, p. 7.1-54 - 7.1-55.

²⁶ Ex. 500, p. 7.1-55.

post 2020 is required, where cost-effective, to be zero-net energy, (i.e., include solar panels).²⁷

**Greenhouse Gas Figure 1
California Generation Typical for a Non-Summer Day (“Duck” Chart)²⁸**



COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Federal

The PEP, like the PHPP, would be subject to Prevention of Significant Deterioration (PSD) permitting requirements of 40 Code of Federal Regulations (CFR) parts 51 and 52 (**Air Quality** Compliance with LORS subsection), but not subject to a GHG emissions BACT analysis. The U.S. Environmental Protection Agency (EPA) currently has authority over the PSD program for the Antelope Valley Air Quality Management District (AVAQMD). The PEP submitted a PSD permitting application to the U.S. EPA including a Class I impact assessment.²⁹

The PEP would also be subject to the proposed federal power plant GHG emissions New Stationary Source Performance Standards (NSPS) (40 CFR, part 60, subpart TTTT) due to proposed operation as a base load facility. The proposed federal NSPS

²⁷ Ex. 500, p. 7.1-55.

²⁸ Ex. 500, p. 7.1-56.

²⁹ Ex. 500, p. 7.1-57.

limit for new combustion is 1,000 lbs. of CO₂/MWh. The PEP project would still have to comply with the federal mandatory GHG reporting regulation (40 CFR, part 98) for the new combustion turbines.³⁰

State

The PEP would be required to participate in California's GHG emissions cap-and-trade program, which is administered by the California Air Resources Board (ARB) and which became active in January 2012. This cap-and-trade program is part of a broad effort by the state of California to reduce GHG emissions as required by AB 32, and more recently SB 32 (Nunez, 2016) that requires GHG emissions reductions to 40 percent below 1990 levels by 2030. As currently implemented, market participants such as the owners of the PEP are required to report their GHG emissions and to obtain/purchase GHG emissions allowances (and offsets) for those reported emissions from the capped market and offsets from outside the AB 32 program.

The Petitioner has proposed that the PEP would have a 60 percent or above annual full-load capacity factor; therefore, the PEP is subject to the requirements of SB 1368 and the current Emission Performance Standard. The project's GHG emission performance has been demonstrated to be below the SB 1368 EPS limit of 1,100 lb./net MWh (see **Greenhouse Gas Table 3**) and below the proposed federal NSPS of 1,000 lbs. of CO₂/gross MWh for new combustion.³¹

Local

The AVAQMD Rule 3011 Greenhouse Gases Provisions of Federal Operating Permits (FOP) provides provisions for incorporating requirements for GHGs into FOPs. This rule is consistent with federal PSD rules as defined in 40 CFR part 52.21. This rule requires the owner or operator of a new major source or a major modification to obtain a PSD permit prior to commencing construction. The project owner has submitted an application to the U.S. EPA. The AVAQMD does not currently have any other approved GHG emissions regulations that would apply to the project. Therefore, currently there are no applicable local LORS for GHG emissions/climate change.

AVENAL PRECEDENT DECISION

As established by the Avenal decision, any assessment of the impact of a new power plant on system-wide GHG emissions must begin with the understanding that electricity generation and demand must be in balance at all times; the energy provided by any new generation resource simultaneously displaces exactly the same amount of energy from an existing resource or resources. The GHG emissions produced by any new

³⁰ Ex. 500, p. 7.1-57.

³¹ *Id.*

facility, whether it is the PEP or another facility, are thus not incremental additions to the system-wide emissions, but are offset by reduction in GHG emissions from those generation resources that are displaced. The output from new natural-gas-fired generators instead displaces that from less-efficient existing natural-gas-fired generators, whose variable costs are higher because they combust more natural gas per unit of electricity generated and, thus, produce more GHG emissions.³²

The Avenal decision has been augmented by two recent developments. The first is the adoption of CEQA guidelines for the analysis of GHG emissions impacts.³³ The second development is the enactment of the AB 32 cap-and-trade system that implements the state's approach to reducing GHG emissions from the electricity sector. The evidence indicates that the average heat rate for natural-gas units has been declining for years. The improvement is likely due to the deployment of modern combustion turbine units.³⁴

CHANGES TO CONDITIONS OF CERTIFICATION

There were no conditions of certification imposed upon the PHPP relating to GHG emissions. However, the project owner will be required to report GHG emissions and to obtain GHG emissions allowances (and offsets) for those reported emissions by purchasing allowances from the capped market and offsets from outside the AB 32 program. Similarly, the PEP would be subject to federal mandatory reporting of GHG emissions. The project owner may have to provide additional reports and GHG reductions depending on the future regulations formulated by the U.S. EPA or the ARB. Since the PEP would be subject to 40 CFR, part 60, subpart TTTT, the language of Condition of Certification **AQT-3** has been revised to include compliance with 40 CFR part 60, subpart TTTT. No other changes to the conditions of certification related to the GHGs from project operation or construction are proposed. See **Appendix A** of this Decision for a complete list of conditions of certification, including Condition of Certification **AQT-3**.³⁵

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **GREENHOUSE GAS EMISSIONS** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

³² California Energy Commission, 2009 Final Commission Decision for the Avenal Energy Plant (CEC-800-2009-006-CMF, December 2009).

³³ CEQA Guidelines, tit. 14, §15064.4.

³⁴ Ex. 500, pp. 7.1-59 – 7.1-60.

³⁵ The conditions of certification for Air Quality, as well as for all other topics of this Decision, may be found in **Appendix A**.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. Greenhouse gases include carbon dioxide, nitrous oxide, methane, sulfur hexafluoride, hydrofluorocarbons, and perfluorocarbons.
2. The greenhouse gas emissions from the Palmdale Energy Project's site preparation and construction are estimated to be 14,532 metric tons of carbon dioxide equivalent during the construction period.
3. The Palmdale Energy Project will use best practices to control its construction--related greenhouse gas emissions.
4. The greenhouse gas emission increases from mitigated construction activities will not be significant.
5. The Palmdale Energy Project would emit approximately 1,925,347 metric tonnes of carbon dioxide per year if operated at a maximum permitted level greater than 60 percent.
6. The SB 1368 Emissions Performance Standard applies individually to each of the two turbines of the combined-cycle that could have a capacity factor above the SB 1368 trigger level of 60 percent.
7. The Palmdale Energy Project's greenhouse gas emissions performance has been demonstrated to be below the SB 1368 Emissions Performance Standard limit of 1,100 lb./net MWh.
8. The greenhouse gas emissions produced by the Palmdale Energy Project are not incremental additions to system-wide emissions, but are offset by reductions in greenhouse gas emissions from those generation resources that it displaces.
9. The development and operation of the Palmdale Energy Project would not lead to the displacement of energy from zero-carbon generation such as that of renewable, hydroelectric, or nuclear facilities.
10. When it operates, the Palmdale Energy Project will displace generation from plants with higher greenhouse gas emissions.
11. The Palmdale Energy Project's operation will reduce overall greenhouse gas emissions from the electricity system.
12. The Palmdale Energy Project will result in a cumulative overall reduction in greenhouse gas emissions from California's power plants and will not worsen current conditions.

13. The Palmdale Energy Project will not result in impacts that are cumulatively considerable.
14. The Palmdale Energy Project will be required to participate in California's cap-and-trade program and will be required to purchase allowances for greenhouse-gas emissions.
15. The Palmdale Energy Project's construction-related, greenhouse-gas emissions will not cause a significant environmental impact because they are limited in duration.
16. The greenhouse gas emissions from a power plant's operation should be assessed in the context of the operation of the entire electricity system, of which the Palmdale Energy Project is an integrated part.
17. When considered on a system-wide basis, the operation of the Palmdale Energy Project will reduce greenhouse gas emissions and will, therefore, not cause a significant environmental impact.
18. The Palmdale Energy Project's operation will foster the achievement of the state's goals for the reduction of greenhouse gas emissions.
19. The Palmdale Energy Project will not be dispatched in such a way as to cause a system-wide increase in greenhouse gas emissions and, therefore, will not cause a significant environmental impact related to greenhouse gas emissions.

CONCLUSIONS OF LAW

1. The Palmdale Energy Project's operation will help California utilities meet their Renewable Portfolio Standards obligations.
2. The conditions of certification set forth in **Appendix A** of this Decision are appropriate and will ensure that the Palmdale Energy Project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety, and to ensure compliance with all applicable laws, ordinances, regulations, and standards.

B. AIR QUALITY

INTRODUCTION

The construction and operation of the proposed Palmdale Energy Project¹ (PEP) will 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 the PEP will comply with applicable state and federal air quality laws, ordinances, regulations, and standards (LORS), whether it will result in significant air quality impacts, and whether the proposed mitigation measures will reduce potential impacts to “less than significant” levels.

This topic was uncontested. Evidence on the topic of Air Quality is contained in Exhibits 1, 2, 3, 4, 6, 8, 10 - 20, 22, 24, 25, 28, 29, 31, 33, 34, 36, 37, 40, 43 - 50, 52 - 56, 500, 502, 504, 505, and 508.²

SETTING

The proposed project site is in the City of Palmdale, California, in Los Angeles County. The PEP site is in the Antelope Valley, which is part of the Mojave Desert Air Basin (MDAB). Antelope Valley is situated between the Tehachapi Mountains to the northwest and the San Gabriel Mountains to the south; it is located within the Antelope Valley Air Quality Management District (AVAQMD). Palmdale and Lancaster are the two principal cities in the Antelope Valley, with Lancaster immediately north of the site and Palmdale to the south of the site.³

The proposed site is generally flat, ranging in elevation from approximately 2,500 to 2,505 feet above sea level. The proposed site is currently undeveloped. The surrounding land includes currently undeveloped parcels, light industry and aviation related activities. Air Force Plant 42 is a government-owned, contractor-operated facility located to the south east of the proposed site. Lockheed Martin Aeronautics and Northrup Grumman both operate within or adjacent to Plant 42 near the Palmdale airport.⁴

Winters are characterized as cold while summers are very hot with little to no precipitation. January is on average the coolest month with an average temperature high of 58.5°F and an average low of 32.4°F. July is on average the warmest month with an average temperature high of 97.6°F and an average low of 65.3°F. The annual

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11, 12:11-12, 51:1.

³ Ex. 500, p. 4.1-9.

⁴ *Id.*

average rainfall is 7.61 inches with the majority of the rainfall occurring in the winter and early spring. February is on average the wettest month while June and July are the driest. On average, Palmdale records 54.7 days per year below 32°F and 106 days per year above 90°F.⁵

The area experiences consistent winds with some seasonal variation. The annual prevailing wind direction for Palmdale is southwest with an annual average wind speed of 13.2 miles per hour. Winds originate from the south to the west approximately 60 percent of the time. Winds originate from the north to east approximately 20 percent of the time. Calm periods, where winds are less than 1.3 miles per hour, account for approximately 2.5 percent of the time.⁶

The highest wind speeds occur during spring afternoons due to increased heating of the land that far exceeds the heating of the ocean surface at that time of year. The most significant large-scale phenomena affecting air quality in the project area are the transport winds from the northwest and southwest. These winds are responsible for bringing ozone and other pollutants through the mountain passes from the Los Angeles Basin (Cajon and Soledad Passes) and the San Joaquin Valley (Tehachapi Pass). The Antelope Valley is therefore recognized as downwind from both the South Coast and San Joaquin Air Basins.⁷

Criteria air pollutants are defined as those air contaminants for which the state and/or federal government has established an ambient air quality standard to protect public health. The criteria pollutants analyzed are nitrogen dioxide (NO₂), sulfur dioxide (SO₂), carbon monoxide (CO), ozone (O₃), respirable particulate matter/particulate matter less than 10 microns in diameter (PM10), and fine particulate matter/particulate matter less than 2.5 microns in diameter (PM2.5). In addition, volatile organic compound (VOC) emissions are analyzed because they are precursors to both O₃ and particulate matter. Because NO₂ and SO₂ readily react in the atmosphere to form other oxides of nitrogen and sulfur respectively, the terms nitrogen oxides (NOx) and sulfur oxides (SOx) are also used when discussing these two pollutants.⁸ Current state and federal ambient air quality standards are listed in **Air Quality Table 1**. The averaging time for the various ambient air quality standards (the duration of time the measurements are taken and averaged) ranges from one hour to one year. The standards are read as a concentration, in parts per million (ppm), parts per billion (ppb), or as a weighted mass of material per unit volume of air, in milligrams (mg or 10⁻³ g), or micrograms (µg or 10⁻⁶

⁵ Ex. 500, p. 4.1-9.

⁶ *Id.*

⁷ Ex. 500, p. 4.1-10.

⁸ Ex. 500, p. 4.1-2.

g) of pollutant in a cubic meter (m^3) of ambient air, drawn over the applicable averaging period.⁹

Air Quality Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.070 ppm (137 $\mu g/m^3$) ^a	0.070 ppm (137 $\mu g/m^3$)
	1 Hour	—	0.09 ppm (180 $\mu g/m^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/ m^3)	9 ppm (10 mg/ m^3)
	1 Hour	35 ppm (40 mg/ m^3)	20 ppm (23 mg/ m^3)
Nitrogen Dioxide (NO_2)	Annual	53 ppb (100 $\mu g/m^3$)	0.030 ppm (57 $\mu g/m^3$)
	1 Hour	100 ppb (188 $\mu g/m^3$) ^b	0.18 ppm (339 $\mu g/m^3$)
Sulfur Dioxide (SO_2)	24 Hour	—	0.04 ppm (105 $\mu g/m^3$)
	3 Hour	0.5 ppm (1300 $\mu g/m^3$)	—
	1 Hour	75 ppb (196 $\mu g/m^3$) ^c	0.25 ppm (655 $\mu g/m^3$)
Respirable Particulate Matter (PM10)	Annual	—	20 $\mu g/m^3$
	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
Fine Particulate Matter (PM2.5)	Annual	12 $\mu g/m^3$	12 $\mu g/m^3$
	24 Hour	35 $\mu g/m^3$ ^b	—
Sulfates (SO_4)	24 Hour	—	25 $\mu g/m^3$
Lead	30 Day Average	—	1.5 $\mu g/m^3$
	Rolling 3-Month Average	1.5 $\mu g/m^3$	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 $\mu g/m^3$)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 $\mu g/m^3$)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: Ex. 500, p. 4.1-11.

Note: ^a Fourth highest maximum 8 – hour concentration, averaged over 3 years.

^b 98th percentile of daily maximum value, averaged over 3 years.

^c 99th percentile of daily maximum value, averaged over 3 years.

The federal and state attainment status for specified pollutants in the AVAQMD is summarized in **Air Quality Table 2**. This area is designated as nonattainment with the federal and state ambient air quality standards for O_3 and the state PM10 standards. The area is designated as attainment or unclassified for the federal and state CO, NO_2 , SO_2 , and PM2.5, and unclassified for federal PM10. **Air Quality Table 2** summarizes the area's attainment status for various applicable current state and federal air quality standards. The transport of ozone and ozone precursors into the Antelope Valley have been recognized by the California Air Resources Board (ARB) as resulting in exceedances of both the National Ambient Air Quality Standards (NAAQS) and California Ambient Air Quality Standards (CAAQS) for ozone.¹⁰

⁹ Ex. 500, p. 4.1-10.

¹⁰ Ex. 500, p. 4.1-11.

Air Quality Table 2
AVAQMD Attainment Status

Pollutant	Averaging Time	California Status	Federal Status
Ozone (O ₃)	8 Hour	Non-attainment	Non-attainment
	1 Hour	Non-attainment	N/A
Carbon Monoxide (CO)	8 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
Nitrogen Dioxide (NO ₂)	Annual	N/A	Attainment
	1 Hour	Attainment	Unclassified
Sulfur Dioxide (SO ₂)	Annual	N/A	Attainment
	24 Hour	Attainment	Attainment
	1 Hour	Attainment	Attainment
PM10	Annual	Non-attainment	N/A
	24 Hour	Non-attainment	Unclassified
PM2.5	Annual	Attainment	Attainment
	24 Hour	N/A	Attainment

Source: Ex. 500, p. 4.1-12.

Notes: Unclassified means the area is treated as if it is in attainment.

N/A= No standard applies or not applicable.

The closest air quality monitoring site is the Lancaster station located at 43301 Division Street in Lancaster. The monitoring station is approximately 2.5 miles northwest of the proposed site and next to the Sierra Highway. The Lancaster station was established in 2001 and currently monitors CO, NO₂, O₃, PM10, and PM2.5. Data collected from this station provides a conservative estimate of background concentrations. The closest station monitoring SO₂ is located in Victorville, in the MDAB, which is approximately 45 miles to the southeast of the proposed project site. The SO₂ data from the Victorville station provides a conservative estimate of background SO₂. The Lancaster and Victorville monitoring station data are considered to be representative of the proposed site and were therefore used for background data selection. Monitoring data from these two stations was also used to establish background data for the approved Palmdale Hybrid Power Project (PHPP).¹¹

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The proposed modifications include the replacement of the General Electric 7FA turbines, replacement of the wet-cooling tower with an air-cooled condenser (ACC), elimination of the solar components, reduction of the site from 333 acres to 50 acres, and reorientation of the power block. The PEP power block would consist of two 214 megawatt (MW) Siemens SGT6-5000F combustion turbines with inlet evaporative

¹¹ Ex. 500, p. 4.1-12.

cooling and dry low NOx combustors, one 276 MW (nominal base load) Siemens steam turbine, and two heat-recovery steam generators (HRSG) with 193.1 million British thermal units per hour (MMBtu/hr) duct burners.¹²

The combined-cycle configuration includes each of the two combustion turbine generators (CTG) exhausting to a dedicated HRSG. Both of the CTG/HRSG trains will feed into a common steam turbine generator (STG). The duct burners will be used to provide heat, enabling the HRSGs to produce more steam when needed to obtain peaking output. The duct burners will be limited to 1,500 hours of operation per year. The two CTGs and HRSG duct burners will be fired exclusively with natural gas.¹³

The Siemens Flex 30 fast-start plant design will allow the CTGs to reach full load quickly. Startup periods generally have higher emission rates. Reducing the time for startup periods can result in lower total emissions for startup events.¹⁴

The PEP will employ dry cooling through an ACC to condense turbine exhaust steam inside air-cooled finned tubes. The ACC will consist of modules in parallel rows with finned tube bundles. Each module will use a fan to circulate the cooling air across a heat exchange area of the fin tubes. The cooling system will consist of the ACC and supporting equipment including a structure, steam ducting, pumps, tanks, and related piping and instrumentation.¹⁵

The PEP will include a 110 Mmbtu/hr natural-gas-fired auxiliary boiler. The auxiliary boiler will be used to provide steam when the main power block is off line and during startups to support the fast-start design. During a combined-cycle start, a seal is needed on the condenser for STG operation. The auxiliary boiler will provide steam to the STG to aid in the establishment of the condenser seal prior to CTG startup, resulting in the STG being able to accept steam from the HRSG more quickly. The auxiliary boiler will be equipped with a 9 ppm low NOx burner and flue-gas recirculation.¹⁶

The PEP proposes an emergency generator and fire pump. The emergency generator includes a 2,011 HP Tier 2 diesel engine. The emergency generator would be used for plant critical or essential auxiliary loads in the event the normal power source is interrupted. The equipment will be designed to enable the engine to be connected to the essential loads and switching devices within 10 seconds. The proposed 140 HP Tier 3 diesel fire pump engine would be used for emergency fire suppression. Both of the

¹² Ex. 500, p. 4.1-17.

¹³ *Id.*

¹⁴ *Id.*

¹⁵ Ex. 500, p. 4.1-17.

¹⁶ *Id.*

emergency engines will operate for periodic maintenance and testing and will fire exclusively on California ultra-low sulfur diesel fuel.¹⁷

Construction of the PEP is expected to last approximately 23 months (not including startup and commissioning) and will proceed in two main phases. Phase 1 site preparations will require minimal grading activities, excavation of footings and foundations, and backfilling operations. The entire phase is only expected to last one and a half months. Phase 2 includes construction of the foundations and structures as well as installation of major equipment, and is expected to last for approximately 22 months. The 50-acre site is currently undeveloped.¹⁸

For additional information regarding the project components of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION¹⁹

The PHPP, approved by the Energy Commission on August 10, 2011, was a nominal 570 MW hybrid of natural-gas-fired, combined-cycle generating equipment integrated with solar thermal generating equipment. The approved PHPP would have consisted of two natural-gas-fired CTGs rated at 154 MW each, two HRSGs, and one STG rated at 268 MW. The solar thermal equipment was designed to use arrays of parabolic collectors to heat a high-temperature heat transfer fluid that would be circulated through a dedicated steam boiler to generate steam. The combined-cycle equipment was to be integrated thermally with the solar equipment at the HRSGs and both would have used the single STG.²⁰

The Energy Commission concluded that with the implementation of the conditions of certification, the PHPP would not result in any significant direct, indirect, or cumulative impacts to air quality. The Energy Commission also concluded that with the implementation of the conditions of certification and the mitigation measures described in the evidentiary record, the PHPP would conform with all applicable LORS relating to Air Quality.²¹

ENVIRONMENTAL ANALYSIS

The evidence indicates that the proposed modifications to the project constitute a considerable change in fact and circumstance from the 2011 Decision requiring a

¹⁷ Ex. 500, p. 4.1-17.

¹⁸ *Id.*

¹⁹ 2011 PHPP Final Decision (TN 61876).

²⁰ Ex. 500, pp. 4.1-3 – 4.1-4.

²¹ Ex. 500, p. 4.1-4.

comprehensive analysis of the project and air quality impacts to supplement the 2011 Decision.²²

The Air Quality determination of compliance issued by the AVAQMD for the PHPP project is no longer valid. The PEP is considered a new project by the Antelope Valley Air Quality Management District (AVAQMD) rules and triggered a review under AVAQMD Rule 1306, Electric Generating Facilities. The AVAQMD published a Final Determination of Compliance (FDOC) on August 24, 2016, which incorporates technical clarifications, changes to permit conditions, and an emissions offset package.²³

Background ambient air quality concentrations in **Air Quality Table 3** were used as the baseline for the modeling and impacts analysis. The highest criteria pollutant concentrations from the last three years (2012-2014) of available data collected at the Lancaster air quality monitoring station (for NO₂, PM10, and PM2.5) and the Victorville station (for SO₂) are used to determine the background values. The three-year average of the 98th percentile of the daily maximum during 2012-2014 is used for federal one-hour NO₂ and 24-hour PM2.5 standards. Background concentrations in excess of the ambient air quality standards are shown in bold.²⁴

Air Quality Table 3
Background Concentrations (µg/m³)

Pollutant	Averaging Time	Recommended Background	Limiting Standard	Percent of Standard
NO ₂	State 1-hour	98	339	29%
	Federal 1-hour	82	188	43%
	Annual	17	57	30%
PM10	24-hour	173	50	347%
	Annual	24	20	122%
PM2.5	24-hour	18	35	50%
	Annual	7	12	60%
CO	1-hour	2,634	23,000	11%
	8-hour	2,176	10,000	22%
SO ₂	State 1-hour	16	655	2%
	Federal 1-hour	13	196	7%
	24 hour	8	105	7%

Source: Ex. 500, p. 4.1-16.

Note: An exceedance is not necessarily a violation of the standard, and that only persistent exceedances lead to designation of an area as nonattainment.

The background concentrations for PM10 are above the most restrictive existing ambient air quality standards, while the background concentrations for the other

²² CEQA Guidelines, § 15162, subd. (a); Ex. 500, p. 4.1-1.

²³ Ex. 500, p 4.1-1.

²⁴ Ex. 500, p. 4.1-16.

pollutants are mostly well below the most restrictive existing ambient air quality standards. The pollutant modeling analysis was limited to the pollutants listed in **Air Quality Table 3**. Therefore, background concentrations were not determined for the other criteria pollutants (ozone, lead, visibility, etc.).²⁵

Construction, commissioning, and operation of the PEP will result in emissions of criteria pollutants, including an increase in annual emissions of NOx, VOCs, SOx, and CO, and a decrease in annual emissions of PM10 and PM2.5 when compared to the approved PHPP project. The emission increases are attributed to the larger turbine duct firing, and increased startup and shutdown events. The decrease in particulate emissions is a result of the deletion of the solar component including annual maintenance, deletion of the cooling tower, and lower emissions from the turbines.

The facility would be considered a major facility by the AVAQMD since emissions would exceed the offset threshold amounts listed in AVAQMD Rule 1303, and would also be considered a federal major source as annual emissions would exceed 100 tons per year for NOx, CO, and PM10. The facility would require a federal operating permit and would need to comply with Federal Prevention Significant Deterioration (PSD) requirements.²⁶

Each section below contains a table with the expected PEP emissions and a comparison to the expected emissions from the licensed PHPP.²⁷

Construction Emissions

The construction emissions for the PEP, as compared to the PHPP, will be similar for the power block and linear components, but will no longer include emissions from the significant grading needed for the PHPP solar component.²⁸ Construction emissions also include fugitive dust and combustion emissions.²⁹ Emissions were also estimated from the construction of the reclaimed-water pipeline, natural-gas pipeline, sanitary-wastewater line, potable-water line, transmission-line segment one, and transmission-line segment two. Estimated daily construction emissions from the PEP are included in **Air Quality Table 4**.³⁰

²⁵ Ex. 500, pp. 4.1-16 – 4.1-17.

²⁶ Ex. 500, p. 4.1-18.

²⁷ *Id.*

²⁸ Ex. 500, p. 4.1-18.

²⁹ Fugitive dust results from site preparation activities travel on paved and unpaved surfaces, aggregate and soil loading and unloading operations, and wind erosion of areas disturbed during construction activities. Combustion emissions come from the exhaust of construction equipment and other mobile source activity related to construction.

³⁰ Ex. 500, p. 4.1-19.

Air Quality Table 4
Palmdale Energy Project Estimated Daily Construction Emissions (lbs/day)

Project Component	Total Emissions						
	NOx	CO	VOC	SOx	PM10	PM2.5	
		Combined Cycle					
Onsite Exhaust	49.7	34.3	8.2	0.1	2.68	2.44	
Onsite Fugitives					43.7	9.76	
Onsite Total	49.7	34.3	8.2	0.1	46.4	12.2	
Offsite	58.7	161.6	16.6	0.1	19.0	5.3	
		Offsite Related Facilities					
Reclaimed Water Line	41.7	143.3	18.2	0.1	36.9	9.1	
Natural Gas Pipeline	41.7	143.3	18.2	0.1	36.9	9.1	
Sanitary Wastewater Line	10.6	45.3	5.4	0.012	8.6	2.1	
Potable Water Line	10.6	45.3	5.4	0.012	8.6	2.1	
Transmission line Segment 1	97.8	128.4	19.3	0.2	75.0	19.3	
Transmission line Segment 2	107.5	167.9	20.8	0.2	288.3	67.6	

Source Ex. 500, p. 4.1-19.

Air Quality Table 5 compares the estimated construction emissions for the combined-cycle component of the PEP to the corresponding combined-cycle portion of the licensed PHPP. Significant emission decreases are due to the use of updated emission factors in the emission estimate calculations. The South Coast Air Quality Management District maintains a database for off-road mobile source emission factors based on equipment category and average fleet make up this database and was used to estimate the emissions in **Air Quality Table 5**. The emission factors reflect the expected assumptions of newer engines with higher minimum U.S. EPA/ARB tier levels in 2017.³¹

³¹ Ex. 500, p. 4.1-20.

Air Quality Table 5
Estimated Combined-Cycle Construction Emissions Comparison – PEP and PHPP

Project Component	Total Emissions					
	NOx	CO	VOC	SOx	PM10	PM2.5
Onsite Daily Construction (lbs/day)						
PEP Equipment	48.9	32.9	8.1	0.1	1.7	1.5
Licensed PHPP Equipment	104.9	252.7	20.1	0.1	5.1	6.8
PEP Motor Vehicles	0.9	1.4	0.1	<0.05	<0.05	<0.05
Licensed PHPP Motor Vehicles	0.9	1.4	0.1	<0.05	<0.05	<0.05
PEP Fugitive					44.6	10.6
Licensed PHPP Fugitive					50.5	9.5
Maximum Onsite Daily Construction (lbs/day)						
PEP Total	49.7	34.3	8.2	0.1	46.4	12.2
Licensed PHPP Total	105.8	254.1	20.2	0.1	63.6	18.6
Maximum Onsite Annual Construction (tons/year)						
PEP Total	5.7	4.3	1.0	<0.05	5.2	1.5
Licensed PHPP Total	12.3	32.0	2.4	<0.05	7.9	2.3

Source: Ex. 500, p. 4.1-20.

The revised starting date for construction of the PEP resulted in expected emission decreases over the licensed PHPP due to updated federal and state emission requirements that are stricter for equipment and vehicles. We find the maximum on-site daily and annual construction emissions estimates for the PEP will be lower than the PHPP.³²

The Petitioner's construction modeling analysis indicates that the maximum NO₂, PM2.5, CO, and SO₂ impacts would remain below the CAAQS and NAAQS. The NOx and VOC emissions from construction, when considering their potential secondary ozone formation added to the existing ozone "background," have the potential to contribute to existing exceedances of the ozone standard and are, therefore, potentially significant, requiring mitigation.³³

The background levels of PM10 alone are greater than the CAAQS for both the 24-hour and annual standards. The construction impacts have the potential to worsen the existing violations of the annual PM10 ambient air quality standard and are, therefore, potentially significant, requiring mitigation.³⁴

³² Ex. 500, p. 4.1-20.

³³ Ex. 500, p. 4.1-31.

³⁴ *Id.*

Construction Impacts and Mitigation

The Petitioner's proposed mitigation measures are similar to the mitigation measures of the licensed PHPP conditions of certification and are included in **Appendix A**. The parties propose the following mitigation measures and practices to reduce the exhaust emissions from the diesel heavy equipment and fugitive dust emissions during the construction of the PEP:

- The project owner will have an on-site construction mitigation manager who will be responsible for the implementation and compliance of the construction mitigation program, with documentation provided on a periodic basis;
- Ensure periodic maintenance and inspections of vehicles and equipment per the manufacturers' specifications;
- Reduce idling time through equipment and construction scheduling;
- Use California ultra-low sulfur diesel fuels (<= 15 ppmw sulfur);
- Water all unpaved roads and disturbed areas in the project construction laydown and parking area as frequently as necessary to control fugitive dust, but not less than two times per day during construction. Water may be reduced or eliminated during periods of precipitation;
- Limit vehicle speed to five miles per hour on unpaved areas within the project construction site;
- Post visible speed limit signs at construction site entrances;
- All construction equipment vehicle tires will be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways;
- Gravel ramps will be provided at the tire washing/cleaning station;
- Unpaved exits from the construction site will be graveled or treated to prevent track-out to public roadways;
- All construction vehicles will enter the construction site through the treated entrance roadways, unless an alternative route has been provided;
- Construction areas adjacent to any paved roadway will be provided with sandbags or other similar measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways;
- All paved roads within the construction site will be cleaned on a periodic basis (or less during periods of precipitation) to prevent the accumulation of dirt and debris;

- At least the first 500 feet of any public roadway exiting from the construction site will be cleaned on a periodic basis (or less during periods of precipitation) using wet sweepers or air-filtered dry vacuum sweepers, when construction activity occurs or on any day when dirt or runoff from the construction site is visible on the public roadways;
- All soil storage piles and disturbed areas that remain inactive for longer than 10 days will be covered or treated with appropriate dust suppressant compounds;
- All vehicles used to transport solid bulk material on public roadways and having the potential to cause visible emissions will be provided with a cover, or the materials will be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard (the distance between the material and the top of the vehicle bed);
- Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) will be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation; and
- Disturbed areas, which are presently vegetated, will be re-vegetated as soon as practical.³⁵

In addition to the above mitigation, we add to Conditions of Certification **AQ-SC1** and **AQ-SC2** language specifying that the Air Quality Construction Mitigation Manager (AQCMM), AQCMM Delegates, and the Air Quality Construction Mitigation Plan (AQCMP), must all be approved by the Energy Commission Compliance Project Manager (CPM) prior to the start of ground disturbance. Condition of Certification **AQ-SC2** clarifies that monthly compliance reports will be required during construction and commissioning within 30 days following the end of each calendar month.³⁶

Condition of Certification **AQ-SC3A** requires the main access road through the facility to the main services complex to be paved prior to initiating construction and the delivery areas to be paved or treated with stabilizers prior to accepting deliveries. Condition of Certification **AQ-SC3B** requires soil stabilizers for unpaved construction roads and operation and maintenance site roads. In addition, Condition of Certification **AQ-SC3B** requires watering all other disturbed areas of the project as frequently as necessary to comply with the dust mitigation objectives. We delete the requirement to pave the main access road and to use the soil stabilizer, but maintain the watering requirement. These changes are reasonable because the construction area has significantly decreased in acreage and there is no longer the construction of the solar array; therefore, the number

³⁵ Ex. 500, pp. 4.1-32 – 4.1-33.

³⁶ Ex. 500, p. 4.1-34.

of vehicles on the site is expected to be fewer. The evidence shows that paving or using stabilizers on the unpaved roadways would not significantly impact the fugitive dust emissions.³⁷

The record supports further changes to Condition of Certification **AQ-SC3**. For Condition of Certification **AQ-SC3I**, an increase to the minimum freeboard height from at least one foot to two feet is required to be consistent with other project recommendations.

Condition of Certification **AQ-SC3O** has been modified to require that disturbed areas be re-vegetated as soon as practical.³⁸

Condition of Certification **AQ-SC5's** off-road engine mitigation requirements will update the base engine requirement from U.S. EPA/ARB non-road diesel engine Tier 3 to Tier 4 or 4i, with steps the project owner would take if a Tier 4 or 4i engine is not available. Also, the record shows that the use of oxidizing soot filters is a viable emissions control technology for all heavy diesel-powered construction equipment that does not use an ARB-certified, low-emission diesel engine. This is a standard requirement for all current projects.³⁹

Condition of Certification **AQ-SC6** restricts certain activities to limit ozone formation during peak ozone formation hours. However, the evidence indicates that limiting the construction hours would not result in a significant reduction in ozone precursor emissions since the majority of the emissions for VOC and NOx are attributed to off-site activities such as the off-site linear construction, vehicle emissions, and hauling vehicles. Therefore, these time period limitations in Condition of Certification **AQ-SC6** are deleted.

Initial Commissioning Emissions

New electrical generation facilities must go through initial commissioning phases before becoming commercially available to generate electricity. The commissioning period begins when the turbines are prepared for first fire and ends upon successful completion of initial performance testing. Emissions of NOx, CO, and VOC during the commissioning period are typically higher than normal operations because the combustors may not be optimally tuned and the emission control systems may be only partially operational or not operational at all. The commissioning period is needed to ensure the facility's operation is fine-tuned to minimize emissions during normal operations.⁴⁰

³⁷ Ex. 500, p. 4.1-34.

³⁸ *Id.*

³⁹ *Id.*

⁴⁰ Ex. 500, p. 4.1-20.

Commissioning activities for the proposed PEP are expected to occur over approximately 1,278 operating hours total for both turbines. Commissioning activities per unit include 11 hours of first fire and synchronization checks (first fire), 73 hours of turbine final emission and combustion tuning, 130 hours of selective catalytic reduction (SCR) commissioning, and 425 hours of tuning and testing.⁴¹

The worst case scenario for hourly and daily emissions calculations assumes one turbine is undergoing first fire, while the other turbine undergoes emission and combustion tuning. It was assumed the turbines would not undergo the same stage of commissioning until the final combined tuning and testing. Simultaneous operation of the boiler would not occur until the final phase of commissioning. It was also assumed that they occur prior to installation of oxidation and SCR catalysts. The emission rates for NOx, CO, and VOCs during commissioning activities are included in **Air Quality Table 6** along with the corresponding emissions from each commissioning activity. During commissioning, SO₂, PM10, and PM2.5 emissions are expected to be no greater than full load operations.⁴²

Air Quality Table 6
PEP Maximum Initial Gas Turbine Commissioning Emissions

Commissioning Event	Maximum Hourly Emissions (lbs/hr)		
	NOx	CO	VOC
First Fire	122	4500	516
Emission and Combustion Tuning	132	796	90
SCR Commissioning	54	194	22
CC Tuning and Testing	29	123	16
	Total Commissioning Emissions (lbs)		
Emissions from Both Turbines	60,646	370,206	43,812

Source: Ex. 500, p. 4.1-21.

Air Quality Table 7 compares the total annual estimated commissioning emissions for the combined-cycle component of the PEP (Siemens SGT6-5000F turbines) to the licensed PHPP (General Electric 7FA turbines). The different turbine manufacturers, designs, and characteristics result in different plant emission estimates. The estimated NOx emissions for the PEP are lower than the licensed PHPP and the CO and VOC commissioning emissions total estimates are higher.⁴³

⁴¹ Ex. 500, p. 4.1-20.

⁴² Ex. 500, pp. 4.1-20 – 4.1-21.

⁴³ Emission estimates calculated during commissioning periods are based on estimates from each of the turbine vendors.

Air Quality Table 7
Maximum Initial Gas Turbine Commissioning Emissions

	Maximum Hourly Emissions (tons)		
	NOx	CO	VOC
PEP Total	30	135	22
Licensed PHPP Total	32	118	11

Source: Ex. 500, p. 4.1-21.

Initial Commissioning Impacts and Mitigation

Plant commissioning impacts would occur over a short-term period during the first year of plant operation. The modeling analysis in evidence indicates that the project's maximum initial commissioning emission impacts are below the most stringent ambient air quality standards for NO₂ and CO.⁴⁴

The project owner proposed increasing the NOx emission limit for commissioning from 250 pounds per hour to 254 pounds per hour to reflect the assumptions in the updated commissioning modeling analysis. The parties agreed to the proposed update to former Condition of Certification **AQ-SC20**, which has been renumbered as Condition of Certification **AQ-SC10**.⁴⁵

Operation Emissions

The project owner analyzed three different operating profiles when quantifying emission estimates for the proposed operation of the PEP. The operating profiles vary in the amount of annual "steady state" gas turbine operational hours, startup and shutdown events, and auxiliary boiler operations. Emissions rates for NOx, CO, and VOC are typically higher during startup/shutdown events. Emissions of SO₂ and particulate matter correlate to fuel consumption; therefore, their maximum emission rates are based on operational profiles with maximum fuel consumption. The operation of the turbines impacts the way the auxiliary boiler would operate. The auxiliary boiler would keep the steam turbine in a warm state to achieve faster start times. Differences in the turbine operation result in corresponding differences in the proposed auxiliary boiler operation.⁴⁶

The hourly, daily, and annual emissions are based on maximum case assumptions for each pollutant. Daily operational assumptions used to calculate NOx, CO, and VOC emissions include 24 hours of operation with at least one cold or warm/hot start and one shutdown. Daily particulate matter and SO₂ emission calculations assume 24 hours of

⁴⁴ Ex. 500, pp. 4.1-40 – 4.1-41.

⁴⁵ Ex. 500, p. 4.1-41.

⁴⁶ Ex. 500, p. 4.1-21.

continuous operation. Annual emission calculations are dependent on the specific pollutant worst case dispatch scenarios discussed below.

- **Scenario 1:** Highest annual emissions of NOx, SO₂, PM10/PM2.5, and CO_{2e} (carbon dioxide equivalents). A total of 8,000 hours of operation per year per turbine, including up to 7,960 hours at base load with up to 35 warm starts, five cold starts, and 40 shutdowns. This scenario includes 24 hours per day of turbine operation and 836 hours of auxiliary boiler operation.
- **Scenario 2:** Highest annual emissions of CO and VOC. A total of 4,320 hours of operation per year per turbine, including up to 3,625 hours at base load with up to 360 hot starts, 360 warm starts, five cold starts, and 725 shutdowns. This scenario includes 24 hours per day of turbine operation and 4,884 hours of auxiliary boiler operation.
- **Scenario 3:** A total of 5,000 hours of operation per year per turbine, including up to 4,470 hours at base load with up to 180 hot starts, 360 warm starts, five cold starts, and 545 shutdowns. This scenario includes 24 hours per day of turbine operation and 4,136 hours of auxiliary boiler operation.⁴⁷

All three emission scenarios include 1,500 hours per year per turbine, and up to 24 hours per day of duct burner operation, 50 hours of fire pump testing, and 26 hours of emergency generator testing. **Air Quality Table 8** summarizes the three operational scenarios evaluated.

AIR QUALITY Table 10
PEP Operating Scenario Summary (per Turbine)

	Scenario 1	Scenario 2	Scenario 3
Base Load Operation (hr)	7,960	3,625	4,470
Hot Start	---	360	180
Warm Start	35	360	360
Cold Start	5	5	5
Shutdowns	40	725	545
Total Operation Hours	8,000	4,320	5,000
Auxiliary Boiler (hr)	836	4,884	4,136

⁴⁷ Ex. 500, p. 4.1-22.

Duct Burning (hr)	1,500	1,500	1,500
Fire Pump Maintenance (hr)	50	50	50
Engine Maintenance (hr)	26	26	26

Source: Ex. 500, p. 4.1-22.

The emission scenarios were created as representative of maximum emission scenarios. The project owner is proposing to condition the project based on emissions and not restrict the project to any specific operations under the emissions cap. Hourly fuel use monitoring and source test requirements would establish a tracking method to ensure compliance with the established emission limits on a continuous basis. This is a reasonable approach that allows the plant operational and dispatch flexibility to respond to changing power market conditions without having to amend their license.⁴⁸

To control emissions, the PEP would exclusively use pipeline-quality natural gas, dry low NO_x combustors, and SCR to control emissions from the power block. The exclusive use of pipeline-quality natural gas would limit the formation of VOC, PM10, and SO₂ emissions. The SCR system would use aqueous ammonia to reduce NO_x emissions to no greater than 2.0 parts per million by volume, dry (ppmvd) adjusted to 15 percent oxygen. Ammonia slip would be limited to five ppmvd at 15 percent oxygen on a dry basis. Staged combustion of a pre-mixed fuel/air charge and an oxidizing catalyst would reduce CO and VOC emissions. CO emission concentrations would be limited to 2.0 ppmvd adjusted to 15 percent oxygen. VOC emission concentrations would be limited to 2.0 ppmvd with duct burning and 1.0 ppmvd without duct burning, both adjusted to 15 percent oxygen.⁴⁹

A continuous emission monitoring system (CEMS) would also be installed to monitor flue-gas flow rate, NO_x, and CO concentration levels, and percentage of oxygen in the flue gas to assure adherence with the proposed emission limits for the CTG. The CEMS would generate reports of emissions data in accordance with permit requirements and send alarm signals to the control room in the plant when the level of emissions approaches or exceeds pre-selected limits.⁵⁰

The auxiliary boiler would be equipped with an ultra-low NO_x burner, flue gas recirculation, and would exclusively use pipeline-quality natural gas for emission control to 9.0 ppmvd NO_x corrected to three percent oxygen and averaged over an hour at all times, including transient loads such as startup and shutdown events. The exclusive use of pipeline-quality natural gas along with good combustion practices would limit CO

⁴⁸ Ex. 500, pp. 4.1-22 - 4.1-23.

⁴⁹ Ex. 500, p. 4.1-23.

⁵⁰ *Id.*

emissions to 50 ppmvd corrected to three percent oxygen, VOC emissions to 0.66 pounds per hour, and PM10/2.5 emissions to 0.77 pounds per hour.⁵¹

The project owner updated the short-term SO₂ emissions from the turbine to reflect 0.75 grains per 100 standard cubic feet of natural gas. Due to the limited sulfur content in natural gas, the adjustment of short term SOx emission rates is not expected to result in significant emissions in SOx that would contribute to a violation of any SO₂ AAQS. In addition, the short-term adjustments did not result in any change to mitigation since the proposed mitigation for SO₂ has been quantified on an annual basis.⁵²

Emissions from the PEP emergency engines will be controlled through the purchase of engines certified to meet U.S. EPA/ARB Tier requirements, the use of California ultra-low sulfur (15 ppm sulfur) diesel fuel and through operation restrictions. The proposed emergency fire pump engine will be required to be certified to meet Tier 3 requirements, would be restricted to the use of ARB certified diesel or equivalent, and would be limited to 50 hours of maintenance and testing operation per year and no more than one hour of maintenance and testing operation per day. Both emergency engines would be limited to 200 total hours of operation each per year including emergency operation. The emission limits achieved through the use of the various emission controls will be required in the conditions of certification and are used to demonstrate compliance with best available control technology (BACT) requirements for the project.⁵³

Air Quality Table 9 compares the total estimated operational emissions for the proposed PEP with the estimated operational emissions from the licensed PHPP.

Air Quality Table 9
Estimated Operational Emissions Comparison

Project Component	Total Emissions				
	NOx	CO	VOC	SOx ^a	PM10/2.5
Maximum Hourly Operations (lbs/hr)					
PEP Total	116	843	64	11	25
Licensed PHPP Total	106	453	35	4	50
Maximum Daily Operations (lbs/day)					
PEP Total	1,141	2,179	472	272	568
Licensed PHPP Total	1,359	4,853	577	64	931
Maximum Annual Operation (tons/year)					
PEP Total	139	351	52	11	81
Licensed PHPP Total	115	255	40	9	127

Source: Ex. 500, p. 4.1-25.

⁵¹ Ex. 500, p. 4.1-23.

⁵² Ex. 500, p. 4.1-24.

⁵³ *Id.*

^a SOx emission increase is due to a change in short-term calculation and does not indicate an increase in actual SOx emissions.

Operations Impacts and Mitigation

Air Quality Table 10 summarizes the maximum PEP modeled concentrations for each pollutant and averaging period. The table includes the maximum impacts for normal operating conditions and startup and shutdown events. NOx and CO emissions from the combustion turbine are usually higher during startup and shutdown events than during steady state operation as the combustion turbine emissions are higher during the short periods of unsteady state operation for startup and shutdown and the SCR and oxidation catalyst control systems are not functioning at their peak efficiency immediately upon startup or during shutdown. The Petitioner modeled the maximum emissions from the simultaneous startup/shutdown of the combustion turbines. Operation of the emergency engines was not included in the modeled startup and shutdown of the combustion turbine scenario. Although higher emissions from the combustion turbines are expected during startup and shutdown events, restricting routine operation of the engines during these periods results in lower overall impacts from startup and shutdown periods. This is due more to higher modeled impacts from the diesel engines from routine testing than the combustion turbines from startup and shutdown events or normal operation. The predicted maximum short-term NOx and CO concentrations are summarized in **Air Quality Table 10**, which also compares these modeled concentrations to the applicable CAAQS and NAAQS.⁵⁴

Air Quality Table 10
Proposed PEP Operating Impacts

Pollutant	Averaging Period	Project Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$) ^a	Total Impact ($\mu\text{g}/\text{m}^3$)	Limiting Standard ($\mu\text{g}/\text{m}^3$)	Type of Standard	Percent of Standard
Normal Operating Conditions							
NO ₂ ^b	1 hour	204.7	98	303	339	CAAQS	89%
	1 hour NAAQS	13.49	82	95	188	NAAQS	51%
	Annual	0.981	17	18	57	CAAQS	32%
PM10	24 hour	7.22 (6.34) ^c	173	180 (179)	50	CAAQS	360%
	Annual	0.75	24	25	20	CAAQS	124%
PM2.5	24 hour	4.74 (4.15) ^c	18	23 (22)	35	NAAQS	65%
	Annual	0.75	7	8	12	CAAQS	65%

⁵⁴ Ex. 500, pp. 4.1-37 – 4.1-38.

CO	1 hour	123.8	2,634	2,758	23,000	CAAQS	12%
	8 hour	29.48	2,176	2,205	10,000	CAAQS	22%
SO ₂	1 hour	1.51	16	18	655	CAAQS	3%
	1 hour NAAQS	1.34	13	14	196	NAAQS	7%
	24 hour	0.801	8	9	105	CAAQS	8%
Startup Shutdown Periods							
NO ₂	1 hour	58.29	98	156	339	CAAQS	46%
	1 hour NAAQS ^c	49.1	82	131	188	NAAQS	70%
CO	1 hour	574.5	2,634	3,209	23,000	CAAQS	13%
	8 hour	88.58	2,176	2,265	10,000	CAAQS	23%

Source: Ex. 500, p. 4.1-38.

^a Background values are adjusted as presented in **Air Quality Table 5**.

^b NO₂ determined with U.S. EPA Ambient Ratio Method (ARM) based on NO₂/NOx ratio of 0.80 and 0.75 for 1-hour and annual averaging times, respectively.

^c PM10/2.5 24-hour worst case impacts are for Case 27. Impacts in parentheses are Case 2 - worst case 24-hour operations at 75 and 100 percent loads.

The modeling results included in **Air Quality Table 10** indicate that the PEP operational impacts will not exceed the AAQS for NO₂, PM2.5, CO, or SO₂. Particulate matter emissions from routine operation could cause a significant impact because they would contribute to existing violations of PM10 ambient air-quality standards. As seen in the table, background concentrations of PM10 alone exceed the CAAQS. In addition, SOx is identified as a particulate matter precursor. The operational emissions of SOx could contribute to secondary formation of particulate matter, which would contribute to the existing exceedances of the particulate matter standards. Therefore, the secondary impacts of SOx emission would be considered significant. Significant secondary impacts could also occur for ozone because operational emissions of ozone precursors, NOx, and VOC, could contribute to existing violations of these standards. The direct impacts of NO₂, CO, PM2.5, and SO₂ would not be significant because routine operation of the PEP would neither cause nor contribute to a violation of these standards. When considering the potential secondary formation of particulate matter and ozone, mitigation for emissions of PM10, SOx, NOx, and VOC would be appropriate for reducing project impacts.⁵⁵

All maximum operational impacts from the PEP modeling were located in the immediate vicinity of the proposed project, either on the facility fence line or the downwash receptor grid. There are currently no receptors in the areas of maximum impacts. Thus, the modeling results indicate that the PEP's maximum emission impacts would not cause any new significant ambient impacts associated with maximum short-term NO₂ and CO concentrations that could occur near the project site.⁵⁶

⁵⁵ Ex. 500, p. 4.1-38.

⁵⁶ Ex. 500, p. 4.1-39.

The record also contains an analysis of fumigation impacts, visibility impacts, and impacts on soils, vegetation, and sensitive species. The record establishes that these impacts would be insignificant.⁵⁷

Operations Mitigation

The Petitioner is proposing to mitigate the proposed project's NOx, VOC, SOx, and PM10 emissions through the use of Best Available Control Technology (BACT) and Emission Reduction Credits (ERCs). BACT includes limiting the ammonia slip emissions to five ppm. The PEP will use emission control technology and operating practices to meet the proposed BACT emission limits for the Siemens SGT6-5000F turbines, auxiliary boilers, and emergency engines. The Petitioner is proposing the use of dry low NOx combustors and SCR to control NOx emissions from combustion turbines. An oxidation catalyst is proposed to reduce emissions of CO and VOCs from the combustion turbines and natural gas is proposed to meet SOx and PM10/2.5 BACT limits.⁵⁸

The Petitioner is proposing an ultra-low NOx burner, flue-gas recirculation and good combustion practices to meet the proposed NOx BACT emission limit for the auxiliary boiler. The use of natural gas and good combustion practices are proposed to meet BACT emission limits for CO, VOCs, and PM10/2.5. The use of natural gas is also proposed to meet the proposed BACT limit for SOx. The proposed BACT limits for the auxiliary boiler are detailed in the record. The Petitioner is proposing to meet all emission standards and requirements outlined in the ARB Airborne Toxic Control Measure (ATCM) and New Source Performance Standards (NSPS) subpart IIII to meet BACT for the emergency engines.⁵⁹

Emission Offsets

The Petitioner proposes mitigation in the form of offsets. AVAQMD Regulation XIII New Source Review requires offsets for non-attainment pollutants and their precursors for new major sources proposing emissions over specified thresholds. The AVAQMD is in attainment for CO and it is not considered a precursor pollutant for ozone or PM10 and, therefore, mitigation would not be required for CO. However, the AVAQMD is currently considered non-attainment for ozone and state PM10 standards.⁶⁰ Although SOx is considered a precursor for PM10, AVAQMD would not require offsets for SOx emissions because the total proposed PEP Potential to Emit is below the 25-ton per year threshold. However, for purposes of CEQA, the Energy Commission requires

⁵⁷ Ex. 500, pp. 4.1-39 – 4.1-43.

⁵⁸ Ex. 500, p. 4.1-43.

⁵⁹ Ex. 500, pp. 4.1-43 – 4.1-44.

⁶⁰ Ex. 500, p. 4.1-44.

facility emissions with potentially significant impacts to be mitigated, e.g., on at least a 1.0 to 1.0 offset ratio basis, therefore, SOx will be mitigated as a precursor to PM10/2.5.

Ozone precursor pollutant offsets (NOx and VOCs) are of limited availability in the AVAQMD. Therefore the Petitioner is proposing to procure ERCs from the Mojave Desert Air Quality Management District (MDAQMD) within the MDAB and from the SJVAPCD to the north of the AVAQMD. AVAQMD Rule 1305, explicitly allows for the use of inter-district and inter-basin mitigation with approval of the AVAQMD Air Pollution Control Officer (APCO). Inter-district trades entail the use of ERCs from other air districts within the MDAB. Inter-basin trade would involve the use of ERCs from other air districts outside the MDAB. The PEP would be a Major Facility located in a federal non-attainment area that would require the APCO's determination to be made in consultation with ARB and the U.S. EPA on a case-by-case basis.

The Petitioner proposed several mitigation strategies including:

- Acquisition of existing ERCs from the AVAQMD emission bank;
- Acquisition of existing ERCs from other district banks within the MDAB;
- Acquisition of existing ERCs from other district banks outside the MDAB;
- Generation of PM10 ERCs from road paving;
- Inter-pollutant offsets (i.e., NOx for VOC and VOC for NOx);
- Acquisition of existing NOx ERCs from the MDAQMD within the MDAB;
- Acquisition of existing VOC ERCs from the southern SJVAPCD outside the MDAB; and
- Generation of PM10 ERCs from road paving to offset PM10 and SOx.⁶¹

AVAQMD Rule 1305 Emission Offsets establishes offset ratios for pollutants depending on the attainment status of the facility location. The PEP would be located in a federal non-attainment area for ozone, therefore triggering an offset ratio of 1.3 to 1.0 for VOC and NOx. The PM10 offset ratio requirement is 1.0 to 1.0 per Rule AVAQMD Rule 1305. The Petitioner agreed to a distance ratio of 1.5 to 1 for all ERC transfers from the SJVAPCD. This 1.5 to 1 ratio would be applied to the maximum potential to emit in lieu of the 1.3 to 1.0 AVAQMD offset ratio. The 1.5 to 1 ratio corresponds to the distance ratio used by the SJVAPCD to determine offset requirements to offset the project prior to the start of construction per AVAQMD stated requirements. **Air Quality Table 11**

⁶¹ Ex. 500, p. 45.

includes the project owner's identified ERC sources proposed to meet the offset requirements.⁶²

Air Quality Table 11
Identified ERC Sources of Mitigation

Air District	Air Basin	Current Owner	ERC Certificate	NOx (tons/year)	VOC (tons/year)	PM10 (tons/year)
MDAQMD	MDAB	NRG – California South	102	240		
MDAQMD	MDAB	CalPortland Cement Co.	103	854		
SJVAPCD	SJAB	Vector Environmental	S-4039-1		124	
SJVAPCD	SJAB	Crimson Resource Management	S-3387-1		27 ^a	
SJVAPCD	SJAB	Calpine	S-3261-1		10	
SJVAPCD	SJAB	Heck Cellars	S-3442		20	
AVAQMD	MDAB	NA (Road Paving)	TBD			>92.40
Total				1,094	182	>92.40

Source: Ex. 500, p. 46.

^aThis value reflects a reasonably available control technology (RACT) adjustment.

Road Paving

The Petitioner is proposing to pave roads in the vicinity of the PEP site to generate PM10 ERCs to mitigate project PM10 and SOx emissions. MDAQMD Rule 1406 (Generation of Emission Reduction Credits for Paving Unpaved Public Roads) establishes procedures for voluntary paving of roads to obtain PM10 ERCs. The rule intends for the PM10 credits to be enforceable, permanent, quantifiable, real, and surplus. The Petitioner provided a Paving Emissions Reduction Credits Protocol (Exhibit 36) which is included as **Appendix E**. The protocol outlines the methods for data collection and analysis needed to perform the calculations.⁶³

Ten existing unpaved road segments have been identified as potential candidates for paving. **Air Quality Table 12** lists the identified road segments, corresponding intersections, jurisdiction, street type, segment length, "right of way" requirements in feet (ft.), and the segment footprint. The "right of way" (ROW req.) refers to all areas of use including public and vehicular travel. It can include the paved street, sidewalk, curb, gutter median, etc.⁶⁴

⁶² Ex. 500, pp. 4.1-45 – 4.1-46.

⁶³ Ex. 500, pp. 4.1-46 – 4.1-47.

⁶⁴ Ex. 500, p. 4.1-47.

Air Quality Table 12
Initial Identified Road Segments

Street Segment	From – To	Jurisdiction	Street Type ^a	Segment Length (mile)	ROW Req. (ft)	Segment Footprint (acre)
Ave. B	90 th - 30 th St W	L.A. County	CR	~ 6.0	40	29.1
Ave. S-2	96th - 106th St E	L.A. County	CR	~ 1.0	40	4.85
110 th Street E	Ave L – Ave M	City of Palmdale	SA	~ 1.0	92	11.15
40th Street W	Ave N – Ave N-8	L.A. County	CR	~ 0.5	40	1.94
Ave Q	90 th - 110 th St E	City of Palmdale	SA	~ 2.0	92	22.3
Ave. S-6	96th - 106th St E	L.A. County	CR	~ 1.0	40	4.85
Ave. T-10	87th – 96th St E	L.A. County	CR	~ 1.0	40	4.85
Ave. N-8	Bolz Ranch Rd – 30 th St W	City of Palmdale	LI	~ 1.5	60	10.91
Ave. G	90 th – 120 th St E	L.A. County	CR	~ 3.0	40	9.70
Carson Mesa	El Sastre – Vincent View Rd	L.A. County	CR	~ 1.85	40	8.24

Source: Ex. 500, pp. 4.1-47.

^a CR = County Road, SA = Secondary Arterial, LI = Local Interior

From the 10 roads listed in **Air Quality Table 12**, four were selected for potential paving activities. These four roadway segments are identified in bold font. If additional paving activities are needed to generate more ERCs, then additional roads from **Air Quality Table 12** would be selected.⁶⁵

A final application package would need to be submitted to the AVAQMD to bank the emission reductions so they could be used as offsets. The Petitioner is proposing to submit an application package including all required information in the MDAQMD Rule 1406 (B)(1)(b).⁶⁶ Construction may not begin until the CPM has approved all ERCs in consultation with the District. The road paving must be completed according to the revised Paving Emissions Reduction Credits Data Collection Protocol included as **Appendix E** (see Condition of Certification **AQ-SC9**).

PM2.5 and Precursors

Since PM2.5 is an attainment pollutant for both the state and federal standards, PM2.5 offsets are not required for the PEP under AVAQMD Rule 1303, and AVAQMD did not require offsets for PM2.5 in their FDOC.⁶⁷

Emission Controls

⁶⁵ Ex. 500, p. 4.1-47.

⁶⁶ Ex. 500, pp. 4.1-47 – 4.1-49.

⁶⁷ Ex. 500, p. 4.1-49.

Condition of Certification **AQT-4** establishes the BACT emission requirements for the proposed power block emission sources. The U.S. EPA noted that BACT/LAER (lowest achievable emission rate) is required at all times for the PEP emissions. Condition of Certification **AQT-4** language from the FDOC addresses the U.S. EPA's comments and includes the proposed language changes to Condition of Certification **AQT-4**.⁶⁸

CUMULATIVE IMPACTS

Cumulative impacts are defined as “two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts.” “A cumulative impact consists of an impact that is created as a result of a combination of the project evaluated in the EIR together with other projects causing related impacts.” Such impacts may be relatively minor and incremental, yet still be significant because of the existing environmental background, particularly when one considers other closely related past, present, and reasonably foreseeable future projects.⁶⁹

This analysis is primarily concerned with criteria air pollutants. Such pollutants have impacts that are usually (though not always) cumulative by nature. Rarely will a modern power plant project cause a violation of a federal or state criteria pollutant standard by itself. However, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources, or foreseeable future projects. Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multi-faceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air offsets and the use of best available control technology for new sources of emissions and restrictions of emissions from existing sources of air pollution.⁷⁰

The record contains a cumulative impacts analysis including a summary of projections for criteria pollutants by the air district and the air district’s programmatic efforts to abate such pollution, an analysis of the project’s *localized cumulative impacts*, the project’s direct operating emissions combined with other local major emission sources, and a discussion of greenhouse gas emissions and global climate change impacts (see the **GREENHOUSE GAS** section of this Decision).⁷¹

The project contributions to localized cumulative impacts can be assessed through air dispersion modeling. The proposed PEP and projects that are not yet in operation and are reasonably foreseeable could cause additional impacts. Reasonably foreseeable projects include projects that have received construction permits but are not yet

⁶⁸ Ex. 500, p. 4.1-51.

⁶⁹ CEQA Guidelines §§ 15355; 15130(a)(1).

⁷⁰ Ex. 500, p. 4.1-57.

⁷¹ Ex. 500, pp. 4.1-57 – 4.1-60.

operational and those that are in the permitting process or can be reasonably expected to be in the permitting process in the near future.⁷²

The Petitioner provided a cumulative modeling analysis which included emission sources from the following three categories:

- Projects that have been in operation for a sufficient time period, and whose emissions are included in the overall background air quality data;
- Projects that recently began operations and whose emissions may not be reflected in the ambient monitoring background data; and
- Projects for which air pollution permits to construct have not been issued, but are reasonably foreseeable.⁷³

The AVAQMD provided an initial list of cumulative sources with emissions greater than five tons per year for SO_x, CO, PM10, PM 2.5, and NO_x. The list was supplemented with emissions sources from Lockheed Martin Aeronautics and Northrup Grumman, both within or adjacent to Air Force Plant 42. The only source with emissions exceeding the five-ton per year threshold was a 550 HP Tier 3 diesel drilling engine owned by the Rottman Drilling Company. The record describes the modeling methods used.⁷⁴

Air Quality Table 13 includes the cumulative modeling results. The results are added to the background monitoring values and compared to the CAAQS and NAAQS. All averaging periods complied with both the CAAQS and NAAQs with the exception of PM10). The PM10 backgrounds levels already exceed the CAAQS.

⁷² Ex. 500, p. 4.1-60.

⁷³ Ex. 500, p. 4.1-61.

⁷⁴ *Id.*

Air Quality Table 13
Proposed PEP Cumulative Impacts, ($\mu\text{g}/\text{m}^3$)^a

Pollutant	Averaging Period	Project Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	Limiting Standard ($\mu\text{g}/\text{m}^3$)	Type of Standard	Percent of Standard
NO ₂	1 hour	208.7	98	307	339	CAAQS	90%
	1 hour NAAQS ^c	NA	NA	151	188	NAAQS	80%
	Annual	1.88	17	19	57	CAAQS	33%
PM10	24 hour	13.25	173	186	50	CAAQS	373%
	Annual	0.932	24	25	20	CAAQS	125%
PM2.5	24 hour	4.76	18	23	35	NAAQS	65%
	Annual	0.932	7	8	12	CAAQS	66%
CO	1 hour	1309.9	2,634	3,944	23,000	CAAQS	17%
	8 hour	502.3	2,176	2,678	10,000	CAAQS	27%
SO ₂	1 hour	5.85	16	22	655	CAAQS	3%
	1 hour NAAQS	1.87	13	15	196	NAAQS	8%
	24 hour	0.801	8	9	105	CAAQS	8%

Source: Ex. 500, p. 4.1-62.

Air Quality Table 13 indicates that NO₂, PM2.5, CO, and SO₂ impacts would remain below the AAQS. Particulate matter emissions from the PEP would be cumulatively significant because they would contribute to existing violations of the PM10 ambient air quality standards. The increase in the annual PM10 concentrations increment however is very small. The high background concentrations are already over the CAAQS standards. The project owner would be required to mitigate impacts through the use of BACT and emissions offsets. Therefore, we consider the cumulative operating impacts after mitigation to be less than significant.⁷⁵

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The AVAQMD is the local agency responsible for stationary sources within the Antelope Valley. **Air Quality Table 14** includes a summary of the LORS applicable to the PEP. This table includes updates to the federal, state, and local LORS since the PHPP plant was licensed. The analyses in evidence evaluate the PEP's compliance with these requirements. The AVAQMD reviewed the PEP amendment and issued a FDOC on July 22, 2016, and a revised FDOC on August 24, 2016. The FDOC determined that the PEP will comply with AVAQMD rules and regulations as long as a set of air quality conditions are included to ensure continuous compliance during the operation of the facility. The conditions of certification have been evaluated by the parties for

⁷⁵ Ex. 500, pp. 4.1-62 – 4.1-63.

consistency with the LORS included in **Air Quality Table 14**, which has been updated to reflect current LORS.⁷⁶

The conditions of certification in the 2011 Decision and this amendment ensure that the facility will remain in compliance with all LORS.

**Air Quality Table 14
Laws, Ordinances, Regulations, and Standards (LORS)⁷⁷**

Applicable LORS	Description
Federal	U.S. Environmental Protection Agency
Title 40 Code of Federal Regulations (CFR) Part 50 (National Primary and Secondary Ambient Air Quality Standards)	National Ambient Air Quality Standards (NAAQS) are set in this part. NAAQS define levels of air quality which are necessary to protect public health.
Title 40 CFR Part 51 (Requirements for Preparation Adoption and Submittal of Implementation Plans)	Requires new source review (NSR) facility permitting for construction or modification of specified stationary sources. NSR applies to sources of designated nonattainment pollutants. This requirement is addressed through AVAQMD Regulation XIII, Rule 1302.
Title 40 CFR Part 52 (Approval and Promulgation of Implementation Plans)	Prevention of Significant Deterioration (PSD)-Requires review and facility permitting for construction of new or modified major stationary sources of pollutants that occur at ambient concentrations that attain the NAAQS. PSD requirements apply on a pollutant specific basis for major stationary sources. Twenty-eight source categories are subject to PSD requirements for attainment pollutants if facility annual emissions exceed 100 tons per year. A PSD permit would be required. The PSD program in the Antelope Valley is administered by the U.S EPA.
Title 40 CFR Part 60, Subpart A (General Provisions)	Outlines general requirements for facilities subject to standards of performance including, notification, work practice, monitoring and testing requirements.
Title 40 CFR Part 60, Subpart Db (Standards of Performance for Industrial Commercial Institutional Steam generating Units)	Establishes new source performance standards (NSPS) for steam generating units with heat input rates between 100 and 250 million British thermal units per hour (MMBtu/hr).
Title 40 CFR Part 60, Subpart IIII (Standards of Performance for Stationary Compression Ignition Internal Combustion Engines)	Outlines requirements for both the fire pump and emergency engines.
Title 40 CFR Part 60, Subpart KKKK (Standards of Performance for Stationary Combustion Turbines)	Establishes NSPS for new combustion turbines and the associated HRSG and duct burners. NOx emissions are limited to 15 parts per million (ppm) at 15 percent oxygen (O ₂) and fuel sulfur limit of 0.060 pounds (lbs) of SO _x per MMBtu heat input.
Title 40 CFR Part 60, Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for electrical Generating Units)	Establishes standards of performance for carbon dioxide (CO ₂). Affected base load electric generating units are subject to a gross energy output standard of 1,000 lbs of CO ₂ per megawatt hour (MWh).
Title 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants (NESHAPS))	Establishes National Emission Standards for Hazardous Air Pollutants (NESHAPS). The proposed PEP would not exceed

⁷⁶ Ex. 500, p. 4.1-4.

⁷⁷ Ex. 500, pp. 4.1-5 – 4.1-8.

Applicable LORS	Description
Hazardous Air Pollutants)	the major source thresholds for hazardous air pollutants (HAPs) (10 tons per year for any one pollutant or 25 tons per year for HAPs combined).
Title 40 CFR Part 63 Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines)	Establishes NESHAPS for both major and area sources of HAP emissions. Establishes emission and operating limitations for applicable internal combustion engines.
Title 40 CFR Part 64 (Compliance Assurance Monitoring)	Establishes monitoring requirements for facilities to monitor the operation and maintenance of emission control systems.
Title 40 CFR Part 68 (Chemical Accident Prevention Provisions)	The proposed project would be exempt from this requirement. The proposed project would be subject to California's Accidental release Prevention Program for aqueous ammonia storage and use.
Title 40 CFR Part 70 (State Operating Permit Programs) 42 USC 7661-7661 (Permits)	The proposed project would be considered a federal major source and subject to the Title V Operating Permit Program. Title V permits consolidate federally enforceable operating limits. An application would be required within one year following the start of operation. The Title V program is within the jurisdiction of the AVAQMD with U.S. EPA oversight (AVAQMD Rule 3000).
Title 40 CFR Part 72 (Permits Regulation)	Electrical generating units greater than 25 megawatts (MW) are subject to the provisions involving NOx and SO ₂ reductions. Requires a Title IV permit and compliance with acid rain provisions, implemented through the Title V program. This program is within the jurisdiction of the AVAQMD with U.S. EPA oversight.
State	California Air Resources Board and Energy Commission
California Health & Safety Code (H&SC) §40910-40930 (District Plans to Attain State Ambient Air Quality Standards)	State Ambient Air Quality Standards should be achieved and maintained. The permitting of the source needs to be consistent with the approved clean air plan. The AVAQMD NSR program needs to be consistent with regional air quality management plans.
H&SC §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance.
H&SC §44300-44384 (Air Toxic "Hot Spots" Information and Assessment)	Requires preparation and biennial updating of facility emission inventory of hazardous substances; health risk assessments. The AVAQMD requires participation in a district level inventory and reporting program.
California Public Resources Code §25523(a); 2300-2309 (CEC & ARB Memorandum of Understanding)	Requires that an Energy Commission Decision on a proposed amendment include requirements to assure protection of environmental quality.
Title 13 California Code of Regulations (CCR), §2449 (General Requirements for In-Use Off-Road Diesel Fueled Fleets)	Imposes idling limits of five minutes, requires a plan for emissions reductions for medium to large fleets, requires all vehicles with engines greater than 25 horsepower (HP) to be reported to the ARB and labeled, and restricts adding older vehicles into fleets.
Title 13 CCR, §2485	Prohibits idling longer than 5 minutes for diesel fueled commercial motor vehicles.
Title 17 CCR, §93115 Airborne Toxic Control Measure for Stationary Compression Ignition Engines.	Limits types of fuels allowed, establishes maximum emission rates and establishes recordkeeping requirements for stationary compression ignition engines, including diesel-fueled emergency generator and fire water pump engines.
Local	Antelope Valley Air Quality Management District
Regulation II – Permits	Rule 212 – Standards For Approving Permits. Establishes

Applicable LORS	Description
	<p>baseline criteria for approving permits by the AVAQMD for certain projects.</p> <p>Rule 218 – Stack Monitoring. Requires specified facilities to install and maintain stack monitoring systems. The proposed project would be required to install and maintain stack monitoring systems by permit condition.</p> <p>Rule 225 – Federal Operating Permit. Requires major facilities to obtain federal operating permits. The proposed project would be required to submit an application for a federal operating permit within twelve months of the commencement of operations.</p> <p>Rule 226 – Limitations on Potential to Emit. PEP would be considered a major source. PEP would comply with applicable requirements rather than limit the potential to emit. Therefore this rule is not applicable.</p>
Regulation III – Fees	<p>Rule 301 – Permit Fees. Application fees were paid to the AVAQMD.</p>
Regulation IV – Prohibitions	<p>Rule 401 – Visible Emissions. Limits visible emissions opacity to less than 20 percent (or Ringelmann No. 1).</p> <p>Rule 402 – Nuisance. Prohibits facility emissions that cause a public nuisance. The proposed equipment is not expected to generate a public nuisance due to the application of best available control technology (BACT) and the location of the proposed project. No nuisance complaints are expected.</p> <p>Rule 403 – Fugitive Dust. Specifies requirements for controlling fugitive dust. The provisions apply to bulk storage, earthmoving, construction and demolitions, and man-made conditions resulting in wind erosion.</p> <p>Rule 404 – Particulate Matter –Concentration. Specifies standards for particulate matter emission concentrations based on exhaust flow rate. This rule is not applicable to emissions from the combustion of gaseous fuels in steam generators or combustion turbines. The auxiliary boiler and emergency engines would be applicable to this rule.</p> <p>Rule 405 – Solid Particulate Matter –Weight. Limits particulate matter emissions based on process weight. Process weight is defined as the weight of materials introduced into a specific process. The definition for process weight states liquid gaseous fuels and air are not to be considered as part of the process weight. Therefore this rule does not apply.</p> <p>Rule 407 – Liquid and Gaseous Contaminants. Limits CO and sulfur compounds calculated as sulfur dioxide (SO_2).</p> <p>Rule 408 – Circumvention. Prohibits hidden or secondary rule violations. The proposed project is not expected to violate Rule 408. No further analysis required.</p> <p>Rule 409 – Combustion Contaminants. Limits total particulate emissions on a density basis.</p> <p>Rule 429 – Startup and Shutdown Provisions for Oxides of Nitrogen. Limits startup and shutdown intervals and establishes record-keeping provisions.</p> <p>Rule 430 – Breakdown Provisions. Requires the reporting of breakdowns and excess emissions.</p> <p>Rule 431.1 and 431.2– Sulfur Content in Fuels. Limits sulfur</p>

Applicable LORS	Description
	<p>content in gaseous, liquid and solid fuels.</p> <p>Rule 475 – Electric Power Generating Equipment. Limits combustion contaminant (PM10) emissions from any equipment with a maximum rating of more than 10 MW used to produce electric power. Combustion contaminants are limited to 11 pounds per hour and 0.01 grains per standard cubic feet (gr/scf) calculated at 3 percent O₂ on a dry basis over 15 consecutive minutes.</p> <p>Rule 476 – Steam Generating Equipment. Limits NOx and particulate matter from steam boilers, including the auxiliary boiler, and specifies monitoring and recordkeeping for such equipment.</p>
Regulation XI: Source Specific Standards	<p>Rule 1113 – Architectural Coatings. Limits VOC content of applied architectural coatings. The proposed project would be required to use compliant coatings by permit condition.</p> <p>Rule 1134 – Emissions of Oxides of Nitrogen from Stationary Gas Turbines. Limits NOx emissions from combined-cycle turbines and specifies monitoring and recordkeeping for such equipment.</p> <p>Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems. This rule is only applicable to units existing in 1991 which are owned by specific utilities or their successors. Since PEP would be constructed after 1991 and is not owned by any entity listed in the rule, this rule is not applicable to PEP.</p> <p>Rule 1146 – Emissions of Oxides of Nitrogen from Industrial, Institutional, and Commercial Boilers, Steam Generators, and Process Heaters. This rule establishes NOx and CO emission limits and monitoring requirements. This rule does not apply to boilers used to generate electricity.</p> <p>Rule 1171 – Solvent Cleaning Operations. This rule limits VOC emissions from solvent cleaning operations and the storage and disposal of VOC-containing material.</p>
Regulation XIII: New Source Review	<p>Rule 1300 – General. Ensures that PSD requirements apply to all projects. The proposed project has submitted an application to the U.S. EPA for a PSD permit.</p> <p>Rule 1302 – Procedure. Requires certification of compliance with the Federal Clean Air Act (CAA), applicable implementation plans, and all applicable AVAQMD rules and regulations. The Authority to Construct (ATC) application package for the proposed project includes sufficient documentation to comply with Rule 1302(D)(5)(b)(iii). Permit conditions for the proposed project would require compliance with Rule 1302(D)(5)(b)(iv).</p> <p>Rule 1303 – Requirements. Requires BACT and offsets for selected large new sources. Permit conditions would limit the emissions from the proposed project to a level which has been defined as BACT for the proposed project, bringing the proposed project into compliance with Rule 1302(A). Prior to the commencement of construction the proposed project would be required to obtain sufficient offsets to comply with Rule 1303(B)(1).</p> <p>Rule 1304 – Emission Calculations. Provides the procedures and formulas to calculate emission increases and decreases for</p>

AIR QUALITY

Applicable LORS	Description
	<p>new of modified facilities. These are used to determine the applicability of Rule 1303.</p> <p>Rule 1305 – Emissions Offsets. Provides the procedures and formulas to determine the eligibility, calculations and use of offsets required pursuant to the provisions of AVAQMD Rule 1303 (B). Fugitive Emissions, as defined in Rule 1301 (HH), must be included when calculating the base quantity of offsets as required by Rule 1305.</p> <p>Rule 1306 – Electric Generating Facilities. The AVAQMD will consider the Petition to Amend to be equivalent to an application pursuant to AVAQMD Rule 1302(B) during the Determination of Compliance review, and will apply all applicable provisions of AVAQMD Rule 1302 to the application.</p> <p>Rule 1309 – Emission Reduction Credits (ERCs). Establishes a system by which all ERCs are to be banked prior to use.</p>
Regulation XXX: Federal Operating Permits	<p>Regulation XXX –Federal Operating Permits. Contains requirements for sources which must have a federal operating permit and an acid rain permit.</p>
Maximum Achievable control Technology Standards	<p>H&SC §39658(b)(1) states that when U.S. EPA adopts a standard for a toxic air contaminant pursuant to §112 of the Federal Clean Air Act (42 USC §7412), such standard becomes the Airborne Toxic Control Measure (ATCM) for the toxic air contaminant. Once an ATCM has been adopted it becomes enforceable by the AVAQMD 120 days after adoption or implementation (H&SC §39666(d)). U.S. EPA has not to date adopted a Maximum Achievable Control Technology (MACT) standard that is applicable to the proposed project. Should U.S. EPA adopt an applicable MACT standard in the future, the AVAQMD will be required to enforce said MACT as an ATCM on the proposed project. MACT is also required for each major source of toxic air contaminants. However, PEP will not emit more than ten tons per year of any individual toxic air contaminant, and will not collectively emit more than 25 tons per year of all toxic air contaminants, so MACT is not required.</p>

CHANGES TO CONDITIONS OF CERTIFICATION⁷⁸

The AVAQMD provided 72 permit conditions and the parties submitted 11 conditions of certification for a total of 83 conditions of certification to replace the existing AVAQMD permit conditions issued in the 2011 Decision. Most of the **Air Quality** Conditions of Certification, **AQ-SC1** through **AQFS-7**, approved for the PHPP are either inapplicable to the PEP or require substantial revision due to the replacement of equipment and elimination of the solar component.⁷⁹

Those provisions of Conditions of Certification **AQ-SC7** through **AQ-SC16** relating to the now eliminated solar component are no longer needed and have been removed.⁸⁰

⁷⁸ The conditions of certification for Air Quality, as well as for all other topics of this Decision, may be found in **Appendix A**.

⁷⁹ Ex. 500, p. 4.1-86.

⁸⁰ Ex. 500, p. 4.1-56.

Staff proposed revising former Conditions of Certification **AQ-SC18** and **AQ-SC19** to ensure adequate mitigation for the PEP. Due to renumbering, former Condition of Certification **AQ-SC18** will be renumbered as Condition of Certification **AQ-SC8**, and Condition of Certification **AQ-SC19** will be renumbered as Condition of Certification **AQ-SC9**. Condition of Certification **AQ-SC8** will include the revised quantities of NOx and VOC mitigation required for the PEP. In addition, the specific ERC certificates evaluated by the U.S. EPA, AVAQMD, and Staff will be listed in the condition. Condition of Certification **AQ-SC9** will include the revised quantity of PM10 mitigation required to offset both PM10 and SOx emissions. Condition of Certification **AQ-SC9** specifies the roads that would need to be paved. Staff is also proposing the revision of Condition of Certification **AQ-SC6** to clarify ongoing reporting requirements during operation.⁸¹

The AVAQMD reviewed the PEP amendment as a new project and issued a FDOC on July 22, 2016. A revised FDOC was issued on August 24, 2016. The FDOC determined that the PEP would comply with AVAQMD rules and regulations as long as a set of air quality conditions are included to ensure continuous compliance during the operation of the facility. The proposed conditions were evaluated by Staff for consistency with the LORS included in **Air Quality Table 14**, which has been updated to reflect current LORS. We adopt the approach recommended by Staff and Petitioner, and strike the existing conditions of certification from the 2011 Decision. Instead, we adopt Conditions of Certification **AQSC-1** through **AQFS-9** that are consistent with the AVAQMD's Revised FDOC.⁸²

We find that with the imposition and implementation of revised Conditions of Certification **AQSC 1** through **AQ-SC11** and Conditions of Certification **AQ-1** through **AQFS-9**, the PEP will comply with all applicable LORS. We further find that with the imposition and implementation of the conditions of certification, the PEP has no significant unmitigated direct, indirect, or cumulative impacts.

AGENCY AND PUBLIC COMMENT

No agency or public comments on the topic of **AIR QUALITY** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings.

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards, and that with the implementation of the conditions of

⁸¹ Ex. 500, pp. 4.1-56 – 4.1-57.

⁸² Ex. 500, p. 4.1-4.

certification the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to air quality.

2. The parties and the Antelope Valley Air Quality Management District analyzed air emissions for the Palmdale Energy Project's two 214 megawatt Siemens SGT6-5000F combustion turbines with inlet evaporative cooling and dry low NOx combustors, one 276 megawatt Siemens steam turbine, and two heat-recovery steam generators with 193.1 MMBtu/hr duct burners with air-cooled condenser, auxiliary boilers, emergency generator, and fire pump.
3. The maximum NO₂, PM2.5, CO, and SO₂ construction impacts from the Palmdale Energy Project will remain below the National Ambient Air Quality Standards and California Ambient Air Quality Standards.
4. With implementation of best available control technology and conditions of certification, the NOx and VOC emissions from the Palmdale Energy Project construction will be less than significant.
5. The Palmdale Energy Project initial commissioning period will be less than 1,920 hours.
6. The Palmdale Energy Project's maximum initial commissioning emission impacts are below the most stringent ambient air quality standards for NO₂ and CO.
7. During commissioning, SO₂, PM10, and PM2.5 emissions are expected to be no greater than full-load operations.
8. The Palmdale Energy Project operational impacts will not exceed the national and state ambient air quality standards for NO₂, PM2.5, CO, or SO₂.
9. The use of natural gas and good combustion practices are proposed to meet best available control technology emission limits for SOx, CO, VOCs, and PM10/2.5.
10. The Petitioner has identified the specific Emission Reduction Credit certificates proposed for use for federal nonattainment pollutants and precursors.
11. The Petitioner has provided a detailed protocol including the methodology that would be followed to generate PM10 credits from road paving.
12. Fugitive dust from the Palmdale Energy Project will be insignificant.
13. Cumulative operating impacts after mitigation will be less than significant.

14. The Antelope Valley Air Quality Management District released its Final Determination of Compliance on August 24, 2016, stating that the Palmdale Energy Project will comply with applicable Air District rules, which incorporate state and federal requirements.
15. None of the factors that require a subsequent or supplemental environmental analysis set forth in the California Environmental Quality Act Guidelines section 15162 as described in the **INTRODUCTION** section of this Decision are present regarding this topic.

CONCLUSIONS OF LAW

1. Imposition and implementation of the mitigation measures contained in the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to air quality.
2. Imposition and implementation of the mitigation measures contained in the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative air quality impacts.

C. PUBLIC HEALTH

INTRODUCTION

This section supplements the discussion on air quality and considers the potential public health effects from the Palmdale Energy Project's (PEP) emissions of toxic air contaminants (TACs).¹

This topic was uncontested. Evidence on the topic of Public Health is contained in Exhibits 1, 2, 3, 4, 6, 8, 10-20, 24, 25, 28, 29, 31, 33-37, 40, 43-50, 52-56, 500, 505, and 508.²

SETTING

The PEP³ is located in the northernmost area of the city of Palmdale, south of East Avenue M. The 50-acre power plant site is located in an industrial area and is currently vacant and undeveloped. The site is largely flat, with elevations ranging from approximately 2,500 feet to 2,505 feet above sea level. The setting has not changed from the setting of the approved Palmdale Hybrid Power Project (PHPP).⁴

Sensitive receptors such as infants, the aged, and people with specific illnesses or diseases are the subpopulations that are most sensitive to the effects of toxic substance exposure. Approximately 6,702 residents live within a six-mile radius of PEP, and sensitive receptors within a six-mile radius of the project site include:

- 2 daycare centers
- 45 schools
- 4 health facilities

¹ This Decision discusses other potential public health concerns under various topics. For instance, impacts from emissions of criteria pollutants are treated in the **AIR QUALITY** section. The accidental release of hazardous materials is addressed in **HAZARDOUS MATERIALS MANAGEMENT**. Electromagnetic fields are covered in **TRANSMISSION LINE SAFETY AND NUISANCE**. Potential impacts to soils and surface water sources are considered in the **SOIL AND WATER RESOURCES** section. Potential exposure to contaminated soils and hazardous wastes is described in **WASTE MANAGEMENT**.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

⁴ Ex. 500, p. 4.7-5.

- 1 detention center

The evidence shows that the nearest daycare center is approximately four miles northwest from the site, the nearest school is approximately 2 miles north from the site, and the nearest health facility is approximately 5.49 miles southeast from the site.⁵

Meteorological conditions, including wind speed, wind direction, and atmospheric stability, affect the extent to which pollutants are dispersed into the air and the direction of pollutant transport. This, in turn, affects the level of public exposure to emitted pollutants along with the associated health risks. The climate of the project site located in the Mojave Desert Air Basin (MDAB) is characterized as high desert with very hot summers and mild winters. Clear skies, extreme temperature changes, low precipitation, and strong seasonal winds are common features of the Mojave Desert climate. Please refer to the **AIR QUALITY** section for a more detailed description of meteorological data for the area.⁶

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please see the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION

In the 2011 PHPP Decision (2011 Decision),⁷ the Energy Commission reviewed the potential public health effects from project emissions of TACs from the PHPP by performing a health risk assessment (HRA) consisting of:

- Identification of the types and amounts of hazardous substances that the PHPP could emit into the environment;
- Estimation of worst-case concentrations of PHPP emissions in the environment using dispersion modeling;
- Estimation of amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal (skin) contact; and

⁶ Ex. 500, p. 4.7-6.

⁷ 2011 PHPP Final Decision (TN 61876).

Characterization of potential health risks by comparing worst-case exposure to the PHPP's emissions with the scientific safety standards based on known health effects.⁸

Energy Commission staff (Staff) performed the initial HRA at a "screening level." This approach 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.⁹

During construction of the PHPP, the 2011 Decision identified exposure to fugitive dust¹⁰ and diesel exhaust as potential public health hazards and project impacts. The 2011 Decision also identified air-borne particulate matter during operations as a potential public health hazard and project impact.¹¹

While no conditions of certification specific to public health were imposed, the 2011 Decision found that with the imposition of conditions of certification related to Waste Management and Air Quality, the 2011 Decision mitigated any direct, indirect, or cumulative public health impacts from the construction of the PHPP to a "less than significant" level.¹²

On an operational level, the 2011 Decision determined that the maximum cancer risk and non-cancer hazard index (both acute and chronic) for operations emissions from the PHPP were all below the level of significance. It also determined that the operation of the PHPP did not create any direct, indirect, or cumulative public health impacts. However, it imposed Condition of Certification **PUBLIC HEALTH-1** to ensure the potential for growth of Legionella bacteria and other micro-organisms in the wet-cooling towers was minimized.¹³

The 2011 Decision found that the PHPP was in conformity with all laws, ordinances, regulations, and standards (LORS).¹⁴

⁸ 2011 PHPP Final Decision, p.6.3-1.

⁹ 2011 PHPP Final Decision, pp.6.3-1 – 6.3-2.

¹⁰ Fugitive dust refers to dust particles that are introduced into the air through certain activities such as soil cultivation and vehicles operating on open fields or dirt roadways.

¹¹ 2011 PHPP Final Decision, pp.6.3-2 – 6.3-9.

¹² 2011 PHPP Final Decision, pp.6.3-12 – 6.3-13.

¹³ 2011 PHPP Final Decision, pp.6.3-9 – 6.3-13; Ex. 500, p. 4.7-3.

¹⁴ *Id.*

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines, section 15162, are met. However, the HRA methodology has changed since the 2011 Decision. The California Environmental Protection Agency (CalEPA) Office of Environmental Health Hazard Assessment (OEHHA) updated its 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines, and the California Air Resources Board (ARB) developed the latest version of the Hotspots Analysis Reporting Program Version 2 (HARP2). These HRA methodology updates constitute a change in fact and circumstance from the 2011 Decision requiring supplementation in accordance with CEQA Guidelines, section 15162.¹⁵

Existing Public Health Concerns

The analysis in evidence identifies the current status of respiratory diseases (including asthma), cancer, and childhood mortality rates of the population located within the same county or air basin of the proposed PEP site.¹⁶

Method and Threshold for Determining Significance

The analysis evaluates the information and data in evidence using the CalEPA OEHHA 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines in order to identify contaminants that cause cancer or other noncancer health effects, and identify the toxicity, cancer potency factors and non-cancer Reference Exposure Levels (RELs) of these contaminants. The ARB and local air districts conduct ambient air monitoring of TACs and the California Department of Public Health evaluates pollutant impacts in specific communities. The HRA process addresses the three following categories of health impacts: (1) acute (short-term) health effects; (2) chronic (long-term) noncancer effects; and (3) cancer risk (also long-term). This approach is consistent with the PHPP analysis, except newer health impact guidance is used when appropriate. These categories are described in Staff's testimony.¹⁷

The health risk from exposure to each project-related pollutant is assessed using "worst case" emission rates and impacts. Maximum hourly emissions are used to

¹⁵ Cal. Code Regs., tit. 14, § 15162.

¹⁶ Ex. 500, p. 4.7-6.

¹⁷ Ex. 500, pp. 4.7-7 – 4.7-8.

calculate acute (one-hour) noncancer health effects, while estimates of maximum emissions on an annual basis are used to calculate cancer and other chronic (long-term) health effects.¹⁸

CONSTRUCTION IMPACTS AND MITIGATION MEASURES

The construction period for the PEP would be approximately 25 months. The potential construction risks are associated with exposure to fugitive dust and combustion emissions (i.e., diesel exhaust).¹⁹

Fugitive Dust

Fugitive dust is defined as dust particles that are introduced into the air through certain activities such as soil cultivation, site preparation and grading/excavation, wind erosion, and vehicles operating on open fields or dirt roadways. As long as the dust plumes are kept from leaving the project site, there will be no significant risk of fugitive dust adversely affecting public health.

The effects of fugitive dust on public health are considered in the **AIR QUALITY** section and include mitigation measures Condition of Certification **AQ-SC3** and Condition of Certification **AQ-SC4** to prevent fugitive dust plumes from leaving the project boundary.²⁰

Diesel Exhaust

Emissions of combustion byproducts during construction would result from exhausts from diesel construction and transportation equipment, trucks, and portable welding machines, generators, and compressors.

A screening HRA for diesel particulate matter (DPM) was conducted according to the CalEPA OEHHA 2015 Air Toxics Hot Spots Program Risk Assessment Guideline to assess the potential impacts associated with diesel emissions during the construction activities at the PEP. This HRA was based on the annual average emissions of DPM, assumed to occur each year for two years of continuous exposure. The HARP2 model was used to evaluate construction-related public health impacts at the Point of Maximum Impact (PMI), Maximally

¹⁸ Ex. 500, p. 4.7-14.

¹⁹ Ex. 500, p. 4.7-10.

²⁰ *Id.*

Exposed Individual Resident (MEIR), Maximally Exposed Individual Worker (MEIW), and the highest values at sensitive receptors.²¹

The results of the revised assessment shows the excess cancer risk at the PMI, MEIR, MEIW, and the highest value at a sensitive receptor are 6.81 in a million, 0.0375 in a million, 0.0469 in a million, and 0.0318 in one million, respectively, all less than the Energy Commission's significant impact threshold of 10 in one million. The predicted chronic health index at the PMI, MEIR, and MEIW are 0.003981, 0.000022, and 0.000027, respectively. The chronic hazard indices for diesel exhaust during construction activities are all lower than the significance level of 1.0.²²

Based on the results of the Petitioner's and Staff's analyses, and considering the following two additional factors: (1) the potential exposure of DPM would be sporadic and limited in duration; and (2) the predicted incremental increase in cancer risk at the MEIR and MEIW and chronic health index at the PMI, MEIR, and MEIW are less than the significance thresholds of 10 in one million and 1.0, respectively, we find that impacts associated with the DPM from anticipated PEP construction activities would be less than significant.²³

AIR QUALITY Condition of Certification AQ-SC5 will ensure that cancer-related impacts of diesel exhaust emissions for the public and workers are mitigated during construction to a point where they are not considered significant.²⁴

OPERATIONAL IMPACTS AND MITIGATION MEASURES

Pollutants that could potentially be emitted during operation are listed in **Public Health Table 1**, including both criteria and non-criteria pollutants. These pollutants include certain volatile organic compounds (VOCs) and polycyclic aromatic hydrocarbons. Criteria pollutant emissions and impacts are examined in the **AIR QUALITY** section of this Decision. Since the PEP would use an air-cooled condenser, there would be no emissions of toxic metals or VOCs from

²¹ Ex. 500, p. 4.7-12.

²² *Id.*

²³ Ex. 500, p. 4.7-13.

²⁴ Ex. 500, p. 4.7-14. Note: the potential levels of criteria pollutants from operation of construction-related equipment are discussed in the **AIR QUALITY** section of this Decision, along with mitigation measures and related conditions of certification. The pollutants of most concern in this regard are particulate matter (PM), carbon monoxide (CO), sulfur dioxide (SO₂), and nitrogen dioxide (NO₂).

cooling tower mist or drift and no health risk from the potential presence of the Legionella bacterium responsible for Legionnaires' disease.²⁵

Hazard Identification

Numerous health effects have been linked to exposure to TACs, including development of asthma, heart disease, Sudden Infant Death Syndrome, respiratory infections in children, lung cancer, and breast cancer. TACs emitted from the natural-gas-fired turbines, auxiliary boiler, fire pump, and emergency generator set include acetaldehyde, acrolein, ammonia, benzene, 1,3-butadiene, ethyl benzene, formaldehyde, naphthalene, polycyclic aromatics, propylene oxide, toluene, xylene, and diesel particulate matter. **Public Health Table 1** and **Public Health Table 2** list each such pollutant.²⁶

Public Health Table 1
The Main Pollutants Emitted from the Proposed Project

Criteria Pollutants	Non-criteria Pollutants (Toxic Pollutants)
Carbon monoxide (CO)	Acetaldehyde
Oxides of nitrogen (NO _x)	Acrolein
Particulate matter (PM10 and PM2.5)	Ammonia
Oxides of sulfur (SO _x)	Benzene
Volatile Organic Compounds (VOCs)	1,3-Butadiene
Lead	Ethyl Benzene
	Formaldehyde
	Hexane
	Naphthalene
	Polycyclic Aromatic Hydrocarbons (PAHs)
	Propylene
	Propylene oxide
	Toluene
	Xylene
	Diesel Particulate Matter

Source: Ex. 500, p. 4.7-15.

²⁵ Ex. 500, p. 4.7-14.

²⁶ *Id.*

Public Health Table 2
Types of Health Impacts and Exposure Routes Attributed to Toxic Emissions

Substance	Oral Cancer	Oral Noncancer	Inhalation Cancer	Noncancer (Chronic)	Noncancer (Acute)
Acetaldehyde			✓	✓	✓
Acrolein				✓	✓
Ammonia				✓	✓
Benzene			✓	✓	✓
1,3-Butadiene			✓	✓	
Ethyl Benzene			✓	✓	
Formaldehyde			✓	✓	✓
Naphthalene		✓	✓	✓	
Polycyclic Aromatic Hydrocarbons (PAHs)	✓		✓		
Propylene Oxide			✓	✓	✓
Toluene				✓	✓
Xylene				✓	✓
Diesel Particulate Matter			✓	✓	

Source: Ex. 500, p. 4.7-15.

Exposure Assessment

Public Health Table 2 shows the exposure routes of TACs and how they would contribute to the total risk obtained from the risk analysis. The applicable exposure pathways for the toxic emissions include inhalation, home-grown produce, dermal (through the skin) absorption, soil ingestion, and mother's milk.²⁷

Dose-Response Assessment

Public Health Table 3 lists the toxicity values used to quantify the cancer and noncancer health risks from the PEP's combustion-related pollutants. The listed toxicity values for cancer potency factors and RELs are published in the CalEPA OEHHA Guidelines and the CalEPA OEHHA/ARB Consolidation Table of CalEPA OEHHA/ARB Approved Risk Assessment Health Values. RELs are used to calculate short-term and long-term noncancer health effects, while the cancer potency factors are used to calculate the lifetime risk of developing cancer.²⁸

²⁷ Ex. 500, p. 4.7-14.

²⁸ Ex. 500, p. 4.7-16.

Public Health Table 3
Toxicity Values Used to Characterize Health Risks

Toxic Air Contaminant	Inhalation Cancer Potency Factor (mg/kg-d) ⁻¹	Chronic Inhalation REL (µg/m ³)	Acute Inhalation REL (µg/m ³)
Acetaldehyde	0.010	140	470 (1-hr) 300 (8-hr)
Acrolein	—	0.35	2.5 (1-hr) 0.7 (8-hr)
Ammonia	—	200	3,200
Benzene	0.10	60	1,300
1,3-Butadiene	0.60	20	—
Ethyl Benzene	0.0087	2,000	—
Formaldehyde	0.021	9	55 (1-hr) 9 (8-hr)
Hexane	—	7000	—
Naphthalene	0.12	9.0	—
Polycyclic Aromatic Hydrocarbons (PAHs)	3.9	—	—
Propylene Oxide	0.013	3	3100
Toluene	—	300	37,000
Xylene	—	700	22,000

Sources: Source: Ex. 500, p. 4.7-16.

Characterization of Risks from TACs

The HRA integrates the health effects and public exposure information, provides quantitative estimates of health risks resulting from project emissions, and then characterizes potential health risks by comparing worst-case exposure to safe standards based on known health effects. Health risks potentially associated with ambient concentrations of carcinogenic pollutants were calculated in terms of excess lifetime cancer risks. The total cancer risk at any specific location is found by adding the contributions from the individual carcinogens. Health risks from non-cancer health effects were calculated in terms of the hazard index as a ratio of ambient concentration of TACs to RELs for that pollutant.²⁹

Cancer Risk at the Point of Maximum Impact (PMI)

The most significant result of HRA is the numerical cancer risk for the maximally exposed individual (MEI), which is the individual located at the PMI, and risks to

²⁹ Ex. 500, pp. 4.7-16 – 4.7-17.

the MEIR. Human health risks associated with emissions from the proposed PEP are unlikely to be higher at any location other than the PMI. Therefore, if there is no significant impact associated with concentrations at the PMI location, there would not be significant impacts in any other location in the project area.³⁰

The cancer risk to the MEI at the PMI is referred to as the Maximum Incremental Cancer Risk (MICR). The MICR is based on exposure 24 hours per day, 365 days per year, for a 30-year lifetime exposure. However, the PMI (and thus the MICR) is not necessarily associated with actual exposure because in many cases the PMI is in an uninhabited area. Therefore, the MICR is generally higher than the maximum residential cancer risk. The PMI is approximately 0.51 miles southeast of the proposed PEP site. As shown in **Public Health Table 4**, total worst-case individual cancer risk was calculated to be 2.475³¹ in one million at the PMI. The cancer risk value at the PMI is below the significance level, 10 in one million, indicating that no significant adverse cancer risk is expected.³²

³⁰ Ex. 500, pp. 4.7-17 – 4.7-18.

³¹ The worst-case individual cancer calculated by Staff is slightly lower than the one calculated by the project owner (i.e.3.824). This result is because Staff used 30 years and the project owner used 70 years as the exposure duration (residency time).

³² Ex. 500, p. 4.7-18.

Public Health Table 4
Results of Staff's Analysis and the Project Owner's Analysis
of Operation Hazard/Risk from Air Toxics³³

Receptor Type	Staff's Analysis			Project Owner's Analysis		
	Cancer Risk (per million)	Chronic HI ^f	Acute HI ^f	Cancer Risk (per million)	Chronic HI	Acute HI
PMI^a	2.475 ^g	0.0109	0.0272	3.824 ^h	0.0109	0.0242
MEIR^b	0.0355	0.00027	0.0106	0.0547	0.00027	0.0106
MEIW^c	0.0075	0.00064	0.0216	0.0521	0.00064	0.0216
Nearest School^d	0.0348	0.00028	0.0074	0.0538	0.00028	0.0074
Nearest Health Facility^d	0.0133	0.00012	0.0025	0.0206	0.00012	0.0024
Nearest Daycare^d	0.0072	0.00005	0.0029	0.0112	0.00005	0.0029
Significance Level^e	10	1	1	10	1	1

Note:

^a PMI= Point of Maximum Impact (located approximately 0.51 miles southeast of the project for cancer risk).

^b MEIR = maximally exposed individual (MEI) of residential receptors (located at a residence approximately 1.2 miles north of the project) for cancer. Location of the residence of the highest risk with a 30-year residential scenario.

^c MEIW = MEI of worker (located approximately 0.24 miles north of the project). Occupational exposure patterns assuming standard work schedule, i.e. exposure of eight hours/day, five days/week, 49 weeks/year for 25 years.

^d Sensitive Receptor: the nearest school is approximately 2 miles north from the site, the nearest health facility is approximately 5.49 miles southeast from the site, and the nearest daycare is approximately 3.87 miles northwest from the site.

^e The significance level is a level that does not necessarily mean that adverse impacts are expected, but rather that further analysis and refinement of the exposure assessment is warranted.

^f HI = Hazard Index.

^g The exposure duration was assumed to be 30 years according to the newest OEHHA Guidance (OEHHA 2015).

^h The exposure duration was assumed to be 70 years by the project owner.

Chronic and Acute Hazard Index (HI)

The screening HRA for the project included emissions from all sources and resulted in a maximum chronic hazard index (HI) of 0.0109 and a maximum acute HI of 0.0272. As **Public Health Table 4** shows, both acute and chronic hazard indices are less than 1.0, indicating no short- or long-term adverse health effects.³⁴

Project-Related Impacts at Area Residences

The MEIR most closely represents the maximum project-related lifetime cancer risk. Residential risk is presently assumed by the regulatory agencies to result from exposure lasting 24 hours per day, 365 days per year, over a 30-year lifetime. Residential risks were presented in terms of MEIR and health HI at residential receptors in **Public Health Table 4**. The cancer risk for the MEIR is

³³ Ex. 500, p. 4.7-19.

³⁴ Ex. 500, p. 4.7-18.

0.0355, which is below the significance level. The maximum resident chronic HI and acute HI are 0.00072 and 0.0106, respectively. They are both less than 1.0, indicating no short- or long-term adverse health effects for these residents.³⁵

Risk to Workers

The cancer risk to the maximally exposed individual worker or MEIW at PMI is summarized in **Public Health Table 4**. Workplace risk is presently calculated by regulatory agencies using exposures of eight hours per day, 245 days per year, over a 25-year period. As shown in **Public Health Table 4**, the cancer risk for workers at MEIW (i.e. 0.0075 in 1 million) is below the significance level.³⁶

Risk to Sensitive Receptors

The highest cancer risk at the nearest school is 0.0348 in one million, the chronic HI is 0.00028 and the acute HI is 0.0047. The highest cancer risk at the nearest health facility is 0.0133 in one million, the chronic HI is 0.00012 and the acute HI is 0.0025. The highest cancer risk at the nearest daycare is 0.0072 in one million, the chronic HI is 0.00005, and the acute HI is 0.0029. All of these risks are below significance levels.³⁷

The evidence establishes that the cancer and noncancer risks from the PEP operation are all below the significance levels. This means that no health impacts would occur in any segments of the surrounding population. Therefore, we find that there is no need for conditions of certification to protect public health during facility operation.

CUMULATIVE IMPACTS AND MITIGATION

A project would result in a significant adverse cumulative impact if its effects were 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 of other current projects, and the effects of probable future projects. 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

³⁵ Ex. 500, p. 4.7-18.

³⁶ *Id.*

³⁷ Ex. 500, p. 4.7-19.

cumulatively contribute to regional hazards, then it could be considered a less than cumulatively considerable impact.³⁸

The geographic scope of analysis for cumulative effects to public health is a six-mile radius around the project site. A master list of projects considered for cumulative analyses is contained in **Introduction Table 1** in the **INTRODUCTION** section of this Decision. The evidence listed two existing Antelope Valley Air Quality Management District neighboring projects (Lockheed Martin and Northrop Grumman) as identified by the Antelope Valley Air Quality Management District (AVAQMD). Each facility is located more than two miles from the project site. Based on the AVAQMD's priority scores of these two stationary sources, and the distances of each from the project site, the background health risk impacts would not be significant in the area in the vicinity of the proposed PEP site.³⁹

The analysis in evidence considered the potential impacts due to construction and operation of the PEP with new projects or new "reasonably foreseeable probable future projects" in the area since the PHPP was approved. No projects fall within the six-mile radius. Therefore, we find that the PEP, even when combined with the two existing projects, will not contribute to cumulatively considerable public health impacts.⁴⁰

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP.⁴¹ The evidence indicates that LORS applicable to the PHPP have not changed since the 2011 Decision was published in August 2011. However, HRA methodology has been changed since the 2011 Final Decision. First, OEHHA updated its 2015 Air Toxics Hot Spots Program Risk Assessment Guidelines. Then, to incorporate OEHHA's 2015 Guidelines, the ARB developed the HARP2 in 2015.⁴² We note that California Code of Regulations, title 22, section 60306 is no longer an applicable LORS because the PEP replaced the wet-cooling tower with an air-

³⁸ Cal. Code Regs., tit. 14, § 15130, Ex. 500, p. 4.7-20.

³⁹ Ex. 500, p. 4.7-20.

⁴⁰ Ex. 500, pp. 4.7-20 – 4.7-21.

⁴¹ 2011 PHPP Final Decision, pp.6.3-10 – 6.3-11.

⁴² Ex. 500, p. 4.7-1.

cooled condenser (ACC).⁴³ Therefore, we have deleted Condition of Certification **PUBLIC HEALTH-1** since an air-cooled condenser would be utilized. We find that the PEP will continue to comply with all LORS.

CHANGES TO CONDITIONS OF CERTIFICATION

In the 2011 Decision, the only condition of certification imposed was Condition of Certification **PUBLIC HEALTH-1**, which we have deleted as explained above.

We find the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative public health impacts.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **PUBLIC HEALTH** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to public health.
2. The health risk analysis in evidence applied new standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project.
3. Construction and normal operation of the Palmdale Energy Project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.
4. Release of non-criteria pollutants from the Palmdale Energy Project will not have acute or chronic adverse public health effects or cause a significant increase in cancer risk, based on the updated Health Risk Assessment Standards.

⁴³ Ex. 500, p. 4.7-1.

5. Emissions from the construction and operation of the natural-gas-burning Palmdale Energy Project will not have a significant impact on the public health of the surrounding population based on the updated Health Risk Assessment Standards.
6. The Palmdale Energy Project will not contribute to cumulative impacts to public health in the area.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the amended Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to public health.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the amended Palmdale Energy Project will not result in significant direct, indirect, or cumulative public health impacts.

D. WORKER SAFETY AND FIRE PROTECTION

INTRODUCTION

Workers at industrial facilities are exposed to potential health and safety hazards on a daily basis. This section of the Decision focuses on whether the Petitioner's proposed health and safety plans for the Palmdale Energy Project¹ (PEP) are in compliance with all applicable laws, ordinances, regulations, and standards (LORS), and thus adequate to protect industrial workers. We also address the availability and adequacy of fire protection and emergency response services.²

This topic was uncontested. Evidence on the topic of Worker Safety and Fire Protection can be found in Exhibits 1, 2, 3, 4, 6, 22, 26 - 28, 56, 500, and 508.³

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION⁴

In the 2011 Palmdale Hybrid Power Project Decision (2011 Decision), we reviewed the Palmdale Hybrid Power Project's (PHPP) potential impacts on worker safety and fire protection. We concluded that with the adoption of Conditions of Certification **WORKER SAFETY-1** through **WORKER SAFETY-9**, the PHPP's potential impacts to worker safety and fire protection were mitigated to a level of "less than significant" and the PHPP would be in conformity with all LORS.⁵

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission does not need to re-evaluate the potential environmental impacts of the Palmdale Energy Project if it meets the conditions set forth in California Environmental Quality Act (CEQA) Guidelines, section 15162. The evidence establishes that, with the elimination

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² Ex. 500, p. 4.14-1.

³ 3/22/17 RT 9:3-11.

⁴ 2011 PHPP Final Decision (TN 61876).

⁵ 2011 PHPP Final Decision, pp. 6.4-6 – 6.4-7.

of the solar energy component, which reduces the risk of fire due to the absence of solar heat transfer fluid at the project site, there would be:

1. No new significant impacts to worker safety and fire protection not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁶

Therefore, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision set forth the LORS applicable to the PHPP.⁷ The evidence establishes that, except as set forth below, there have been no changes to the LORS that apply to the PEP.⁸

Only two LORS applicable to **WORKER SAFETY AND FIRE PROTECTION** have changed since the 2011 Decision was published. One is an update of the fire code adopted and implemented by the Los Angeles County Fire Department, and the other addresses the need to enforce the *National Fire Protection Association Recommended Practice for Fire Protection for Electric Generating Plants and High Voltage Direct Current Converter Stations* (NFPA) 850 Standard.

CHANGES TO CONDITIONS OF CERTIFICATION

The 2011 Decision included NFPA 850 as an applicable LORS. However, NFPA 850 is written as a set of “recommended” rather than “required” practices. In order to avoid any potential confusion, we impose Condition of Certification **WORKER SAFETY-11** to require compliance with NFPA 850 as an enforceable building code for the PEP.⁹

⁶ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162; Exs. 1, pp. 4.2-1 – 4.2-2; 500, pp. 4.14-1 - 4.14-5.

⁷ 2011 PHPP Final Decision, pp. 6.4-1 – 6.4-5.

⁸ Ex. 500, pp. 4.14-2 – 4.14-4.

⁹ *Id.*

Similarly, we adopt Condition of Certification **WORKER SAFETY-10**, which requires reporting to the Construction Project Manager (CPM) within 24 hours of any incidence of:

- Heat illness (e.g., heat stress, exhaustion, stroke, or prostration) occurring in any worker on site; or
- Any confirmed case (medical diagnosis) of Valley Fever in any worker on the site.

We also delete Condition of Certification **WORKER SAFETY-9** as there is no longer a solar component using Therminol heat transfer fluid.¹⁰

We, therefore, find that, with the imposition and implementation of Conditions of Certification **WORKER SAFETY-1** through **WORKER SAFETY-11** (except **WORKER SAFETY-9**, which is no longer needed) the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts.

AGENCY AND PUBLIC COMMENTS

No comments on the topic of **WORKER SAFETY AND FIRE PROTECTION** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision found that the Palmdale Hybrid Power Project would conform with all laws, ordinances, regulations, and standards, and with the implementation of the conditions of certification, the Palmdale Hybrid Power Project would not have any significant direct, indirect, or cumulative impacts to worker safety and fire protection.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines section 15162 and, as described in the **INTRODUCTION** section of this Decision, are present regarding worker safety and fire protection.
3. Condition of Certification **WORKER SAFETY-9** shall be deleted as there is no longer a solar component using Therminol heat transfer fluid.
4. Condition of Certification **WORKER SAFETY-10** requires the reporting to the Construction Project Manager within 24 hours of any incident of heat illness or confirmed case of Valley Fever.

¹⁰ Ex. 500, pp. 4.14-3 – 4.14-4.

5. Revising Condition of Certification **WORKER SAFETY-11** would clarify that conformance to the National Fire Protection Association 850 Standard is required and ensures that the Palmdale Energy Project facility is built to comply with the National Fire Protection Association 850 recommendations by allowing the Chief Building Official to enforce all of the applicable provisions.
6. Except as described above, there have been no changes in the laws, ordinances, regulations, and standards applicable to the Palmdale Energy Project, and the Palmdale Energy Project would comply with all applicable laws, ordinances, regulations, and standards.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards relating to worker safety and fire protection.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to worker safety and fire protection.

E. HAZARDOUS MATERIALS MANAGEMENT

INTRODUCTION

In this section of the Decision, we review the Palmdale Energy Project¹ (PEP) to determine whether it will create significant impacts to public health and safety resulting from the use, handling, storage, or transport of hazardous materials.

This topic was uncontested. Evidence on the topic of Hazardous Materials Management is contained in Exhibits 1, 2, 3, 4, 6, 22, 43, 46, 56, 500, and 508.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design features of the PEP, as well as the construction and operation of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF THE 2011 DECISION³

In the 2011 Palmdale Hybrid Power Project (PHPP) Decision (2011 Decision), the Energy Commission found that the use of hazardous materials, including aqueous ammonia and natural gas, during construction and operation would not pose a significant risk of adverse impacts to the public. The Energy Commission also found that, with the implementation of the conditions of certification, the PHPP would comply with all applicable laws, ordinances, regulations, and standards (LORS) related to Hazardous Materials Management and that the use of hazardous materials by the PHPP would not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.⁴

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ 2011 PHPP Final Decision (TN 61876).

⁴ 2011 PHPP Final Decision, pp. 6.6-1 – 6.6-20.

Environmental Quality Act Guidelines, section 15162, are met. The evidence establishes that there would be:

1. No new significant impacts regarding hazardous materials management not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to hazardous materials management; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the amended project on the environment related to hazardous materials management.⁵

The evidence establishes that relative to the approved PHPP, the PEP will require less use, storage, and transportation of hazardous materials.⁶ We find, on the basis of this uncontested evidence, that there is no need to supplement the environmental analysis on the topic of **Hazardous Materials Management** contained in the 2011 Decision. The proposed modifications will not result in new significant impacts, substantially increase the severity of previously identified significant impacts, or necessitate any material changes to the hazardous materials management conditions of certification identified in the 2011 Decision to mitigate impacts or to maintain compliance with LORS. The record establishes that the PEP will reduce any environmental impact from the use of hazardous materials to an even lesser level of significance than the approved PHPP project.

Therefore, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, and cumulative impacts related to handling, storage, and disposal of project-related hazardous materials.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

There was only one LORS applicable to **HAZARDOUS MATERIALS MANAGEMENT** that has changed since the 2011 Decision was published. National Fire Protection Association Standard 56 is the standard established in 2012 for fire and explosion

⁵ CEQA Guidelines, § 15162, subd. (a); Ex. 500, pp. 4.4-1 – 4.4-5.

⁶ Ex. 500, pp. 4.4-1 – 4.4-5.

prevention during cleaning and purging of flammable-gas piping systems. We, therefore, impose Condition of Certification **HAZ-10**, which will require adherence to 2012 NFPA Standard 56.⁷

CHANGES TO CONDITIONS OF CERTIFICATION

The elimination of the solar array eliminates the use of Therminol heat transfer fluid and therefore a Process Safety Management Plan is no longer required. These revisions are reflected in revised Conditions of Certification **HAZ-1**, **HAZ-2**, and the deletion of **HAZ-7**. Condition of Certification **HAZ-4** is revised to include a requirement for the use of plastic balls in the secondary containment area that surrounds the aqueous ammonia storage tank, which will reduce the surface area of an ammonia spill and prevent ammonia vapors from exceeding 75 ppm beyond the fence line. Condition of Certification **HAZ-4** is further revised to reflect the correct updated tank standard (American Society for Material Engineering (ASME) Pressure Vessel Code) and to remove the reference to the American National Standards Institute (ANSI) and American Petroleum Institute (API) standards. Condition of Certification **HAZ-9** is modified to reflect the removal of the solar field and to require full perimeter closed circuit TV, as well as either guards on site 24/7 or staff on site 24/7 with perimeter breach detection, which will conform to the security requirements of the U.S. Department of Homeland Security and the North American Electrical Reliability Corporation. Condition of Certification **HAZ-10** is added to ensure compliance with the new National Fire Protection Association Standard 56.⁸

We find that, with the imposition and implementation of revised Conditions of Certification **HAZ-1** through **HAZ-10**,⁹ the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts related to hazardous materials management.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **HAZARDOUS MATERIALS MANAGEMENT** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based upon the evidence, the Energy Commission makes the following findings:

⁷ Ex. 500, p. 4.4-2.

⁸ See **Appendix A**, pp. A-92 – A-97.

⁹ All conditions of certification are contained in **Appendix A**.

1. The 2011 Decision certifying the Palmdale Hybrid Power Plant found that with the implementation of the conditions of certification the Palmdale Hybrid Power Plant conformed with all applicable laws, ordinances, regulations, and standards and did not have any significant direct, indirect, or cumulative impacts to hazardous materials handling.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines, section 15162, and as described in the **INTRODUCTION** section of this Decision, are present regarding hazardous materials management.
3. Other than the 2012 update to NFPA Standard 56, no new laws, ordinances, regulations, or standards apply to the Palmdale Energy Project amendment.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards relating to hazardous materials management.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to hazardous materials management.

F. WASTE MANAGEMENT

INTRODUCTION

The proposed Palmdale Energy Project¹ (PEP) will generate hazardous and non-hazardous waste during site preparation, construction, and operation. This section reviews the PEP's waste management plans for reducing the potential health risks and environmental impacts associated with handling, storage, and disposal of project-related hazardous and non-hazardous waste.

This topic was uncontested. Evidence on the topic of Waste Management is contained in Exhibits 1, 2, 3, 4, 6, 23, 43, 46, 56, 500, and 508.²

SETTING

For information regarding the setting of the amended project, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please see the **PROJECT DESCRIPTION** section of this Decision.

During construction, the PEP is estimated to produce 43 cubic yards of non-hazardous waste per week. During operations, the PEP is estimated to produce 50 cubic yards of non-hazardous solid waste per year, which is both significantly less construction and operation waste than the 2011 Palmdale Hybrid Power Project (PHPP) was estimated to produce due to the elimination of the solar field.³

The PEP is projected to generate small quantities of hazardous waste. Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control. State law requires hazardous waste generators to obtain U.S. Environmental Protection Agency identification numbers and to contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities.⁴

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 4.13-5—4.13-7.

⁴ Cal. Code Regs., tit. 22, § 66262.10 et seq.

The PEP will also create non-hazardous waste. These wastes are degradable materials that do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or Class III disposal facilities.⁵

SUMMARY OF 2011 DECISION⁶

In the 2011 PHPP Decision (2011 Decision), we reviewed the potential impacts that the PHPP would have related to the handling, storage, transportation, and disposal of hazardous and non-hazardous wastes. In addition, we analyzed the laws, ordinances, regulations, and standards (LORS) applicable to hazardous materials. We concluded that, with the imposition and implementation of Conditions of Certification **WASTE-1** through **WASTE-14**, the PHPP did not pose a significant risk of impacts related to the use or transport of hazardous and non-hazardous waste and was consistent with all relevant LORS.⁷

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines section 15162 are met.

For the currently licensed PHPP, the Energy Commission estimated that during construction and operation, approximately 43 cubic yards of non-hazardous solid waste (e.g., packing materials, wood, cardboard, air filters, cooling tower basin sludge, non-hazardous, heat-transfer fluid contaminated soil, and office waste) would be generated per week, and concluded that amount would not contribute significantly to the local Class III (non-hazardous) landfills.⁸

The Energy Commission also estimated that during construction the PHPP would generate hazardous wastes such as empty hazardous waste material containers and hazardous liquids (e.g., solvents, oil, paint, oily rags, adhesives, chealant-type solutions, and batteries). During routine operations, the PHPP would generate hazardous wastes such as hydraulic fluid/oils/grease, oily filters, oily effluent from water separation systems, oily rags/oil absorbent/oil filters, spent SCR catalyst batteries, and fluorescent light bulbs.⁹

Due to the elimination of the solar field and the replacement of the wet-cooled technology with air-cooling technology, many of the non-hazardous and hazardous wastes that would be created by the PHPP will not be generated by the PEP, such as

⁵ Cal. Code Regs., tit. 14, § 17200 et seq.

⁶ 2011 PHPP Decision (TN 61876).

⁷ 2011 PHPP Decision, pp. 6.6-1 – 6.6-20.

⁸ *Id.*

⁹ *Id.*

heat-transfer fluid contaminated soil (non-hazardous) and cooling tower basin sludge. Staff estimated the amount of hazardous and non-hazardous construction waste generated by the PEP will be significantly less than what was estimated for the PHPP, and also would not significantly impact the local Class I and III landfills.¹⁰ The Energy Commission staff (Staff) concluded that the PEP would not create any new significant impacts related to waste management and previously identified impacts would be reduced in severity. In addition, there would be:

1. No new significant waste management impacts not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.¹¹

Therefore, we find that no supplementation of the environmental analysis contained in the 2011 PHPP Decision is necessary for the PEP's potential direct, indirect, and cumulative impacts related to handling, storage, and disposal of project-related hazardous and non-hazardous wastes.¹²

LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The record indicates that the LORS contained in the 2011 Decision have been unchanged, except for 2016 California Green Building Code, part 11, section 5.408.1.¹³ Section 5.408.1 requires all businesses to recycle and/or salvage for reuse, a minimum of 65 percent of the nonhazardous construction and demolition waste (C&D) or meet a local C&D ordinance, whichever is more stringent.¹⁴

To comply with this new law, Condition of Certification **WASTE-6** has been modified to require the project owner to provide Construction Waste Management Plans (CWMP) to the Compliance Project Manager (CPM) and the city of Palmdale Building and Safety Department.¹⁵

¹⁰ Ex. 500, p. 4.13-8.

¹¹ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a); Ex. 500, pp. 4.13-1; 4.13-10.

¹² TN 213623, pp 4.13-5 through 6.

¹³ The California Green Building Code is contained in the California Code of Regulations, title 24, part 11.

¹⁴ California Code of Regulations, title 24, part 11, chapter 5, division 5.4, section 5.408.1.

¹⁵ Ex. 500, p. 4.13-2.

CHANGES TO CONDITIONS OF CERTIFICATION

A number of conditions of certification are modified or deleted to incorporate changes associated with the PEP and reflect updates in regulatory requirements.

Specifically, Conditions of Certification **WASTE-5**, **WASTE-6**, and **WASTE-10** are modified to reflect changes in the project owner's reporting requirements, and/or remove reference to the PHPP. Condition of Certification **WASTE-9** is no longer required because the City of Palmdale is responsible for waste conservation programs within the city's limits and Condition of Certification **WASTE-6** will ensure compliance with the city's requirements. The Therminol heat transfer fluid and the cooling tower are not a part of the PEP; therefore, Conditions of Certification **WASTE-11** and **WASTE-12**¹⁶ are deleted.

We find that with the imposition and implementation of revised Conditions of Certification **WASTE-1** through **WASTE-8**, **WASTE-10**, **WASTE-13**, and **WASTE-14**, the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts related to waste management.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **WASTE MANAGEMENT** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Plant found that the Palmdale Hybrid Power Plant conformed with all applicable laws, ordinances, regulations, and standards and, that with the implementation of the conditions of certification, the Palmdale Hybrid Power Plant did not have any significant direct, indirect, or cumulative impacts related to handling, storage, and disposal of project-related hazardous and non-hazardous wastes.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines section 15162 described in the **INTRODUCTION** section of this Decision, are present regarding the handling, storage, and disposal of project-related hazardous and non-hazardous wastes.
3. Except for the 2016 California Green Building Code, part 11, section 5.408.1, no new laws, ordinances, regulations, or standards not included in the 2011

¹⁶ **WASTE-11** required a consultation with the California Department of Toxic Substances Control for onsite storage and treatment of heat transfer fluid (HTF) contaminated soils. **WASTE-12** required the testing of zero liquid discharge (ZLD) sludge.

Decision certifying the Palmdale Hybrid Power Plant apply to the Palmdale Energy Project.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to the handling, storage, and disposal of project-related hazardous and non-hazardous wastes.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts relating to the handling, storage, and disposal of project-related hazardous and non-hazardous wastes.

V. ENVIRONMENTAL ASSESSMENT

In this section of the Decision, the Energy Commission considers the potential impacts of project-related activities on resources in the area, including biological resources, soil and water resources, cultural resources, and geological and paleontological resources.

A. BIOLOGICAL RESOURCES

INTRODUCTION

The Energy Commission must consider the potential impacts of the Palmdale Energy Project¹ (PEP) on biological resources, including state and federally listed species, species of special concern, and other resources of critical biological interest, such as wetlands and unique habitats.

This topic was uncontested. Evidence on the topic of Biological Resources is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, 502, 507, 508, and 509.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The proposed project modifications to the approved Palmdale Hybrid Power Project (PHPP) include the elimination of the solar components, which reduces the project footprint from 333 acres to 50 acres, reduction of the construction laydown area from 50 to 20 acres, an 1,800-foot long extension of the 230 kilovolt (kV) transmission line, and three additional transmission line towers along East Avenue M near the project site.³

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PHPP DECISION

The 2011 PHPP Decision (2011 Decision)⁴ reviewed the PHPP's potential to impact state- and federally-listed species, species of special concern, and other resources of critical biological interest. The 2011 Decision included 25 conditions of certification to

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 4.2-1.

⁴ 2011 PHPP Final Decision (TN 61876).

mitigate impacts to biological resources, including impacts to native vegetation, special-status plants, and wildlife and state waters, and to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS). Of note, the 2011 Decision presented the following conclusions:

1. The project's potential significant impacts on the desert tortoise, Mohave ground squirrel, burrowing owl, arroyo toad, Swainson's hawk, Joshua tree woodland, and other common and special-status animal and plant species were reduced to less than significant through impact avoidance and minimization measures included in the conditions of certification;
2. The habitat mitigation strategy of 2:1 ratio for the power plant site and 3:1 ratio for the linear facilities was adequate to compensate for the permanent loss of habitat for Mohave ground squirrel, Swainson's hawk, and desert tortoise caused by construction and operation of the project;
3. The acquisition and maintenance of the Mohave ground squirrel habitat could qualify for all or part of the mitigation for the loss of Swainson's hawk habitat provided that there is a minimum of 2:1 ratio for the Joshua tree woodland associated with loss of project site habitat. Otherwise, adequate compensation acres for the Swainson's hawk habitat was set at a ratio of 2:1 for the project site, transmission line, and agricultural lands. These lands were to be purchased by the project owner in addition to the Mohave ground squirrel compensation acres;
4. The measures specified in the conditions of certification adequately mitigated the potential direct, indirect, and cumulative adverse effects of the PHPP upon biological resources below the level of significance; and
5. With the implementation of the mitigation measures, the PHPP conformed to all applicable LORS governing biological resources.⁵

The 2011 Decision concluded that with the imposition of Conditions of Certification **BIO-1** through **BIO-25**, the PHPP's potential impacts to biological resources were mitigated to a level of less than significant, and the PHPP was in conformity with all LORS.⁶

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis unless the conditions of certification of the

⁵ 2011 PHPP Final Decision, pp. 7.1-35 – 7.1-39.

⁶ 2011 PHPP Final Decision, p. 7.1-34.

California Environmental Quality Act (CEQA) Guidelines section 15162 are met. The evidence establishes that there will be:

1. No new significant impacts to biological resources not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP on biological resources; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁷

Energy Commission staff (Staff) testified that the proposed PEP would have no new impacts to biological resources because any impacts to biological resources are substantially reduced in comparison to the original project, and the conditions of certification for the PHPP would still be applicable (except for the provisions of Condition of Certification **BIO-24** related to the impacts of the solar array). Staff did recommend minor adjustments to the raven management fee, compensatory habitat, and financial security required. Staff concluded that no supplementation to the 2011 Decision is necessary for biological resources and the findings of fact are still applicable to the PEP.⁸

As the lead agency under CEQA, the Energy Commission is required to consider new information that was not known and could not reasonably be obtained at the time of the 2011 Decision, and to propose available mitigation if it determines a significant impact (using the best current information available) could occur. On February 10, 2017, the United States Fish and Wildlife Service (USFWS) informed Staff that after the 2011 Decision was approved, new evidence surfaced that suggests the federally-listed and state-listed endangered Southwestern willow flycatcher and the state-listed endangered willow flycatcher are colliding with transmission lines during migration at night. There is no known deterrent that will prevent these collisions. Instead, there is a standard mitigation ratio of five acres of nesting habitat for every Southwestern willow flycatcher taken. This mitigation was established by the Bureau of Land Management (BLM) in the Desert Renewable Energy Conservation Plan (DRECP). This mitigation requirement

⁷ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162; Ex. 500, pp. 4.2-1, 4.2-12 – 4.2-13.

⁸ Ex. 500, p. 4.2-3.

supports the USFWS's Southwestern willow flycatcher recovery plan described in the Biological Opinion (BO) on the BLM's Land Use Plan Amendment under the DRECP.⁹

Based on the information provided by the USFWS on other transmission projects, Staff concluded that the PEP could have a significant impact on the Southwestern willow flycatcher and willow flycatcher. The willow flycatcher and its subspecies, the Southwestern willow flycatcher, are almost identical, and even experts have difficulty distinguishing between the two. Therefore, Staff recommends adding the willow flycatcher to the list of species impacted by the project.¹⁰

Condition of Certification **BIO-26**¹¹ requires that the project owner apply for an Incidental Take Permit (ITP) or Consistency Determination from the California Department of Fish and Wildlife (CDFW) and provide five acres of nesting habitat per Southwestern willow flycatcher and willow flycatcher death based on the estimated number of Southwestern willow flycatcher/willow flycatcher deaths or injuries during the life of the project (referred to as "take"). According to Staff's testimony, there is no standard statistical method or model to estimate the number of birds that will die from transmission collisions over the life of the project. Relying on CDFW's ITP or Consistency Determination will allow for continued research and monitoring studies to advance and improve the estimated "take" value. Therefore, the parties jointly recommended that Condition of Certification **BIO-24** from the 2011 Decision be retained and modified with language adapted to monitor Southwestern willow flycatcher/willow flycatcher collisions with transmission lines and report deaths of avian species. The findings obtained through implementation of revised Condition of Certification **BIO-24** will require additional mitigation pursuant to Condition of Certification **BIO-26**, which requires the project owner to acquire five acres of compensatory nesting habitat per each Southwestern willow flycatcher/willow flycatcher taken. With the adoption and implementation of Conditions of Certification **BIO-24** and **BIO-26**, as provided in **Appendix A**, the evidence establishes that the PEP's impacts to the Southwestern willow flycatcher and willow flycatcher species will be less than significant.¹²

Vegetation and Wildlife

Staff testified that since the PEP site is within the boundaries of the PHPP site, all the species that were listed in the 2011 Decision are still applicable to the PEP site. Other than the previously discussed Southwestern willow flycatcher/willow flycatcher, Staff did

⁹ Ex. 507, p. 1.

¹⁰ Ex. 507, p. 1.

¹¹ All conditions of certification are contained in **Appendix A** of this Decision.

¹² Exs. 507, p. 2, and 508.

not find any new species with suitable habitat on or near the project site. There was a change to the listing status of Southern mountain (Sierra Madre) yellow-legged frog (*Rana muscosa*) since the adoption of the 2011 Decision. While it still remains listed as federally-endangered, it is now also listed as state-endangered.¹³

It is important to note that the California Native Plant Species (CNPS) and the Global and State Ranks for special-status plant species have been updated, with the CNPS ranking system being renamed as the California Rare Plant Ranks. This new ranking system resulted in slight changes to the status of several plant species. However, this change in the definition and ranking system does not result in additional impacts to special-status plant species or change the conclusions reached in the 2011 Decision.¹⁴

Construction Impacts to Vegetation and Wildlife

The primary modifications to the project relevant to the biological resources analysis are reduction of the power plant site from 333 acres to 50 acres, and reduction of the construction laydown and parking area from 50 acres to 20 acres. The PHPP site was composed of three vegetation communities: Joshua tree woodland, Mojave creosote bush scrub, and rabbitbrush scrub. The proposed change in the site footprint would eliminate the permanent loss of rabbitbrush scrub (33 acres) and significantly reduce the permanent loss of Mojave creosote bush scrub and Joshua tree woodland. Staff has estimated that there will be a permanent loss of 32 acres of Mojave creosote bush scrub and 18 acres of Joshua tree woodland within the PEP site, compared to 116.55 acres and 183.15 acres, respectively, for the PHPP site. The proposed smaller laydown area would result in a permanent loss of 20 acres of Joshua tree woodland instead of 50 acres of rabbitbrush scrub under the licensed project.¹⁵

The three additional transmission poles that would be installed to support the 1,800-foot-long extension of the transmission line along East Avenue M would result in an additional permanent loss of approximately 0.25 acre of Joshua tree woodland habitat.¹⁶

The reduction in the loss of Mojave creosote bush scrub and Joshua tree woodland would reduce the amount of compensatory habitat the project owner would need to acquire for impacts to Swainson's hawk and Mohave ground squirrel. The compensation acreages for the Swainson's hawk and Mohave ground squirrel are based upon the permanent loss of Mojave creosote bush scrub and Joshua tree woodland with the addition of agricultural land for the Swainson's hawk calculated at a

¹³ Ex. 500, p. 4.2-3.

¹⁴ *Id.*

¹⁵ *Id.*

¹⁶ *Id.*

2:1 ratio. The new mitigation requirement for the loss of 50 acres of Mojave creosote bush scrub and Joshua tree woodland on the project site would be 100 acres. In addition, since the PEP's laydown area will now consist of Joshua tree woodland, an additional 20 acres will need to be mitigated. The mitigation requirement (2:1) for the combined project and laydown site totals 140 acres. Adding the 25.25 acres of Mojave creosote bush scrub and Joshua tree woodland, and 10.22 acres of agricultural land along the transmission line at 2:1, would result in the project owner having to acquire a total of 211 acres of compensatory Swainson's hawk habitat.¹⁷

For Mohave ground squirrel, the 2011 Decision established a 2:1 mitigation ratio for the power plant site and a 3:1 mitigation ratio for Mohave ground squirrel habitat along the transmission line segments. With the 0.25 acre of Joshua tree woodland impacted by the proposed extension of the transmission line, the new total of Mohave ground squirrel habitat impacted within the transmission line route would be 25.25 acres. At 3:1, the required compensatory habitat would be 75.75 acres for the transmission line. The project owner would need to acquire a new total of 216 acres of compensatory Mohave ground squirrel habitat.¹⁸

With the reduction in impacts to native vegetation, we have updated impact acreage and raven management fee amounts specified in Condition of Certification **BIO-14**. To mitigate for the regional effects of ravens on desert tortoise, the project owner is required to provide a one-time fee in the amount of \$105.00 per acre of native vegetation impacted to the Renewable Energy Action Team Account held by the National Fish and Wildlife Foundation. The PHPP would have resulted in the loss of 448 acres of native vegetation. The new total of disturbed native vegetation under the PEP would be 135.50 acres (50 acres at the power plant site, 20 acres at the laydown area, and 65.50 acres along the modified transmission line route).¹⁹

Operation Impacts

The 2011 Decision found collisions by birds with the solar troughs to be a potentially significant impact of the PHPP. The elimination of the solar component eliminates this potentially significant impact; therefore, as described above, we have removed references to impacts attributable to the solar array in the language of Condition of Certification **BIO-24**.²⁰

¹⁷ Ex. 500, pp. 4.2-4 – 4.2-5.

¹⁸ Ex. 500, p. 4.2-5.

¹⁹ Ex. 500, p. 4.2-8.

²⁰ *Id.*

The height of the project's two exhaust stacks would increase from 145 feet tall to 160 feet tall. The 2011 Decision concluded that the original project's stacks did not pose a significant collision threat and that determination still stands. The project site is not in a high-risk area for collision. Furthermore, the height threshold of structures that pose a great risk to migratory birds is 500 feet, and avian mortality decreases significantly for structures that are shorter than 350 feet. Even with the increase of 15 feet, the stack height does not fall within the range of concern. Therefore, the PEP's two taller exhaust stacks will not pose a significant collision threat to resident or migratory birds.²¹

CUMULATIVE IMPACTS

The 2011 Decision found that while good quality habitat occurs on the project site and numerous wildlife species utilize the area, the project site is isolated from adjacent natural lands. In addition, while habitat loss is occurring on a regional level, the project site does not have the potential to play a significant role in the conservation of sensitive plants and wildlife in the Antelope Valley. With the exception of Swainson's hawk, which was observed foraging on the site, desert tortoise and Mohave ground squirrel have a low potential to occur on the PEP site. Construction of the transmission line could remove important foraging habitat for wildlife and result in short term impacts to desert washes. However, these impacts would be minimal compared to the large-scale loss of habitat occurring in the region. The Energy Commission found that with the implementation of the conditions of certification, the PHPP's significant adverse impacts on biological resources would be mitigated to insignificant levels and, thus, the project's contribution to direct and indirect cumulative biological impacts would not be cumulatively considerable. The PEP's contribution to cumulative impacts will be substantially less than the PHPP's due to the elimination of the solar component of the PHPP and the correlated reduction in the loss of the Swainson's hawk and Mohave ground squirrel habitat. Therefore, we find that cumulative impacts remain less than significant.²²

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP.²³ The evidence establishes that there have been no changes to the LORS that apply to the PEP, nor are there any LORS inapplicable to the PHPP that would apply to the PEP. The PEP

²¹ Ex. 500, p. 4.2-8.

²² Ex. 500, pp. 4.2-8 – 4.2-9.

²³ Ex. 500, pp. 4.2-35 – 4.2-39.

will continue to comply with the applicable LORS with the implementation of the conditions of certification.²⁴

CHANGES TO CONDITIONS OF CERTIFICATION

Since the 2011 Decision, and as described above, the conditions of certification require updates to account for the mitigation required for the incidental take of Southwestern willow flycatcher and willow flycatcher, as well as corrections to the conditions to reflect the elimination of the solar component and the reduced acreage of the project's footprint.

The loss of Mojave creosote bush scrub and Joshua tree woodland, identified in the 2011 Decision as habitat used to determine the compensation acreage for the Mohave ground squirrel and Swainson's hawk, will be reduced to 32 and 18 acres, respectively. These impact acreages were used to determine that the project owner would need to provide 216 acres of compensatory habitat for the Mohave ground squirrel and 211 acres for the Swainson's hawk to mitigate for the loss of their habitats, compared to 675 acres and 670 acres, respectively, for the PHPP. The extension of the transmission line was evaluated and, besides including the additional 0.25 acre in the compensation acreages for the Mohave ground squirrel and Swainson's hawk, there are no further considerations needed as the project owner does not propose any other changes to the transmission line routes approved in the 2011 Decision. See Conditions of Certification **BIO-17** and **BIO-20**. The parties have jointly updated Conditions of Certification **BIO-14**, **BIO-17**, and **BIO-20** adjusting the amounts of raven management fee, compensatory habitat, and financial security that would be required. In addition, elimination of the solar component would avoid previously identified impacts on avian species from collisions with the solar mirrors. This would remove the possibility of avian and bat deaths due to solar technology, warranting modification of Condition of Certification **BIO-24**. The parties jointly recommended that Condition of Certification **BIO-24** from the 2011 Decision be retained, with language adapted to monitor Southwestern willow flycatcher/willow flycatcher collisions with transmission lines and report deaths of avian species. The findings obtained through implementation of Condition of Certification **BIO-24** will require additional mitigation pursuant to Condition of Certification **BIO-26**, which requires the project owner to acquire five acres of compensatory nesting habitat per each Southwestern willow flycatcher/willow flycatcher taken.²⁵

Like the PHPP, implementation of Conditions of Certification **BIO-1** through **BIO-26** mitigate potential impacts that may occur during construction and operation of the PEP

²⁴ Ex. 500, p. 4.2-2.

²⁵ Exs. 500, p. 4.2-13; 507, pp. 1-4.

to less than significant and ensure compliance with applicable LORS. We have revised the conditions of certification²⁶ to address these changes. As discussed above, we find that none of these proposed modifications result in new significant impacts, substantially increase the severity of previously identified significant impacts, or necessitate any material changes to the biological resource conditions of certification identified in the 2011 Decision to mitigate impacts or to maintain compliance with LORS.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **BIOLOGICAL RESOURCES** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to biological resources.
2. The conditions of certification for the Palmdale Hybrid Power Project would still be applicable except for those that relate to the eliminated solar component of the Palmdale Hybrid Power Project.
3. Revised Condition of Certification **BIO-24** and Condition of Certification **BIO-26** mitigate the Palmdale Energy Project's impacts to the Southwestern willow flycatcher and willow flycatcher species to less than significant.
4. The Palmdale Energy Project does not create any significant direct, indirect, or cumulative environmental effects to biological resources.
5. The new California Rare Plant ranking system resulted in slight changes to the status of several plant species, but did not result in additional impacts to special-status plant species or change the conclusions reached in the 2011 Decision.
6. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines,

²⁶ The conditions of certification for Biological Resources, as well as for all other topics of this Decision, may be found in **Appendix A**.

section 15162, described in the **INTRODUCTION** section of this Decision, is present regarding this topic.

7. No new laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project apply to the Palmdale Energy Project; therefore, it complies with all applicable laws, ordinances, regulations, and standards.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensures that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to biological resources.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative public biological resources.

B. SOIL & WATER RESOURCES

INTRODUCTION

The Energy Commission must consider the potential impacts of project-related activities on soil and water resources, including accelerated wind or water erosion and sedimentation, flood conditions in the vicinity of the project, local water supplies, and wastewater disposal, water quality of surface and groundwater, and compliance with all laws, ordinances, regulations, and standards (LORS). Conditions of certification are proposed to ensure compliance with applicable LORS and to mitigate any potentially significant direct, indirect, or cumulative impacts to less than significant levels.

This topic was uncontested. Evidence on the topic of **SOIL & WATER RESOURCES** is contained in Exhibits 1, 2, 3, 4, 6, 7, 22, 28, 43, 46, 56, 500, 502, and 508.¹

SETTING

For detailed information regarding the setting of the Palmdale Energy Project² (PEP), please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The Petition to Amend the Palmdale Hybrid Power Project (PHPP) includes eliminating the solar energy component, reconfiguring the two-on-one, combined-cycle power block configuration to incorporate new gas turbine technology, and replacing wet-cooling technology with an air-cooled technology.³ With the changes proposed, the PEP project site would be 50 acres and water consumption would be a maximum of 400 acre-feet/year (AFY) of recycled water for process purposes and 3.6 AFY of potable water.⁴

For additional information regarding the design and features of the PEP, including equipment and locations of pipelines, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PALMDALE HYBRID POWER PROJECT (PHPP) DECISION⁵

In the 2011 PHPP Decision (2011 Decision), the Energy Commission analyzed soil and groundwater resources. The estimated construction water demand for the PHPP was

¹ 3/22/17 RT 9:3-11; 12:11-12; 51:1.

² The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

³ Exhibit 500, p. 3-3.

⁴ Exhibit 500, pp. 4.9-6; 4.9-8.

⁵ 2011 PHPP Final Decision (TN 61876).

807 AFY. This water would be secondary-treated recycled water supplied by the Palmdale Water Reclamation Plant. An additional 1,174,116 gallons of tertiary-treated recycled water from Los Angeles County Waterworks District 40 (District 40) would be required during hydrostatic testing of the PHPP piping and vessels.⁶

The primary and backup industrial process water supply source for the approved PHPP would have been tertiary-treated water from the Palmdale and/or Lancaster Water Reclamation Plants via the District 40 regional recycled water pipeline. District 40 and the project owner had a contract for delivery of recycled water to the PHPP for the life of the project. The agreement specified that District 40 would provide the PHPP with 4,121 AFY under maximum operation conditions for cooling water, boiler water makeup, maintenance, landscaping, and mirror washing. An average demand of 3,400 to 3,600 AFY was a reasonable estimate of annual actual demand on recycled water supplies by the licensed PHPP.⁷ The PHPP required a continuous supply of water due to evaporative losses by the PHPP's wet-cooling tower, CTGs, zero liquid discharge (ZLD), and routine solar mirror washing activity.⁸

District 40 would supply potable water for PHPP's operations (e.g., drinking, sanitation needs, etc.) with an annual volume of up to 3.6 acre feet. District 40 obtains potable water from the State Water Project (California Aqueduct), surface water from the Little Rock Reservoir, and groundwater from the Antelope Valley Ground Basin (AVGB) via 36 groundwater wells. The 2011 Decision concluded that there was sufficient water to serve the PHPP and that the impacts of obtaining the water from the identified sources and under various conditions, including sustained periods of drought, would have no significant impacts.⁹

The 2011 Decision examined the PHPP's impacts to the wastewater stream, stormwater impacts, and use of water for dust suppression during road paving. These impacts were mitigated to less than significant levels through best management practices (BMPs) and conditions of certification.¹⁰

The 2011 Decision contains the Energy Commission's review of the above issues, as well as other potential direct, indirect, and cumulative impacts that the PHPP may have related to soil and water resources. The 2011 Decision concluded that, with the imposition and implementation of conditions of certification, the PHPP did not pose a

⁶ 2011 PHPP Final Decision, pp. 7.2-3 – 7.2-4.

⁷ Ex. 500, p. 4.9-16.

⁸ 2011 PHPP Final Decision, pp. 7.2-5 – 7.2-6.

⁹ 2011 PHPP Final Decision, pp. 7.2-4 – 7.2-8.

¹⁰ 2011 PHPP Final Decision, pp. 7.2-9 – 7.14.

significant risk of direct, indirect, or cumulative impacts related to soil and water resources, and was consistent with all applicable LORS.¹¹

ENVIRONMENTAL ANALYSIS

Soil Erosion and Water Quality

Due to the elimination of the solar energy portion and the redesigned project layout, the power plant footprint and volume of soil grading required to build the PEP is substantially less than what would be required for the PHPP. Construction of the generation-tie line from the PEP to the Southern California Edison Vincent Substation would use essentially the same route as for the PHPP, with the exception of the 1,800-foot generation tie-line extension along East Avenue M.

Soil resources and water quality will be protected from significant adverse impacts using BMPs as required under existing conditions of certification and LORS. The Lahontan Regional Water Quality Control Board (RWQCB) recommends using a low-impact development approach to slow and filter runoff and maximize groundwater recharge. This includes: (1) keeping vegetation clearing and grading to a minimum to maintain natural drainage paths and landscape features; (2) managing runoff as close to the source as possible; and (3) maintaining vegetated areas for storm-water management and on-site filtration.¹² Therefore, construction of the PEP and its generation tie-line will have less than significant impacts on waters of the United States.¹³

Water Use and Supply

The PEP proposes to use recycled water supplied by the City of Palmdale during project construction and after the plant is built for industrial processes. Potable water would be supplied by District 40 for drinking and sanitation use during plant operation. Substantial recycled water use reductions in the PEP compared to the PHPP are the result of the power plant redesign (changing from wet-cooled technology to air-cooled technology), a smaller project footprint, and a reduced volume of grading. A comparison of the water demand between the PHPP and the PEP for construction and operation is presented below in **Soil and Water Table 1**.¹⁴

¹¹ Ex. 500, p. 4.9-2.

¹² Ex. 500, p. 4.9-7.

¹³ *Id.*

¹⁴ Ex. 500, p. 4.9-8.

Soil and Water Table 1
Summary of Water Demand between the PHPP and the PEP

Water Use	Estimated Water Demand		Water Supplier	Water Supply Type
	PHPP	PEP		
Construction (total)	807 af*	<100 af	City of Palmdale	Recycled
Hydrostatic Testing (total)	3.7 af	<3.7 af	City of Palmdale	Recycled
Operation -Drinking & Sanitation (maximum annual)	3.6 af	3.6 af	District 40	Potable
Operation - Industrial Processes (maximum annual)	4,121 af	400 af	City of Palmdale	Recycled

*af=acre feet

Source: Ex. 500, p. 4.9-8.

Operation of the PEP will include two cooling systems: a steam-cycle, heat-rejection system (e.g., air-cooled condenser), and a lube-oil cooling system (equipment cooling). Replacement of the PHPP wet-cooling tower with an air-cooled condenser (ACC) substantially reduces operation water demand. Operation drinking and sanitation water demand (potable water) is essentially the same between the PEP and the PHPP.¹⁵

Energy Commission staff (Staff) testified that a water supply assessment (WSA) for the PEP recycled water supply had been completed in the *Recycled Water Facilities Master Plan* by the Palmdale Recycled Water Authority. Nevertheless, Staff provided an independent assessment of the recycled water supply considering three water supply scenarios: normal water year; single-dry water year; and multiple-dry water years. These scenarios are defined as follows:

- Normal Year: A year in the historical sequence that most closely represents median runoff levels and patterns. The supply quantities for this condition are derived from historical average yields;
- Single-Dry Year: The year with the minimum useable supply. The supply quantities for this condition are derived from the minimum historical annual yield; and
- Multiple-Dry Years: Three consecutive years with the minimum cumulative useable supply. Water systems are more vulnerable to these droughts of longer duration because they deplete water storage reserves in local and state reservoirs, and in

¹⁵ Ex. 500, p. 4.9-8.

groundwater basins. The supply quantities for this condition are derived from historical three-year running minimum average yields.¹⁶

Potable Water Supply

Similar to the PHPP, the project owner proposes to use 3.6 AFY of potable water provided by District 40 for drinking and sanitation uses. The AVGB, in which the PEP is located, became adjudicated December 15, 2015.¹⁷ Staff asserts that the PEP was not part of the adjudication and has no water rights in the AVGB and that District 40 currently does not have sufficient potable water to supply the PEP, other than on a temporary basis. According to Staff, District 40 has to acquire and import additional water supplies and rely on banked groundwater during dry years to meet demands associated with the level of growth projected for the District 40 service area.¹⁸

To acquire additional new water supplies, District 40 entered into a Memorandum of Understanding (MOU) with the Antelope Valley East Kern Water Agency (AVEK) to implement a New Water Supply Entitlement Acquisition program. The program is for new developments and allows District 40 to acquire new water from AVEK through acquisition of new permanent water rights and/or new state water project (SWP) supply entitlements. The program is part of the 2015 District 40 Urban Water Management Plan and has the following requirements for obtaining a will-serve letter from District 40:

- Developers may secure entitlements by entering into an agreement with District 40 to purchase a permanent water supply;
- The volume of new water supply needed to serve a project is determined by District 40 based on a review of the water demand calculations submitted by developers; and
- The developers must pay a \$10,000 per acre-foot deposit.¹⁹

After receipt of the deposit, District 40 transfers it to AVEK to acquire the new water supply, which would be allocated to District 40. The MOU also includes a provision requiring completion of CEQA analysis for transfer of any new water supply for District 40. According to Staff, the PEP would be required to pay \$36,000 for the proposed 3.6 AFY of potable water²⁰ in the event that District 40 does not recognize Palmdale Energy, LLC's previous payment for potable water as a binding right to potable water.

¹⁶ Ex. 500, p. 4.9-9.

¹⁷ *Antelope Valley Groundwater Cases*, JCCP No. 4408, Calif. Superior and Los Angeles Co.

¹⁸ Ex. 500, pp. 4.9-9 – 4.9-10.

¹⁹ Ex. 500, p. 4.9-10.

²⁰ Exs. 56, pp. 37-39; 500, p 4.9-10.

The evidence establishes that the District 40 water demand remains constant under all planning scenarios. When there is a SWP water shortage, AVEK distributes and apportions its SWP water first to each county based on the running average of taxes paid to AVEK by entities within each county. Entities within Los Angeles County have the highest running average taxes paid to AVEK, and District 40 has the highest percentage of SWP received. The evidence shows that since the PEP is in the District 40 service area, this could enhance the availability and reliability of potable water supply for the PEP. However, since AVEK will fill customer orders for SWP water for consumptive and agricultural uses before orders for banking or storage purposes; this could affect the availability of surplus supplies for banking and use for projects such as the PEP.²¹

District 40 has assured the PEP owners that there would not be any service interruption from the time the will-serve letter deposit is paid to the time AVEK secures a permanent water supply. To ensure uninterrupted service to projects such as the PEP, District 40 would temporarily draw from water set aside for specific planned projects as listed in the 2015 District 40 Urban Water Management Plan (UWMP). Water set aside for these planned projects ranges from 9,920 acre-feet to 14,490 acre-feet over a planning period from 2015 to 2035. This water would be used until AVEK acquires a permanent supply of SWP Table A water (the maximum amount a State Water Project Contractor can receive). Staff testified that, at some point during the project life, the reliability of the water supply could be compromised, in which case a backup supply would be needed (an amendment to their Energy Commission license would be required).²²

The evidence shows that the amount of the potable water supply will not cause a significant adverse environmental impact or adversely affect current or future users of potable water. Further, the New Water Supply Entitlement Acquisition program is specifically designed to obtain supplies for projects to be built in the adjudicated AVGB and not impact other users. The program is not a guarantee that the PEP will receive potable water supply for the life of operation. Therefore, there remains a question of plant reliability given the speculation over whether sufficient permanent supplies for the New Water Supply Entitlement Acquisition Program can be obtained to sustain the PEP and other new projects. The project owner has not proposed a backup supply for its potable water needs. However, preliminary information from the District 40 UWMP demonstrates that District 40 and AVEK have significant water supply in storage and a

²¹ Ex. 500, p. 4.9-11.

²² Ex. 500, p. 4.9-13.

reasonable plan for managing supplies during dry years, which allows them to assure delivery of the proposed supply.²³

To ensure that a reliable potable water supply for drinking and sanitation purposes is in place prior to construction, we are modifying Condition of Certification **SOIL&WATER-4**. This condition of certification requires the project owner to submit to the Energy Commission's Compliance Project Manager, a valid water supply agreement prior to construction. This condition also ensures that the potable water supply complies with local requirements and does not impact other uses.

Recycled Water Supply

Similar to the PHPP, the PEP project owner proposes to use recycled water for construction and industrial supply. The wholesale source of recycled water would be either the Los Angeles County Sanitation District's (LACSD) Palmdale Water Reclamation Plant (PWRP) or the Antelope Wastewater Treatment Plant (AWWTP), depending on the delivery option chosen. The recycled water supply retailer for the PEP will be the City of Palmdale instead of District 40 as originally licensed.²⁴

In addition to the reserve volume of recycled water provided by on-site tank storage, the PEP will have a backup water source in the event of a more extended outage in the PWRP supply system. This backup source will also be recycled water using a planned regional recycled water backbone system linking the PWRP with the AWWTP, which would allow the AWWTP to provide recycled water to the PEP.²⁵

Tertiary-treated recycled water is available from both the PWRP and AWWTP for wholesale purchase and resale. Access to the recycled water supply is controlled by contract with LACSD. Purchasers of this recycled water include the Palmdale Recycled Water Authority and the City of Palmdale. The City of Palmdale, which would supply recycled water to the PEP, has an agreement with LACSD to purchase up to 2,000 AFY. The PEP and the City of Palmdale have made an agreement to allow the PEP to purchase up to 400 AFY of recycled water for a period of not less than 23 years, beginning in 2018, with the option for two 10-year extensions beyond the initial 23-year period. The evidence establishes that this would be adequate to ensure delivery of recycled water for the life of the project.²⁶

Recycled water supplies are often referred to as a drought-proof supply because supplies are generally constant year-round and less affected by droughts. In their

²³ Ex. 500, p. 4.9-14.

²⁴ *Id.*

²⁵ *Id.*

²⁶ Ex. 500, p. 4.9-15.

regional planning documents, both the Palmdale Water District (PWD) and District 40 expect their recycled water supply to remain constant during single-dry and multiple-dry years. Both water retailers receive their recycled water supply from the same wholesaler (LACSD) that supplies recycled water to the City of Palmdale.²⁷ Based on the PWD and District 40 regional planning documents, we find that the recycled water supply from PWRP and AWWTP will be unaffected during normal, single-dry, and multiple-dry years. This, in turn, means the supply of recycled water to the City of Palmdale for delivery would be unaffected.²⁸

The record shows that the project with one of the greatest projected recycled water demand in the project area is the PHPP, with a projected average demand ranging from 3,400 to 3,600 AFY.²⁹ The PEP demand significantly reduces projected demand for construction to less than 100 AFY and during operations to 400 AFY. Therefore, the projected demand from a project at the PHPP/PEP site will be overestimated by the local water agencies if the PEP is built and operated.³⁰

Projected recycled water supply far exceeds projected demand. To increase access to recycled water, the recycled water distribution system is being expanded to reach more areas in the cities of Palmdale and Lancaster. In addition, rights to groundwater in the AVGB have been adjudicated and future access to freshwater supplies is expected to diminish. As a result, demand for recycled water is expected to increase. At the same time, population is expected to grow and, therefore, the supply of recycled water would increase. Both the PWRP and AWWTRP have capacity for tertiary treatment of this increased supply.³¹

If the PEP is built, approximately 3,721 AFY of additional recycled water would be available for operational purposes due to the difference between the PEP water demand and the PHPP. In addition, the LACSD PWRP and AWWTP produce much more recycled water than can be used. At PWRP, recycled water storage reservoirs and conveyance facilities have been constructed and are in use, but excess water is still produced.³²

The record shows that there is a significant excess supply of recycled water for the foreseeable future and the project demand would not impact other users. In addition,

²⁷ Ex. 500, p. 4.9-15.

²⁸ *Id.*

²⁹ PHPP licensed maximum recycled water demand is 4,121 AFY for cooling water, boiler water makeup, maintenance, landscaping and mirror washing. An average demand of 3,400 to 3,600 AFY was a reasonable estimate of annual actual demand on recycled water supplies by the licensed PHPP.

³⁰ Ex. 500, p. 4.9-16.

³¹ Ex. 500, p. 4.9-17.

³² *Id.*

the reduced demand of the PEP for recycled water would make a significant volume available for other future uses.³³ We find that there is a sufficient recycled water supply to meet demand during normal, single-dry, and multiple-dry water years and meet the recycled water requirements of the PEP over its projected life.³⁴

Water Delivery

The recycled water supply pipeline from either the LACSD PWRP or AWWTP to the PEP is not complete. A distribution pipeline from one or both of these treatment plants to the PEP is planned and is expected to be complete by the 18th month of the PEP construction. A pipeline connection between the two treatment plants is also planned.³⁵

To ensure recycled water supply to the PEP during construction, the project owner has identified two options for recycled water delivery:

- Trucking recycled water from the PWRP to the PEP, similar to the PHPP; and
- Trucking recycled water from the existing recycled water distribution pipeline terminus at Sierra Highway and East Avenue M to the PEP. This option would make recycled water available closer to the project site.³⁶

The recycled water supply pipeline for delivery during project operation would connect to the PEP by one of two routes:

- Construction of a 7.4-mile distribution pipeline for recycled water. This pipeline would connect the PWRP and AWWTP at the existing pipeline terminus at Sierra Highway and East Avenue M, similar to what was considered in the 2011 Decision. From the existing pipeline terminus, the pipeline would extend along East Avenue M to the PEP. If this option were chosen, then the proposed backup supply described by the project owner would be available; and
- Construction of a 1.15-mile pipeline extending the existing pipeline from the pipeline terminus at Sierra Highway and East Avenue M to the PEP from the AWWTP, which was not considered in the PHPP. Construction of this option would be much shorter than the option above. If this option is chosen, there does not appear to be access to a backup supply proposed by the project owner.³⁷

We impose Condition of Certification **SOIL&WATER-5** to ensure reporting of potable and recycled water use from project construction and operation. If recycled water is

³³ Ex. 500, p. 4.9-17.

³⁴ *Id.*

³⁵ Ex. 500, p. 4.9-18.

³⁶ *Id.*

³⁷ *Id.*

trucked to the PEP, we will require daily logs to record the number of trucks delivering recycled water to the PEP and the volume of water delivered by each truck. (See the **TRAFFIC AND TRANSPORTATION** section of this Decision regarding water delivery trucks' impacts and mitigation).

During the PEP construction, drinking water would come from bottled water. During the PEP operation, the PEP would obtain drinking and sanitation water from service waterlines provided by District 40.³⁸

Wastewater Management

Construction

The PEP will provide portable sanitation facilities during construction. These would be managed by a contractor that would ensure appropriate off-site disposal of waste.³⁹

The PEP will still require hydrostatic testing for construction similar to the PHPP. Condition of Certification **SOIL&WATER-6** ensures discharge of hydrostatic test waters do not result in water quality or other environmental impacts.⁴⁰

Operation

Instead of processing wastewater through a ZLD, the PEP proposes discharging sanitary and industrial wastewater off site into the city of Palmdale sewer system. The wastewater would be discharged through a newly constructed 18-inch sewer pipeline that would run along the south side of East Avenue M. The PEP proposes connecting to this sewer pipeline at a point adjacent to the proposed PEP access road, approximately 0.25 miles north of the plant site. The PEP's wastewater will be recycled at the PWRP.⁴¹

The estimated average volume of the PEP wastewater that would be produced and disposed of through the sewer system is 220 AFY. The LACSD has provided a will-serve letter for accepting the proposed volume and quality of wastewater.⁴²

Condition of Certification **SOIL&WATER-8** requires the project owner to recycle and reuse all process wastewater streams to the extent practicable. To ensure the project owner complies with the requirements of LACSD disposal of sanitary and operation wastewater to the sewer and the necessary connections, Condition of Certification **SOIL&WATER-9** will remain unchanged.

CUMULATIVE IMPACTS AND MITIGATION

³⁸ Ex. 500, p. 4.9-18.

³⁹ Ex. 500, p. 4.9-19.

⁴⁰ *Id.*

⁴¹ *Id.*

⁴² *Id.*

A project would result in a significant adverse cumulative impact if its effects were 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 of other current projects, and the effects of probable future projects. 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.

The evidence establishes that there are no new cumulative impacts to soil and water that were not considered in the 2011 Decision.⁴³

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

Soil and Water Table 2 contains the federal, state, and local environmental LORS that apply to the PEP.

**Soil and Water Table 2
Laws, Ordinances, Regulations, and Standards**

Applicable Law	Description
Federal	
Clean Water Act (CWA) (33 U.S.C. § 1257 et seq.)	<p>Requires states to set standards to protect water quality, which includes regulation of storm water and wastewater discharges during construction and operation of a facility. California established its regulations to comply with the CWA under the Porter-Cologne Water Quality Control Act.</p> <p>Section 401 of the CWA establishes protection of wetlands and Section 404 establishes protection of navigable waters of the U.S. from discharges of dredge and fill material. Navigable waters can include perennial and ephemeral drainages, streams, washes, ponds, pools, and wetlands. If a discharge would impact navigable waters, then the impacts need to be quantified and mitigated. Section 401 is administered by the states, and in California, through the State Water Resources Control Board/Regional Water Quality Control Boards (SWRCB/RWQCBs). The RWQCB maintains the quality of the State's water by protecting the function and value of its use. Section 404 is administered and enforced by the U.S. EPA and Army Corps of Engineers (ACOE). Individual permit decisions and jurisdiction determinations are made by the ACOE.</p>
State	
California Constitution, article X, § 2	Requires that the water resources of the State be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use or unreasonable method of use of water is prohibited.
California Water Code	States that a wastewater treatment plant holds exclusive right to the water

⁴³ Ex. 500, p. 4.9-19.

sections 1210-1212	discharged to the water treatment and collection system. However, section 1210 does not mean that the wastewater treatment plant holds the exclusive right to effluent leaving the treatment plant, because downstream rights may develop that are dependent on that effluent. Section 1211 requires a permit from the SWRCB prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater, but only if the treated water is discharged to a watercourse and instream or riparian habitat could be adversely affected. Section 1212 requires discharge flows to be maintained when the flow to a watercourse is intended to maintain or enhance instream beneficial uses (such as fishery, wildlife, or recreation).
The Porter-Cologne Water Quality Control Act of 1967, Water Code § 13000 et seq.	Requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect state waters. Those regulations require that the RWQCBs issue waste discharge requirements (WDRs) specifying conditions for protection of water quality as applicable. Section 13000 also states that the State must be prepared to exercise its full power and jurisdiction to protect the quality of the waters of the State from degradation. Although Water Code 13000 et seq. is applicable in its entirety, the following specific sections are included as examples of applicable sections.
California Water Code sections 13240-13243, & Water Quality Control Plan for the Lahontan Region (Basin Plan)	Establishes water quality objectives that protect the beneficial uses of surface water and groundwater in the Lahontan Region. The Basin Plan describes implementation plans and other control measures designed to ensure compliance with statewide plans and policies and provides comprehensive water quality planning. The following chapters are applicable to determining appropriate control measures and cleanup levels to protect beneficial uses and to meet the water quality objectives: Chapter 2, Present and Potential Beneficial Uses; Chapter 3, Water Quality Objectives, and the sections of Chapter 4, Implementation, entitled "Requirements for Site Investigation and Remediation," "Cleanup Levels," "Risk Assessment," "Stormwater Problems and Control Measures," Erosion and Sedimentation," "Solid and Liquid Waste Disposal to Land," and "Groundwater Protection and Management."
California Water Code § 13260	Requires filing, with the appropriate RWQCB, a report of waste discharge that could affect the water quality of the state unless the requirement is waived pursuant to Water Code section 13269.
California Water Code § 13523	If a RWQCB determines that it is necessary to protect public health, safety, or welfare, the RWQCB may prescribe water reclamation requirements for water which is or proposed to be used as recycled water.
California Water Code §13550	States that the use of potable domestic water for non-potable uses, including, but not limited to, industrial and irrigation uses, is a waste or an unreasonable use of the water within the meaning of section 2 of article X of the California Constitution if recycled water is available, which meets all of the following conditions: <ol style="list-style-type: none"> 1. The source of recycled water is of adequate quality for the proposed use and is available for this use; 2. The recycled water may be furnished for these uses at a reasonable cost to the user; 3. After concurrence with the State Department of Health Services, the use of recycled water from the proposed source would not be detrimental to public health; and 4. The use of recycled water for the proposed use would not adversely affect downstream water rights, would not degrade water quality, and is determined not to be injurious to plant life, fish, and wildlife.
California Water Code § 13551	Requires that water resources of the State be put to the highest possible beneficial use, and that waste or unreasonable use or unreasonable method of use of water

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	be prevented. This section also requires the conservation of water in a manner that is reasonable and for a beneficial use that is in the interest of the people and for the public welfare.
California Water Code § 13552.6	Specifically identifies the use of potable domestic water for industrial cooling towers as a waste or unreasonable use of water if suitable recycled water is available. The availability of recycled water is determined by the SWRCB based on criteria listed in section 13550 of the Water Code.
California Water Code § 13552.8	States that any public agency may require the use of recycled water in cooling towers if recycled water is available, meets the requirements set forth in section 13550, that there would be no adverse impacts to any existing water right and that if public exposure to cooling tower mist is possible, appropriate mitigation or control is provided.
Water Recycling Act of 1991 (Water Code §13575 et. seq.)	States that retail water suppliers, recycled water producers, and wholesalers should promote the substitution of recycled water for potable and imported water in order to maximize the appropriate cost-effective use of recycled water in California.
California Code of Regulations, title 17, Division 1, chapter 5, group 4, articles 1 and 2	Addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines.
California Code of Regulations, title 22, division 4, chapter 3, article 1	Specifies the use of recycled water for dust control must be disinfected to at least a secondary-23 level. This article also requires that recycled water used for industrial or commercial cooling or air conditioning that involves the use of a cooling tower, evaporative condenser, spraying or any mechanism that creates mist shall be disinfected tertiary recycled water.
California Code of Regulations, title 23, division 3, chapter 15	Applies to waste discharges to land and requires the RWQCB issue WDRs specifying conditions for protection of water quality as applicable.
Regional Water Quality Control Board Waste Discharge and Waste Reclamation Permits	Requires obtaining a new or modifying an existing WDRs Permit and a Wastewater Reclamation Permit to reuse effluent from wastewater treatment plants for industrial cooling.
State Water Resources Control Board (SWRCB) Order No. 2010-0014-DWQ	The SWRCB regulates storm water discharges associated with construction affecting areas greater than or equal to 1 acre to protect state waters. Under Order 2009-0009-DWQ, the SWRCB has issued a National Pollutant Discharge Elimination System (NPDES) General Permit for storm water discharges associated with construction activity. Projects can qualify under this permit if specific criteria are met and an acceptable Storm Water Pollution Prevention Plan (SWPPP) is prepared and implemented after notifying the SWRCB with a Notice of Intent.
SWRCB Order No. 2014-0057-DWQ	The SWRCB regulates storm water discharges associated with several types of facilities, including steam electric generating facilities. Under Order No. 2014-0057-DWQ, the SWRCB has issued a NPDES General Permit for storm water discharges associated with industrial activity. Projects can qualify under this permit if specific criteria are met and an acceptable SWPPP is prepared and implemented after notifying the SWRCB with a Notice of Intent.
SWRCB2003-003-DWQ	This general permit applies to the discharge of water to land that has a low threat to water quality. Categories of low threat discharges include piping hydrostatic test water.
Local	
County of Los Angeles Sanitation Districts No.14	Establishes the requirements for industrial wastewater sewer construction and use, the imposition of fees and charges, the implementation of federal and state

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and No. 20 – Wastewater Ordinance	pollution control regulations and other methods to control and regulate the discharge of wastewater.
Los Angeles County Code title 12 (Environmental Protection), chapter 12.80 (Storm Water and Runoff Pollution Control)	Protects the health and safety of the residents of LA County by protecting the beneficial uses, marine habitats, and ecosystems of receiving waters within the county from pollutants carried by storm water and non-storm water discharges and to enhance and protect the water quality of the receiving waters of the county and the United States.
Los Angeles County Code title 11 (Health and Safety), chapter 11.38, part 2 (Water and Wells)	Provides requirements for protection of water quality for domestic water supplies.
Los Angeles County Code title 11 (Health and Safety), chapter 11.38, part 3 (Sanitation, Sewage Disposal and Industrial Waste)	Specifies requirements for sewage and industrial waste disposal systems.
City of Palmdale Storm Water Management Plan Ordinance	Requires a storm water management plan for grading activities occurring between October 1 and April 15
City of Palmdale Water-Efficient Landscape Ordinance	As a condition of approval for any development proposal, landscape plans must be submitted to the City Planning Department. The landscape plan must be scored according to water efficiency criteria and must achieve a minimum score in order to be approved.
City of Palmdale Floodplain Management Ordinance	A floodplain development permit must be obtained before construction or development begins within a Special Flood Hazard Area.
City of Palmdale Building Code	The City of Palmdale requires a grading permit for earth moving activities exceeding 3 feet in depth or 20 cubic yards in volume.
State and Local Policies and Guidance	
Integrated Energy Policy Report (Public Resources Code, div. 15, § 25300 et seq.)	In the 2003 Integrated Energy Policy Report (IEPR), consistent with SWRCB Policy 75-58 and the Warren-Alquist Act, the Energy Commission outlines the state policy with regards to water use by power plants, stating that the Energy Commission would approve the use of fresh water for cooling purposes only where alternative water supply sources and alternative cooling technologies are shown to be “environmentally undesirable” or “economically unsound.”
SWRCB Resolution 2009-0011 (Recycled Water Policy)	Supports and promotes the use of recycled water as a means to achieve sustainable local water supplies and reduction of greenhouse gases. This policy encourages the beneficial use of recycled water over disposal of recycled water. This policy states the following recycled water use goals: <ul style="list-style-type: none"> • “Increase the use of recycled water over 2002 levels by at least one million acre-feet per year (AF/y) by 2020 and by at least two million AF/y by 2030; • Increase the use of storm water over use in 2007 by at least 500,000 AF/y by 2020 and by at least one million AF/y by 2030; • Increase the amount of water conserved in urban and industrial uses by comparison to 2007 by at least 20 percent by 2020; and • Included in these goals is the substitution of as much recycled water for potable water as possible by 2030.”
SWRCB Statement of Policy with Respect to Maintaining High Quality Waters in CA / Resolution No. 68-16	The “Anti-degradation Policy” mandates that: existing high quality waters of the State are maintained until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial uses, and will not result in waste quality

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	less than adopted policies; and requires that any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters, must meet WDRs which will result in the best practicable treatment or control of the discharge necessary to assure that a pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the State will be maintained.
SWRCB Resolution No. 75-58	The principal policy of the SWRCB that addresses siting of energy facilities is the Water Quality Control Policy on the <i>Use and Disposal of Inland Waters Used for Power Plant Cooling</i> , adopted by the Board on June 19, 1976, by Resolution 75-58. This policy states that use of fresh inland waters should only be used for cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound.
SWRCB Resolution 77-1	Encourages and promotes recycled water use for non-potable purposes and use of recycled water to supplement existing surface and groundwater supplies.
SWRCB Resolution No. 2005-0006	Adopts the concept of sustainability as a core value for SWRCB programs and directs its incorporation in all future policies, guidelines, and regulatory actions.
Los Angeles County General Plan	Describes the policies, goals, and implementation measures for water resources, flood and erosion control, and storm water protection within Los Angeles County.

CHANGES TO CONDITIONS OF CERTIFICATION⁴⁴

In order to provide clarification, the parties agreed to minor, non-substantive changes to the conditions of certification imposed by the 2011 Decision, that refer to the project owner.⁴⁵

Condition of Certification **SOIL&WATER-2** has been modified to require compliance with the updated General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWQ, as Modified by 2010-0014-DWQ, NPDES No. CAS000002. Updated Order No. 2009-0009-DWQ also contains requirements to protect water quality and minimize soil erosion during construction of linear underground/overhead projects, such as the transmission generation tie-line. Also, Condition of Certification **BIO-10** requires the 20-acre project laydown area to be restored and re-vegetated with native grass and subshrub species. Re-vegetation of the laydown area would minimize soil erosion and reduce potential water and air quality impacts as recommended by the RWQCB. No additional mitigation would be necessary for protection of soil and water quality related to soil erosion and storm water discharges.

⁴⁴ All conditions of certification are contained in **Appendix A**.

⁴⁵ Ex. 508.

Conditions of Certification **SOIL&WATER-3** and **SOIL&WATER-4** account for the upgrades to the LACSD recycled water treatment plants to tertiary-treated recycled water and identify the new recycled water supplier (the City of Palmdale).⁴⁶

To ensure that the PEP will obtain a potable water supply in accordance with the local requirements and not impact other users, we modify Condition of Certification **SOIL&WATER-4** to require a valid water supply agreement between PEP and District 40 for PEP's potable water needs demonstrating that the necessary fees are paid and District 40 is committed to delivery of potable water by the start of the project construction date. We find that the amount of the potable water needed for the PEP will not cause a significant adverse environmental impact or adversely affect current or future users of potable water.

Condition of Certification **SOIL&WATER-5** has been modified to ensure reporting of potable and recycled water use from project construction and operation. If recycled water is trucked to the PEP, Condition of Certification **SOIL&WATER-5** requires daily logs to record the number of truck trips for delivering recycled water to the PEP and the volume of water delivered by each truck.⁴⁷

The PEP redesign eliminated the PHPP ZLD system for industrial wastewater. Because a ZLD will no longer be required, Condition of Certification **SOIL&WATER-7**, which contains requirements related to operation of the ZLD, is deleted.⁴⁸ Condition of Certification **SOIL&WATER-10**, which is duplicative of Condition of Certification **SOIL&WATER-2**, is deleted. Condition of Certification **SOIL&WATER-11**, which is duplicative of Condition of Certification **GEN-1**, is also deleted.

We find that none of the proposed modifications to the project's conditions result in new significant impacts, substantially increase the severity of previously identified significant impacts, or necessitate any material changes to the conditions of certification for soil and water resources identified in the 2011 Decision to mitigate impacts or to maintain compliance with LORS.

With the imposition and implementation of revised Conditions of Certification **SOIL&WATER-1** through **SOIL&WATER 9**, we find that similar to the PHPP, the PEP will comply with all applicable LORS and will not have significant, unmitigated direct, indirect, or cumulative impacts on **SOIL AND WATER RESOURCES**.

⁴⁶ Ex. 500, p. 4.9-17.

⁴⁷ Ex. 500, pp. 4.9-17 – 4.9-18.

⁴⁸ Ex. 500, p. 4.9-19.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **SOIL AND WATER RESOURCES** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision found that the 2011 Palmdale Hybrid Power Project conforms with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to soil and water resources.
2. New information and changed circumstances necessitated this revised soil and water analysis.
3. The Palmdale Energy Project record analyzes all new laws, ordinances, regulations, and standards not included in the 2011 Decision that would apply to the Palmdale Energy Project.
4. The recycled water demand for construction activities will be reduced from an estimated 807 acre-feet for the Palmdale Hybrid Power Project to less than 100 acre-feet for the Palmdale Energy Project.
5. The maximum recycled water demand for operations will be reduced from the Palmdale Hybrid Power Project licensed recycled water volume of 4,121 acre feet per year to the Palmdale Energy Project estimate of 400 acre feet per year.
6. The water purchase agreement between Palmdale Energy Project and the City of Palmdale is adequate to ensure delivery of recycled water for operational purposes for the life of the project.
7. There are no new cumulative impacts to soil and water that were not considered in the 2011 Decision.
8. The Palmdale Energy Project does not create any significant direct, indirect, or cumulative environmental effects to soil and water resources.

CONCLUSIONS OF LAW

1. Imposition and implementation of the mitigation measures contained in the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to soil and water resources.

2. Imposition and implementation of the mitigation measures contained in the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative effects relating to soil and water resources.

C. CULTURAL RESOURCES

INTRODUCTION

The Energy Commission must consider the potential impacts of the Palmdale Energy Project¹ (PEP) on cultural resources, such as prehistoric and historic archaeological sites, buildings, structures, objects, and historic districts.

This topic was uncontested. Evidence on the topic of Cultural Resources is contained in Exhibits 1, 2, 3, 4, 6, 22, 43, 46, 56, 500, and 508.²

SETTING

The prehistoric and ethnographic Project Area of Analysis (PAA)³ is minimally defined as the project site footprint with a buffer of 200 feet and the project linear facilities routes with 50 feet to either side of the routes. No ethnographic resources were identified in the PAA. Further, no sacred lands files with the Native American Heritage Commission (NAHC) were identified within a one-half-mile radius of the PEP.⁴

The PAA for built-environment resources is defined as a one-mile radius surrounding the PEP site's reduced footprint. The PAA for the PEP linears is defined as one-half mile radius from the centerline of the linear corridor.⁵

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The proposed modifications to the 2011 Palmdale Hybrid Power Project (PHPP) that are relevant to the cultural resources impact analysis include:

- Elimination of the solar field and consequent reduction in the project footprint from 333 acres to 50 acres plus a 20-acre construction laydown area;
- Addition of three transmission towers along East Avenue M;
- Relocation of the transmission line at the site access road;

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Pub. Resources Code, § 21084.1.

⁴ Ex. 500, p. 4.3-3.

⁵ Ex. 500, p. 4.3-16.

- Additional ¼ mile of sanitary wastewater line; and
- Elevated fill under the power block area (15 acres).

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PHPP DECISION⁶

In the 2011 PHPP Decision (2011 Decision), cultural resources were identified near the PHPP site. Potential impacts to these cultural resources were assessed, and the potential for the discovery of unidentified, buried cultural resources was assessed based on a two-phased, geo-archaeological literature review. We found that any significant impacts to historical resources eligible for listing on the California Register of Historical Resources (CRHR) would be mitigated to a less than significant level with Conditions of Certification **CUL-1** through **CUL-8**.

The 2011 Decision assumed that any potential for cumulative impacts from nearby projects would be mitigated to less than significant or avoided by implementation of the lead agency's mitigation measures within the California Environmental Quality Act (CEQA) review process.⁷

ENVIRONMENTAL ANALYSIS

The reduced project footprint of the PEP will not substantially decrease the impact to cultural resources because the potential to encounter buried as-yet unknown cultural resources in the project area still remains. Similarly, ground-disturbing activities related to the transmission line, wastewater line, and grading/fill have the potential to encounter buried as-yet unknown cultural resources in the PEP area.⁸

Tribal Consultation

In May 2015, Energy Commission staff (Staff) contacted the NAHC to conduct a search of the Sacred Lands File (SLF) and to obtain a list of Native American tribes with traditional ties to the area. The NAHC responded on July 16, 2015, that the search of the SLF was negative and provided a list of six tribes who may be interested in the project. Staff also included the San Manuel Band of Mission Indians because of the close proximity of the PAA to their traditional area. Staff used the minimum defined specifications for a prehistoric and ethnographic PAA for its archaeological PAA for the

⁶ 2011 PHPP Final Decision (TN 61876).

⁷ *Id.* at pp. 7.3-19 – 7.3-20.

⁸ Ex. 500, p. 4.3-16.

PEP, plus the maximum depth that would be reached by all foundation excavations and by all pipeline installation trenches.⁹

Staff sent letters to the seven tribes on July 27, 2015, and e-mails on August 26, 2015. Follow-up phone calls were made to the tribes on September 3, 2015. The evidence indicates that none of these tribes provided comments or input regarding the project.¹⁰

On October 22, 2015, the Fernandeño-Tataviam Band of Mission Indians docketed an e-mail to Hearing Officer Kenneth Celli recommending that the PEP be processed as a new application and not as an amendment, because of the substantial differences between the PEP and the PHPP. This group was not on the NAHC's contact list and thus was not sent an initial letter inviting them to consult regarding the PEP. In response to the October 22, 2015 letter, Staff initiated a consultation with the tribe by e-mail on October 28, 2015, and by letter on November 4, 2015. The tribe requested that Native American monitoring of all ground-disturbing activities be incorporated as a mitigation measure for the PEP. Prior to the April 20, 2016 Preliminary Staff Assessment workshop, Staff received an e-mail stating that the tribe was withdrawing from consultation and was no longer interested in the project.¹¹

Cultural Resources Inventory

A total of 23 investigations within the record search area were conducted within the PAA, identifying at least 136 cultural resources. Of these cultural resources, 38 were not previously identified in cultural resource technical reports or staff analyses for the PHPP. Of those 38 archaeological resources, nine are located either in an area of potential direct impact or in close enough proximity that a direct impact could occur within the prehistoric and ethnographic PAA.¹² Five of the sites were previously recommended as not-eligible, and staff concurred with this recommendation because none of these sites were associated with events that have made a significant contribution to the broad patterns of California history, were associated with the lives of important persons of the past, were associated with a distinctive type, period, or method of construction or creative individual, or have potential to yield important information. Therefore, any impacts to these sites by the PEP would not be significant.¹³ The remaining four sites were not evaluated for the CRHR and evidence indicates that none

⁹ Ex. 500, p. 4.3-3.

¹⁰ Ex. 500, pp. 4.3-3 – 4.3-4.

¹¹ Ex. 500, p. 4.3-4.

¹² Ex. 500, p. 4.3-12.

¹³ Ex. 500, p. 4.3-14.

of the four sites were found to meet any of the criteria for listing on the CRHR or retain sufficient integrity.¹⁴

CRHR Built Environment Resources

The evidence identifies three newly-identified CRHR-eligible built environment resources that were not included in the environmental analysis in the 2011 Decision – Building 210 at Air Force Plant 42, the California Aqueduct, and the Pearblossom Pumping Station.

Staff identified Building 210 located on the adjacent Air Force Plant 42 as an additional historic built-environment resource within the PAA. Building 210 was built in 1954 and was the final assembly site of the SR-71 Blackbird strategic reconnaissance aircraft built by the United States and used during the Cold War. It is listed on the CRHR.¹⁵

The California Aqueduct and its ancillary facility, the Pearblossom Pumping Plant, have been recommended to be eligible for the NRHP¹⁶/CRHR. The California Aqueduct is a component of the State Water Project constructed in the initial phase from 1960 to 1974.¹⁷ The Pearblossom Pumping Plant was completed in 1972. The original facility had three pumping units, a service bay, two administration buildings, and a 230-kV switchyard. The Pearblossom Pumping Plant is located just to the south of a major transmission line corridor, with six existing transmission lines crossing east to west over the aqueduct. One of these lines serves the switchyard at the plant.

The entire California Aqueduct was determined to be eligible as a historical resource for listing on the NRHP/CRHR by the State Historic Preservation Officer (SHPO) in 2012.¹⁸ The 2012 SHPO determination included ancillary facilities as character-defining features and contributing elements.¹⁹

In accordance with CEQA Guidelines section 15162, we find that supplementation of the environmental analysis contained in the 2011 Decision is necessary to update the number of potentially CRHR-eligible cultural resources potentially subject to impacts.

Construction and Operation Impacts

The record also shows that the PEP will not have an adverse impact on CRHR-listed Built Environment Resources under CEQA. There would be no direct or indirect impacts

¹⁴ Ex. 500, p. 4.3-14.

¹⁵ Ex. 500, pp. 4.3-15 – 4.3-16.

¹⁶ National Register of Historic Places.

¹⁷ Ex. 500, p. 4.3-17.

¹⁸ Ex. 500, pp. 4.3-17 – 4.3-18.

¹⁹ Ex. 500, p. 4.3-18.

to the building's workmanship, design, materials, location, and association of Building 210. The building's integrity of setting and feeling is not impacted by its proximity to the PEP and its linears because it is already sited within an industrial setting.²⁰

The proposed transmission line would span the California Aqueduct, having the potential to impact the aqueduct and the Pearblossom Pumping Plant or other ancillary facilities considered to be character-defining features. The modification of existing Condition of Certification **CUL-6** to include the California Aqueduct would mitigate the impacts to a less than significant level. Condition of Certification **CUL-6** provides a means to mitigate any unanticipated and unavoidable construction-related impacts to a less than significant level by requiring Historic American Engineering Record (HAER) recordation.²¹ Although HAER recordation is not a complete substitute for preserving the resource itself, it embodies a "fair approximation of the burden of historical preservation borne by the particular historical resource in question."²²

The addition of a seventh transmission line to the existing corridor to service the PEP would not have an indirect impact upon either the California Aqueduct's or the Pearblossom Pumping Plant's historic integrity (settings, feelings, or associations), as transmission lines have been part of the setting from the time of construction of these resources.²³

Conditions of Certification **CUL-1** through **CUL-8** will reduce any impacts to buried as-yet unknown historical resources to a less than significant level.²⁴

Cumulative Impacts

There will not be any direct or indirect impacts to known CRHR-eligible archaeological resources; therefore, the undisputed evidence indicates that the PEP will not contribute to any significant cumulative impacts to known archaeological resources.²⁵

Staff reviewed potential projects in the vicinity of the PEP and Air Force Plant 42 and found that the PEP and its transmission line will not have significant cumulative impacts on the integrity of Air Force Plant 42's Building 210. The addition of three transmission poles to what was previously proposed along Avenue M does not alter the design, workmanship, materials, setting, feeling, association, or location of Building 210.²⁶

²⁰ Ex. 500, p. 4.3-18.

²¹ Ex. 500, p. 4.3-19.

²² *Id.*

²³ Ex. 500, p. 4.3-19.

²⁴ *Id.*

²⁵ *Id.*

²⁶ *Id.*

Staff reviewed potential projects in the vicinity of the California Aqueduct's Pearblossom Pumping Plant for the potential for cumulative impacts on the resource. Other than the PEP's transmission line, the nearest identified future project is the High Desert Corridor Project, a 63-mile freeway project. The route for the proposed freeway is nearly five miles from the Pearblossom Pumping Plant and the aqueduct and does not have the potential to impact the resource. We find that the PEP and its linears will not combine with other projects to have cumulative impacts on this resource.²⁷

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP project. The evidence establishes that, except as set forth below in **Cultural Resources Table 1**, there have been no changes to the LORS that apply to the PEP.²⁸

The County of Los Angeles' Historic Preservation Ordinance, which went into effect on October 1, 2015, is applicable to the PEP because the proposed linear routes traverse unincorporated areas of Los Angeles County. We include it here to acknowledge the potential for impacts that may affect resources beyond the Palmdale city limits, but within the vicinity of the project and its linears.

Cultural Resources Table 1 summarizes local LORS that have changed since the 2011 Decision.

²⁷ Ex. 500, p. 4.3-20.

²⁸ Ex. 500, p. 4.3-2.

Cultural Resources Table 1²⁹
Laws, Ordinances, Regulations, and Standards

Applicable Law	Description
Los Angeles County Code 22.44.1570 - Archaeological/Paleontological/Historic Cultural Resources. Ord. 2014-0055 § 11, 2014. ³⁰	Protects and preserves archaeological, historic, and paleontological resources from destruction, and avoid impacts to such resources where feasible. Where avoidance is not feasible, impacts to resources shall be minimized to the maximum extent feasible.
Los Angeles County General Plan 2035, adopted on October 6, 2015.	Chapter 9 Conservation and Natural Resources Element, Section VIII: Historic, Cultural and Paleontological Resources. Eleven built environment resources are identified in unincorporated areas of the county. Los Angeles County Historical Landmarks and Records Commission reviews and recommends cultural heritage resources in the unincorporated areas for inclusion in the State Historic Resources Inventory. The county's Historic Preservation Ordinance seeks to preserve, conserve and protect buildings, objects, landscapes and other artifacts of historical and cultural significance. Goal C/NR 14: outlines the policies related to protect historic, cultural and paleontological resources.
Los Angeles County Historic Preservation Ordinance - part 28 of chapter 22.52. Ord. 2015-0033 section 3, 2015 ³¹	Enables the county government to designate and protect historic landmarks in unincorporated territory countywide, including county-owned structures, and does not require owner consent to designation. It also allows for the designation of local historic districts.
Assembly Bill 52 (chapter 532, statutes of 2014)	Requires lead agencies implementing CEQA, such as the Energy Commission, to conduct consultations with California Native American tribes about tribal cultural resources within specific time frames. If tribal cultural resources could be impacted by project implementation, the lead agency is to continue with the consultation process until agreement or termination of the consultation. Historical resources including unique archaeological resources and non-unique archaeological resources as defined in the statute may also be tribal cultural resources.

CHANGES TO CONDITIONS OF CERTIFICATION

The parties have jointly recommended changes to Condition of Certification **CUL-6** imposed by the 2011 Decision to address potential impacts to the California Aqueduct and the Pearblossom Pumping Plant. We, thus, impose the revised Condition of

²⁹ Ex. 500, p. 4.3-3.

³⁰

https://www.municode.com/library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT22PLZO_DIV1PLZO_CH22.44SUDI_PT10SAMOMOLOIMPR_ADDEST_22.44.1570ARPAHICURE

³¹

https://www.municode.com/library/ca/los_angeles_county/codes/code_of_ordinances?nodeId=TIT22PLZO_DIV1PLZO_CH22.52GERE_PT28HIPROR

Certification **CUL-6**.³² We find that with the imposition and implementation of the updated Condition of Certification **CUL-6**, in concert with the existing Conditions of Certification **CUL-1** through **CUL-9**, the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts related to cultural resources.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **CULTURAL RESOURCES** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to cultural resources.
2. There are four new laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project that may apply to the Palmdale Energy Project.
3. The Energy Commission has conducted the tribal consultation process required under the California Environmental Quality Act and AB 52.
4. Any new significant impacts on identified built-environment resources will be mitigated to less than significant with implementation of Condition of Certification **CUL-6**.
5. With the implementation of Condition of Certification **CUL-6**, the Palmdale Energy Project will not have significant impacts to the three newly-identified archaeological resources.
6. Implementation of Conditions of Certification **CUL-1** through **CUL-8** will reduce any impacts to buried as-yet unknown historical resources to a less than significant level.

³² Ex. 508, pp. 144 to 148.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources.
3. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to cultural resources.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This section summarizes the potential exposure of the Palmdale Energy Project¹ (PEP) to geological hazards, as well as its potential impacts on geological, mineralogical, and paleontological resources.

We evaluate whether the PEP site is located in an area 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 discusses whether site preparation, construction, or operation of the PEP will result in adverse impacts on geological or mineralogical resources in the area. Finally, we examine whether paleontological resources, such as fossilized remains or trace remnants of prehistoric plants or animals, may be present at the site.

This topic was uncontested. Evidence on the topic of Geological and Paleontological Resources is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, 506, and 508.²

SETTING

The PEP site is located approximately 60 miles north of downtown Los Angeles in the northernmost portion of the city of Palmdale, east of the intersection of Sierra Highway and East Avenue M. It is situated on the northwest side of the Los Angeles/Palmdale Regional Airport and Air Force Plant 42, adjacent to East Avenue M (Columbia Way), in an active seismic area in eastern Los Angeles County, California. The site is undeveloped and vegetated with low desert scrub and Joshua trees.

The subsurface conditions and associated geologic hazards at the proposed site are expected to be similar to those previously analyzed and documented in the Palmdale Hybrid Power Project (PHPP) Decision (2011 Decision). The potential geologic hazards and the thresholds for significance for the PEP are essentially the same as those documented in the 2011 Decision. There are no significant geologic resources present in the project area and the potential to encounter paleontological resources remains the same.³

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 5.2-4.

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The elimination of the solar field and changes in equipment at the PEP reduces the power plant footprint and mass grading from 333 acres to 50 acres. The construction laydown and parking area will be reduced from 50 acres to 20 acres. The southeast corner of the power block will be approximately level with the existing grade. The northwest corner will require approximately six feet of excavation relative to existing grade. On-site stormwater will be collected in an approximately 17-foot deep infiltration pond on the north side of the power block. The switchyard will be constructed west of the power block.⁴

Extensive pipeline and electric transmission generator-tie (gen-tie) lines will be required for the PEP. These electric transmission and pipeline routes are essentially the same as the routes licensed in the PHPP. However, due to the reconfiguration of the PEP's project footprint, the PEP will require an additional 1,800 feet of transmission gen-tie line to connect the PEP to the Vincent Substation.⁵

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION

The 2011 Decision for the PHPP⁶ included a review of the potential presence of unique paleontological resources or sites and geographical features, as well as an analysis of geological resources in the PHPP's area.⁷ The 2011 Decision also reviewed the exposure of the PHPP to geological hazards, including faulting and seismicity, liquefaction, compaction, and spreading of soils, seiches, tsunamis, and landslides.

The 2011 Decision found that there were no unmitigated potential direct, indirect, and cumulative significant impacts to project facilities from geologic hazards or to potential geological, mineralogical, or paleontological resources from the construction and operation of the PHPP. The PHPP was found to comply with all applicable laws, ordinances, regulations, and standards (LORS) with the implementation of Conditions of Certification **GEO-1** through **GEO-5** and **PAL-1** through **PAL-8**.⁸

⁴ Ex. 500, pp. 5.2-3 – 5.2-4.

⁵ Ex. 500, pp. 5.2-29 and 5.2-30.

⁶ 2011 PHPP Final Decision (TN 61876).

⁷ 2011 PHPP Final Decision, pp. 7.4-1 – 7.4-10.

⁸ Ex. 500, p. 5.2-2.

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act Guidelines section 15162 are met. The evidence indicates that, given the substantial reduction in project acreage, there would be:

1. No new significant impacts related to geologic hazards or to geological, mineralogical, or paleontological resources not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to geologic hazards or geological, mineralogical, or paleontological resources; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁹

The evidence shows that the conditions at the proposed site of the PEP are similar to those previously analyzed in the 2011 Decision.¹⁰ Therefore, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, and cumulative impacts to geological and paleontological resources.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP. In addition to those, two updated LORS also now apply to the PEP and are shown in **Geology and Paleontology Table 1** below.

⁹ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162; Ex. 500, pp. 5.2-1, 5.2-5.

¹⁰ Ex. 500, p. 5.2-4.

Geology and Paleontology Table 1
Laws, Ordinances, Regulations, and Standards¹¹

APPLICABLE LORS	DESCRIPTION
STATE	The California Building Code (2013) includes a series of standards that are to be used as the basis for design and construction of buildings in California. The purposes of the standards are to establish minimum requirements to safeguard the public health, safety, and general welfare, and provide safety to life and property, and emergency responders. These standards include safeguards from geologic hazards such as seismic shaking, liquefaction, and slope failure.
STANDARDS	The “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources developed by the SVP, a national organization of professional scientists. The measures were adopted in October 1995, and revised in 2010 following adoption of the Paleontological Resources Preservation Act of 2009.

CHANGES TO CONDITIONS OF CERTIFICATION

Condition of Certification **GEO-1** is modified to require the project owner to comply with the requirements of the most recent version of the California Building Code in effect at the time the project begins construction. We have also modified Conditions of Certification **PAL-1** and **PAL-3** through **PAL-8**, to require adherence to the updated procedures and standards for assessing and mitigating impacts to paleontological resources. Other conditions remain unchanged.¹²

We find that, with the imposition and implementation of the updated Conditions of Certification **GEO-1** and **PAL-1** through **PAL-8**, in concert with the existing Conditions of Certification **GEN-1** through **GEN-5**, the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts related to geological, mineralogical, and paleontological resources.¹³

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **GEOLOGICAL AND PALEONTOLOGICAL RESOURCES** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

¹¹ Ex. 500, p. 5.2-3.

¹² Ex. 500, pp. 5.2-3 – 5.2-5.

¹³ All conditions of certification are contained in **Appendix A**.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to geological and paleontological resources.
2. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines section 15162, and described in the **INTRODUCTION** section of this Decision, are present regarding geologic hazards or geological, mineralogical, and paleontological resources.
3. The 2013 California Building Code and the 2010 “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” are laws, ordinances, regulations, or standards applicable to the Palmdale Energy Project.
4. Except for the 2013 California Building Code and the 2010 “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures,” no laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project apply to the Palmdale Energy Project.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards relating to geological and paleontological resources.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to geological and paleontological resources.

VI. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical areas discussed in this portion of the Decision consider issues of local concern including **LAND USE, NOISE AND VIBRATION, SOCIOECONOMICS, TRAFFIC AND TRANSPORTATION, and VISUAL RESOURCES.**

A. LAND USE

INTRODUCTION

This analysis focuses on whether the Palmdale Energy Project (PEP) is consistent with local land use plans, ordinances, and policies, and whether the PEP is compatible with existing and planned uses. In addition, we analyze whether there are any direct, indirect, or cumulative impacts under the California Environmental Quality Act (CEQA) related to land use.

This topic was uncontested. Evidence on the topic of Land Use is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.¹

SETTING

The PEP site would be located approximately 60 miles north of downtown Los Angeles and in the northernmost area of the city of Palmdale, east of the intersection of Sierra Highway and East Avenue M. The 50-acre PEP site was formerly part of a 613.4-acre, city-owned property bounded by Sierra Highway to the west, East Avenue M (Columbia Way) to the north, and U.S. Air Force Plant 42 (Plant 42) on the south and east.

Prior to the submittal of the Petition to Amend, the City of Palmdale approved a parcel split to create a new parcel encompassing the 50 acres for the PEP site. The new Los Angeles County parcel number for the PEP site is 3126-022-927.² Existing land uses immediately adjacent to the PEP site include:

- North: Undeveloped land owned by the City of Palmdale and industrial uses
- East: Air Force Plant 42
- South: Undeveloped land owned by the City of Palmdale and Plant 42

¹ 3/22/17 RT 9:3-11; 12:11-12; 51:1.

² Ex. 500, p. 4.5-3.

- West: Undeveloped land owned by the City of Palmdale and water storage tanks.³

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The Petition to Amend the Palmdale Hybrid Power Project (PHPP) includes eliminating the solar energy component and reconfiguring the two-on-one, combined-cycle power block configuration to incorporate new gas turbine technology, and replacing wet cooling with an air cooled condenser. The petition also requests that the PHPP name be changed to PEP.⁴ With the elimination of the solar energy component, the project site would be reduced from 333 acres to 50 acres.

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PHPP DECISION⁵

In the 2011 PHPP Decision (2011 Decision), we reviewed the potential of the PHPP to impact land use. In February 2009, the City of Palmdale approved a general plan amendment, zone change, and tentative parcel map for the entire 613.4-acre city-owned property, which the PEP site is a part of. As a result, according to the City of Palmdale's Resolution PC-2009-008, the entire city-owned site is intended for a powerplant and for other industrial uses. Existing Condition of Certification **LAND-2** requires the project owner to submit a Site Plan Review to the City of Palmdale for review and comment, and to the Energy Commission Compliance Project Manager (CPM) for review and approval.

Based on the evidence presented in the original proceeding, the Energy Commission found that:

- The existing zoning of the PHPP site and vicinity was compatible with the proposed use;
- The PHPP would not result in a significant conversion of Farmland to non-agricultural use or conflict with existing agricultural zoning or Williamson Act contracts;

³ Ex. 500, p. 4.5-3.

⁴ Ex. 500, p. 4.5-1.

⁵ 2011 PHPP Final Decision (TN 61876).

- The PHPP would not disrupt or divide the physical arrangement of an established community;
- Condition of Certification **LAND-1** reduced disruption of agricultural activities due to construction of the transmission lines below significance;
- With implementation of Conditions of Certification **LAND-2** and **LAND-3**, the PHPP was consistent with the City of Palmdale and the County of Los Angeles' existing land use plans and zoning ordinances;
- The PHPP would not preclude or unduly restrict existing or planned land uses;
- The PHPP's road paving proposal for air quality mitigation had no significant land use-related impacts; and
- The PHPP's cumulative land use impacts would be less than significant.⁶

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of CEQA Guidelines, section 15162, are met. The evidence indicates that there would be:

1. No new significant impacts related to land use not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts related to land use;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to land use; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment related to land use.⁷

The evidence establishes that the conditions at the proposed site of the PEP are similar to those previously analyzed in the 2011 Decision. Specifically, the Palmdale General Plan designation of Industrial and zoning of General Industrial (M-2) remain the same for the PEP site. Utility facilities are a permitted use in the M-2 zone subject to a site plan review, which is required by existing Condition of Certification **LAND-2**. Except for the additional 1,800 feet of generation-tie transmission line, the PEP does not include

⁶ 2011 PHPP Final Decision, pp. 8.1-8 – 8.1-9.

⁷ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162; Ex. 500, pp. 4.5-2 – 4.5-5.

modifications to any of the previously approved linear routes beyond the perimeter of the project site. With implementation of existing Conditions of Certification **LAND-2** and **LAND-3**, the PEP would still be consistent with the City of Palmdale.⁸

The proposed interconnection point for the PEP with the Southern California Edison electrical transmission system is at the existing Vincent Substation south of the City of Palmdale. The PEP proposes a minor modification to one of the approved generation tie-line routes by extending westerly approximately 1,800 feet along the south side of East Avenue M to accommodate the change in switchyard location. Otherwise, the project modifications proposed by the amendment do not include modifications to any of the approved linear routes. Additionally, the petition does not propose any changes to the natural-gas pipeline or route contained in the Commission Decision for the licensed PHPP.⁹

The Los Angeles County Department of Public Works (LACDPW) commented that any use of the county road right-of-way would require compliance with title 16 of the Los Angeles County Code, including provisions relating to grant of a franchise by the Los Angeles County Board of Supervisors and permit approvals for encroachments. In addition, the proposed transmission lines would need to fit within the boundaries of the road right-of-way and not interfere with the county's current or future use of the right-of-way for road purposes. The evidence indicates the Petitioner had prepared a map showing potential transmission line crossings that would be subject to a franchise agreement and provided the map to LACDPW for their review. Additionally, the Petitioner submitted the proposed condition of certification language, which the LACDPW approved. Therefore, with the concurrence of LACDPW and the parties, we have imposed Condition of Certification **LAND-4** to ensure the PEP will comply with title 16 of the Los Angeles County Code.¹⁰ We find the PEP will comply with the County of Los Angeles' land use plans and zoning ordinances.

The record shows that the PEP will have no new land use impacts and would not result in a change or deletion of the Conditions of Certification **LAND-1**, **LAND-2**, and **LAND-3** adopted in the Commission Decision in the licensed PHPP proceeding.¹¹

Based upon the foregoing, we find that no supplementation of the environmental analysis contained in the PHPP Decision is necessary for the PEP's potential direct, indirect, and cumulative impacts related to land use.

⁸ Ex. 500, pp. 4.5-2 – 4.5-3.

⁹ Ex. 500, p. 4.5-3.

¹⁰ Ex. 500, pp. 4.5-4 – 4.5-5.

¹¹ Ex. 500, p. 4.5-4.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

As set forth above, the PEP is in an area zoned General Industrial (M-2). Under this zoning classification, utilities are permitted uses with an approved site plan.¹² The PEP is subject to Condition of Certification **LAND-2** that requires the property owner to obtain review and comment from the City of Palmdale and review and approval from the CPM for a Site Plan Review. With the imposition of Condition of Certification **LAND-2**, the PEP is consistent with the City's zoning code related to utility uses in the M2 zoning district.

The tallest components of the project will be the two 160-foot-tall, 22-foot-diameter HRSG exhaust stacks.¹³ The City of Palmdale specifies that the maximum heights of buildings in the M2 district are 45 feet for primary structures and 35 feet for accessory structures.¹⁴ These maximums may be exceeded only upon the issuance of a Conditional Use Permit (CUP).¹⁵

The City of Palmdale Municipal Code authorizes the issuance of a CUP for over-height buildings in the M2 zone upon the making of the following findings:

1. adequate setbacks are provided on the project site to mitigate adverse impacts on adjacent properties;
2. adequate fire protection is provided for the subject buildings;
3. all FAA clearance requirements are met;
4. maximum floor area ratio requirements are not exceeded; and
5. the height, bulk, massing, design, and placement of the building on the subject site will not adversely impact adjacent properties or the general public.¹⁶

In the M2 zone, setbacks are determined based on the type of street that the property abuts.¹⁷ The maximum setback is 30 feet from arterial streets.¹⁸ The City of Palmdale Zoning Ordinance also provides that if any structure exceeds 35 feet, the reviewing

¹² City of Palmdale Municipal Code § 62.05, subd. (D)(12)(F).

¹³ Ex. 500, pp. 3-3; 4.12-1 – 4.12-3.

¹⁴ City of Palmdale Municipal Code §62.09, subd. (D)(1).

¹⁵ City of Palmdale Municipal Code §62.09, subd. (D)(1)(a).

¹⁶ *Id.*

¹⁷ City of Palmdale Municipal Code §62.09, subd. (C).

¹⁸ *Id.*

authority may increase the setback to mitigate any adverse impacts to adjacent properties. The maximum increased setback, regardless of the height of the structure, is 70 feet.¹⁹

The evidence shows that the findings for a CUP for the PEP may be made. The plot plan for the PEP²⁰ establishes that the project meets or exceeds the 35-foot setback. As more fully described in the **VISUAL RESOURCES** and **NOISE & VIBRATION** sections of this Decision, we find that the stacks do not create impacts to adjacent properties. Therefore, increasing the setbacks is not required for the over-height stacks. As set forth in **WORKER SAFETY & FIRE PROTECTION**, the PEP will, with the imposition of the conditions of certification, have adequate fire protection. FAA clearance requirements are met, as set forth in **TRAFFIC & TRANSPORTATION**. The maximum floor area for this zoning classification is 50 percent²¹ and the PEP does not exceed this maximum. Finally, as ultimately concluded in this Decision, the PEP does not adversely impact adjacent properties or the general public.²² We conclude that the findings for the issuance of a CUP for the Amended Project can be made.

The evidence establishes that there have been no changes to the LORS applicable to the PHPP, nor are there any new LORS that apply to the PEP. Therefore, with the imposition and implementation of the conditions of certification, the PEP is in compliance with applicable LORS.²³

CHANGES TO CONDITIONS OF CERTIFICATION

The record shows that the PEP will have no new land use impacts and will not result in a change or deletion of the Conditions of Certification **LAND-1**,²⁴ **LAND-2**,²⁵ and **LAND-3**²⁶ adopted in the 2011 Decision (other than a correction to one of the 10-digit Assessor's identification numbers referenced in Condition of Certification **LAND-3**).²⁷

¹⁹ City of Palmdale Municipal Code § 62.09, subd (C) (1) (d) (i).

²⁰ See **PROJECT DESCRIPTION** Figure 3, above.

²¹ City of Palmdale Municipal Code § 62.09, subd. (D)(1)(a)(3).

²² See, e.g., the discussion in **BIOLOGICAL RESOURCES**, **NOISE & VIBRATION**, **VISUAL RESOURCES**, and **SOIL & WATER RESOURCES**.

²³ Ex. 500, pp. 4.5-2 – 4.5-6.

²⁴ **LAND-1** requires project owner to coordinate with property owners of farmland that is actively in production within the proposed transmission right of way.

²⁵ **LAND-2** requires project owner to submit a Site Plan Review to City of Palmdale for review and Comment and to the CPM for review and approval prior to the start of transmission line construction.

²⁶ **LAND-3** requires the project owner to dedicate an easement within or adjacent to the project transmission line corridor for the Avenue S Connector Trail.

²⁷ Ex. 500, p. 4.5-4.

The Petitioner submitted proposed language for Condition of Certification **LAND-4**, which requires a franchise agreement between the County of Los Angeles and the project owner for specified transmission line crossings. LACDPW approved the condition of certification language and no party objected to it.²⁸ Therefore, we agree to the addition of Condition of Certification **LAND-4** in **Appendix A** of this Decision.²⁹

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **LAND USE** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision found that the Palmdale Hybrid Power Project conforms with all applicable laws, ordinances, regulations, and standards and that with the imposition and implementation of the conditions of certification the Palmdale Hybrid Power Project would not have any significant direct, indirect, or cumulative impacts related to land use.
2. The Palmdale Energy Project will have no new significant impacts related to land use not previously analyzed.
3. The Palmdale Energy Project will not cause a substantial increase in the severity of previously identified environmental impacts related to land use.
4. There were no mitigation measures previously found to be infeasible that would now be feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the Palmdale Energy Project related to land use.
5. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the Palmdale Energy Project on the environment related to land use.
6. The Palmdale Energy Project will still be consistent with the City of Palmdale and the County of Los Angeles' land use plans and zoning ordinances.
7. The Palmdale Energy Project would require a conditional use permit but for the exclusive licensing jurisdiction of the California Energy Commission.

²⁸ Ex. 500, p. 4.5-5.

²⁹ Ex. 500, pp. 4.5-4 – 4.5-5.

8. The findings required to support the granting of a conditional use permit to allow structures to exceed the maximum allowable height under the City of Palmdale Municipal Code can be made.
9. The Palmdale Energy Project will not result in a change to the Conditions of Certification **LAND-1**, **LAND-2**, and **LAND-3**.
10. No new laws, ordinances, regulations, or standards not included in the 2011 Decision apply to the Palmdale Energy Project.
11. None of the factors that require a subsequent or supplemental environmental analysis as set forth in California Environmental Quality Act Guidelines section 15162(a) as described in the **INTRODUCTION** section of this Decision are present regarding land use.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards regarding land use.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project does not create any significant direct, indirect, or cumulative environmental effects related to land use.

B. TRAFFIC AND TRANSPORTATION

INTRODUCTION

This section addresses the extent to which the Palmdale Energy Project¹ (PEP) will affect the local transportation network. The record contains an analysis of the roads and routes that are proposed to be used for construction and operation, potential traffic-related problems associated with the use of those routes, the anticipated encroachment upon public rights-of-way during the construction of the project and associated facilities, the frequency of trips and probable routes associated with the delivery of hazardous materials, and the potential effect of project operations on local airport flight traffic.

This topic was uncontested. Evidence on the topic of Traffic and Transportation is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 51, 55, 56, 57, 500, 501, 502, 503, 505, and 508.²

SETTING

For information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 PALMDALE HYBRID ENERGY PROJECT (PHPP) DECISION³

The traffic analysis in the 2011 PHPP Decision (2011 Decision) addressed the PHPP's impacts on the local transportation system. The analysis included an assessment of impacts on the levels of service (LOS) of the roads to be used by construction and operation vehicles, the frequency of trips and probable routes associated with the delivery of hazardous materials, and the effects of the project on flight operations at the Air Force Plant 42. The 2011 Decision found the PHPP would be in conformance with the applicable laws, ordinances, regulations, and standards (LORS) related to traffic and transportation and determined that all potential adverse traffic impacts would be mitigated to less than significant with the implementation of Conditions of Certification **TRANS-1** through **TRANS-9**.

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ 2011 PHPP Final Decision (TN 61876).

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act (CEQA) Guidelines, section 15162, are met. The evidence establishes that, even with the substitution of equipment and reconfiguration of the power plant footprint, there would be:

1. No new significant impacts to traffic and transportation not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁴

Construction Traffic

Construction of the PEP will take 25 months, compared to 27 months for the licensed PHPP. During construction, the PEP will require an average construction workforce of approximately 371 daily construction workers with a peak workforce of 710 workers. The licensed PHPP assumed an average of approximately 367 daily construction workers with a peak workforce of 767 workers, so the workforce would remain about the same between the two projects. Although the solar component is not part of the PEP, the petition indicates that the assumptions made for daily truck trips for the licensed PHPP remain valid for the PEP.⁵

The PEP will truck secondary-treated reclaimed water from the Palmdale Water Reclamation Plant (PWRP) to the site for dust suppression until completion of the project's water supply pipeline, which is anticipated in month 18 of the construction schedule. The evidence indicates that there would be an average of six water delivery trucks per day with a peak of 25 trucks per day. This is a 50 percent reduction in the number of peak truck trips estimated for the PHPP because the PEP site is smaller and will require less grading.⁶

⁴ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a).

⁵ Ex. 500, p. 4.10-3.

⁶ *Id.*

The PHPP record established that some intersections in the project area operate at unacceptable LOS without the addition of project-related traffic. The minimum acceptable LOS during peak hour traffic is LOS D. With the addition of peak construction-related traffic, the LOS of three additional intersection segments would deteriorate to E or F during the morning and evening peak hours.⁷

To mitigate the PHPP's impacts on local roads to a less than significant level, the Energy Commission imposed Condition of Certification **TRANS-1**, which required the implementation of a traffic control plan. The traffic control plan requires construction workers to avoid using SR-14 on- and off-ramps at East Avenue M and the intersection of Sierra Highway and East Avenue M during peak traffic periods, and limits deliveries of heavy equipment and building materials to off-peak periods (9:30 a.m. to 3:30 p.m.). We find that Condition of Certification **TRANS-1** still mitigates the PEP's impacts on LOS to a less than significant level.⁸

In addition to Condition of Certification **TRANS-1**, the Commission imposed a number of conditions of certification (**TRANS-3**, **TRANS-5**, **TRANS-6**, and **TRANS-7**) to ensure the PHPP's traffic impacts would be less than significant as they relate to hazards associated with overweight and oversized trucks, damaged roadways, emergency vehicle access, and hazardous materials deliveries. These issues remain unchanged with the PEP, and the evidence shows that no supplemental analysis is necessary.⁹

Operations Traffic

The PHPP required an operations staff of approximately 36 employees working 24 hours per day, seven days per week. The testimony estimated that operations staff would drive two to three truck trips per day. The Energy Commission found this amount of operations-related traffic would have a less than significant impact on the LOS of the area roadways.¹⁰

If the reclaimed water supply pipeline is not completed by the anticipated commercial operation date, the project owner proposes to truck tertiary-treated reclaimed water to the PEP site as a temporary measure until the water pipeline is operational. This transport of water would temporarily increase the amount of truck traffic. The peak delivery would be 47 trucks per day or approximately three trucks per hour. The average delivery would be 16 trucks per day or approximately one truck per hour. The carrying capacity of the water trucks would be 10,000 gallons. The record describes the

⁷ Ex. 500, p. 4.10-3.

⁸ Ex. 500, p. 4.10-4.

⁹ *Id.*

¹⁰ *Id.*

most direct routes to/from the PEP site and the PWRP. The evidence indicates that one to three truck trips per hour during the interim period before completion of the water supply pipeline will not have a significant impact on traffic and transportation.¹¹

Air Traffic

The PEP site is located adjacent to Air Force Plant 42. The 2011 Decision discussed four issues related to the PHPP's effects on Air Force Plant 42 operations as follows: structure heights; thermal exhaust plumes; visible water vapor plumes; and glint and glare.¹²

As discussed in the 2011 Decision, given the proximity of the project site to Air Force Plant 42 and its two long runways, any structure over 30 feet tall would penetrate Air Force Plant 42's navigable airspace. According to evidence, there are several PEP structures that would exceed the 30-foot, above-ground-level (AGL) threshold. These include the combustion turbine inlet air filters (68 feet tall), the heat recovery steam generator (HRSG) structures (96 feet tall), the air-cooled condenser (135 feet tall), and the HRSG stacks (160 feet tall). In addition, construction cranes could be 200 feet tall.¹³

Condition of Certification **TRANS-2** requires the project owner to notify the Federal Aviation Administration (FAA) of all project structures exceeding a height of 30 feet AGL. Exhibit 6 (Appendix 6E) contains the FAA's "Determinations of No Hazard" for PEP's two 160-foot-tall HRSG stacks and construction crane.¹⁴ The Energy Commission found that the project structures exceeding the 30-foot threshold would not be a hazard to air navigation at Air Force Plant 42 because most aircraft do not fly over the project site, and those aircraft in the traffic pattern are flying at a minimum of 1,500 feet AGL, which is well above any project structure.¹⁵ We have updated **TRANS-2** to reflect the proposed project-design changes for the PEP, including the construction cranes.¹⁶

Thermal Plumes

Staff has historically used an average thermal plume vertical velocity of 4.3 meters per second (m/s) as the threshold for potential impacts to aviation. Staff has concluded that

¹¹ Ex. 500, p. 4.10-4.

¹² *Id.*

¹³ Ex. 500, p. 4.10-5.

¹⁴ Ex. 6, Appendix 6-E.

¹⁵ 2011 PHPP Final Decision, p. 8.2-18; Ex. 57.

¹⁶ Ex. 500, p. 4.10-5.

based on recent publications, an average vertical velocity of 4.3 m/s is no longer an appropriate threshold.¹⁷

Based on a review of the recent publications discussed above described in Exhibit 501, Appendix TT-2, Staff will use 10.6 m/s peak vertical plume velocity as the new threshold. The altitude at which a plume would have a peak vertical velocity of 10.6 m/s would be the same altitude at which a plume would have an average vertical velocity of half that, or 5.3 m/s.¹⁸

While the results of the project owner's analysis and Staff's analysis of the PEP show an increase in the ACC thermal plume height compared to the original project, the average vertical velocities of PEP's plumes would still be below the significance level of 5.3 m/s at all heights above 1,500 feet AGL, at average vertical velocities of less than 5.3 m/s and PEP's plumes would not affect the airspace in the traffic pattern for RY 7/25 or RY 4/22. Based on current information, the conclusion in the Decision and Staff's conclusion in the FSA for the PEP of no significant impact on U.S. Air Force Plant 42 operations from thermal plumes would be unchanged.¹⁹

For the PHPP, the Energy Commission found that aircraft using Air Force Plant 42 would not be affected by the project's thermal plumes because arriving or departing aircraft would not fly over the HRSGs and cooling tower, and aircraft in the traffic pattern would be flying above 1,500 feet AGL. While the evidence shows a possible increase in the thermal plume heights compared to the original project, the PEP's plumes would still be below 1,500 feet AGL.²⁰ Therefore, we find that the PEP will have no significant impact on Air Force Plant 42 operations from thermal plumes, and it remains unchanged from the PHPP determination.²¹

Although impacts from thermal plumes were found to be less than significant for the PHPP, the Energy Commission required implementation of Condition of Certification **TRANS-4**. This condition requires the project owner to work with the FAA and the Air Force Plant 42 Commander to implement a number of measures to advise pilots to avoid direct overflight of the project below 1,500 feet AGL. We accept Staff's recommendation to modify Condition of Certification **TRANS-4** to require the project owner to work with the FAA to issue a Notice to Airmen (NOTAM) of the identified plume hazard, work with the Air Force Plant 42 Commander to add a remark about the plume hazard to the Airport Traffic Information System and the Airport Facility Directory,

¹⁷ Ex. 501, Appendix TT-2, p. 1.

¹⁸ Ex. 501, Appendix TT-2, p. 3.

¹⁹ Ex. 501, pp. 1 – 2.

²⁰ Ex. 500, p. 4.10-5.

²¹ *Id.*

and update the Los Angeles Sectional Chart and other applicable airspace publications used by pilots to indicate that pilots should avoid direct overflight of the PEP below 1,500 feet AGL.²²

The effects of visible plumes on aviation safety from the PHPP's wet-cooling tower and glare from the licensed project's solar field were addressed in existing Conditions of Certification **TRANS-8** and **TRANS-9**. These impacts are no longer an issue because the PEP has eliminated the use of wet cooling and the solar field. Therefore, Conditions of Certification **TRANS-8** and **TRANS-9** are deleted.²³

Cumulative Impacts

The High Desert Corridor (HDC) project is an on-going proposal to construct a new 50-mile east/west freeway/expressway/light rail that would connect SR-14 with Interstate 15. This project was not specifically identified as a cumulative project in the analysis of traffic and transportation impacts provided in the 2011 Decision.

The HDC project preferred alternative would connect the cities of Palmdale, Lancaster, Adelanto, Victorville, and the town of Apple Valley. The preferred route is East Avenue P, south of East Avenue M, in the vicinity of the PEP site. The Final Environmental Impact Report/Impact Statement for the HDC project notes that construction is assumed to start in 2017 with completion in late 2020. However, the evidence indicates that construction of the HDC will not begin until 2030.²⁴ In light of the five-year construction period for the PEP to start construction after a license is granted,²⁵ we find that there would be no overlap between the PEP and HDC project construction and, therefore, the incremental effect of the PEP will not be cumulatively considerable when combined with the effects of past, present, and reasonably foreseeable projects.

Based on the foregoing, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, and cumulative impacts to traffic and transportation.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The evidence establishes that there have been no changes to the LORS that apply to the PEP.

²² Ex. 500, p. 4.10-5.

²³ Ex. 500, p. 4.10-6.

²⁴ Ex. 500, pp. 4.10-6 – 4.10-7.

²⁵ Cal. Code Regs., tit. 20, § 1720.3.

We, therefore, find that, with the imposition and implementation of Conditions of Certification **TRANS-1** through **TRANS-7**, the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative impacts on traffic and transportation.

CHANGES TO CONDITIONS OF CERTIFICATION²⁶

Conditions of Certification **TRANS-8** and **TRANS-9** pertaining to the glint and glare impacts of the now eliminated solar field are deleted. The parties also agreed to some minor revisions to Condition of Certification **TRANS-4**, which reflects the changed elevations due to the project's two 160-foot tall HRSG stacks, and the 135-foot tall ACC. There are also minor changes to the verification in Condition of Certification **TRANS-4**. There are no other changes to conditions.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **TRAFFIC AND TRANSPORTATION** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards and that, with the imposition and implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to Traffic and Transportation.
2. Condition of Certification **TRANS-2** reflects the proposed project-design changes to structures for the Palmdale Energy Project that may affect aviation traffic, including the taller heat-recovery steam generator exhaust stacks and construction cranes.
3. Condition of Certification **TRANS-4** requires the project owner to work with the Federal Aviation Administration and the Air Force Plant 42 Commander to implement measures advising pilots to avoid direct overflight of the project below 1,500 feet above ground level.

²⁶ The conditions of certification for Soil and Water Resources, as well as for all other topics of this Decision, may be found in **Appendix A**.

4. Conditions of Certification **TRANS-8** and **TRANS-9** are deleted because the elimination of the solar field obviates the need to mitigate glint and glare impacts.
5. No new laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project apply to the Palmdale Energy Project.
6. None of the factors that require a subsequent or supplemental environmental analysis as set forth in the California Environmental Quality Act Guidelines, section 15162, and described in the **INTRODUCTION** section of this Decision, are present regarding this topic.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will comply with all applicable laws, ordinances, regulations, and standards relating to traffic and transportation.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to traffic and transportation.

C. SOCIOECONOMICS

INTRODUCTION

This section addresses the potential of the Palmdale Energy Project¹ (PEP) to impact population, housing, employment patterns, and community services, including law enforcement and parks and recreation. We also review the conformity of the PEP with all applicable laws, ordinances, regulations, and standards (LORS).²

This topic was uncontested. Evidence on the topic of socioeconomic is contained in Exhibits 1, 2, 3, 4, 6, 9, 22, 32, 43, 46, 500, and 508.³

SETTING

For information regarding the location and setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF THE 2011 PALMDALE HYBRID POWER PROJECT (PHPP) DECISION⁴

In the 2011 PHPP Decision (2011 Decision), we reviewed the potential impacts of the PHPP on population, housing, employment patterns, and community services, including law enforcement and parks and recreation, as well as tax revenues and economic benefits. The 2011 Decision also included a discussion of whether there was an “environmental justice” population within six miles of the project site.⁵

The study area for the PHPP’s potential impacts on population and housing included the city of Palmdale, city of Los Angeles, San Bernardino County, and Kern County. The city of Palmdale was also the study area for impacts to police services, schools, and parks.⁶

The 2011 Decision found that there was a minority population within the six-mile area surrounding the project, but that all environmental impacts were mitigated below

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the amended project is referred to as the Palmdale Energy Project.

² Ex. 500, p. 4.8-1.

³ 3/22/17 RT 9:3-11; 12:11-12; 51:1.

⁴ 2011 PHPP Final Decision (TN 61876).

⁵ 2011 PHPP Final Decision, pp. 8.3-6 – 8.3-8.

⁶ 2011 PHPP Final Decision, p. 8.3-6.

significance. The Energy Commission therefore found that the PHPP did not cause or contribute to disproportionate impacts upon minority or low-income populations.⁷

For the purposes of assessing project construction impact on employment, “local workforce” is defined as residing within a two-hour commute of the project and includes the Los Angeles-Long Beach-Glendale Metropolitan Division (Los Angeles County MD), Bakersfield Metropolitan Statistical Area (Kern County MSA), and Riverside-San Bernardino-Ontario Metropolitan Statistical Area (Riverside County MSA).⁸ During project operation, “local workforce” is defined as residing within a two-hour commute of the project and includes Los Angeles County MD, Kern County MSA, and Riverside County MSA.⁹

Because of the large labor force within commuting distance to the project, the 2011 Decision concluded that the PHPP would not displace any existing housing units. We further concluded that there were sufficient permanent and temporary housing options and the PHPP did not create the need for replacement housing or displace existing residents.¹⁰

The 2011 Decision considered the potential of the PHPP to impact law enforcement, parks, and schools. We determined that the PHPP did not affect law enforcement or medical emergency response times and, thus, did not have a significant effect on law enforcement and emergency services.¹¹

The 2011 Decision addressed the potential of the road-paving mitigation (to offset the PHPP’s particulate matter emissions) to cause growth inducing impacts and concluded that the project would not result in substantial growth inducing impacts. In addition to the lack of population growth, the presence of the robust local and regional construction labor force discussed above led to the conclusion that there was little, if any, chance of an increase in the usage or demand for parks or other recreational facilities caused by the PHPP. We, thus, found that the PHPP did not create a significant impact on neighborhood or regional parks and recreational facilities.¹²

⁷ 2011 PHPP Final Decision, p. 8.3-6.

⁸ *Id.* at p. 8.3-2.

⁹ Ex. 500, p. 4.8-4.

¹⁰ *Id.* at p. 8.3-2.

¹¹ *Id.* at p. 8.3-4.

¹² 2011 PHPP Final Decision, pp. 8.3-4 – 8.3-6.

The 2011 Decision did not impose school impact fees. The evidence established that the PHPP was exempt from paying school impact fees because the project owner was the city of Palmdale rather than a private entity.¹³

Finally, we found that the PHPP created no cumulative socioeconomic impacts¹⁴ and no conditions of certification were required because there were no significant direct, indirect, and cumulative socioeconomic impacts that would result from the construction and operation of the PHPP.¹⁵

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the CEQA Guidelines section 15162 are met. The evidence establishes that, even with the reduction of the project site, the substitution of equipment, the reconfiguration of the power plant footprint, and recognized environmental concerns and conditions, there would be:

1. No new significant impacts to socioeconomics not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP related to socioeconomics; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.¹⁶

The Energy Commission staff (Staff) witness concluded that the PEP, like the PHPP, will not cause a significant adverse direct, indirect, or cumulative socioeconomic impact on the area's housing, schools, law enforcement, or parks and recreation. Similar to the PHPP, the PEP does not induce a substantial growth in population or displacement of

¹³ Ex. 500, p. 4.8-2.

¹⁴ 2011 PHPP Final Decision, pp. 8.3-5 – 8.3-6.

¹⁵ *Id.* at p. 8.3-10.

¹⁶ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a); Ex. 500, pp. 4.8-1; 4.8-3 - 4.8-4.

population or induce substantial increases in demand for housing, law enforcement services, or parks and recreation.¹⁷

In comparison to the PHPP, the construction period for the PEP will decrease from 27 months to 25 months. The average number of construction workers will remain almost the same, changing from 367 workers to 371 workers, while the peak construction workforce decreases from 767 workers to 710 workers. The number of workers necessary to operate the PEP decreases from 36 to 23 members.¹⁸

Consistent with our findings in the 2011 Decision, the evidence shows the presence of an environmental justice population living within a six-mile radius of the project site. Staff has not identified any significant adverse direct or cumulative socioeconomic impacts resulting from the construction or operation of the PEP project, including impacts to the environmental justice population. Therefore, the PEP project will not significantly affect any population, including the environmental justice population.¹⁹

Despite proposed development of solar energy and transportation projects near the city of Palmdale, the supply of skilled construction labor in the Los Angeles County MD, Kern County MSA, and Riverside County MSA is more than sufficient to accommodate the labor needs for construction of the PEP and the other planned future projects identified in the cumulative study area. The evidence establishes that there would not be an influx of non-local workers and their dependents that could have a significant cumulative impact on area housing, schools, or other community services.²⁰

Therefore, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, or cumulative socioeconomic impacts.

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision considered the LORS applicable to the PHPP, including California Revenue and Taxation Code section 70-74.7 relating to the county assessor's valuation of newly constructed real property and exemption for solar energy systems. The evidence establishes that due to the elimination of the solar energy component, section 70-74.7 no longer applies to the project.

¹⁷ Ex. 500, pp. 4.8-1, 4.8-3 – 4.8-4.

¹⁸ Ex. 500, pp. 4.8-3 – 4.8-4.

¹⁹ Ex. 500, p. 4.8-7.

²⁰ Ex. 500, p. 4.8-6.

Further, when the PHPP project owner was the City of Palmdale, the public entity was exempt from paying school impact fees. Due to the change in project ownership from a public entity (City of Palmdale) to the private entity (Palmdale Energy LLC), California Education Code section 17620 and California Government Code sections 65995-65998 apply to the PEP. These are school impact fees that apply to new industrial and commercial construction development.²¹

CHANGES TO CONDITIONS OF CERTIFICATION

With the requirement for payment of school impact fees, we therefore impose Condition of Certification **SOCIO-1** to ensure payment of the school impact fees and the project's compliance with applicable state LORS.²² We find that, with the imposition and implementation of Condition of Certification **SOCIO-1**, the PEP will comply with all applicable LORS and will have no significant unmitigated direct, indirect, or cumulative socioeconomic impacts.

AGENCY AND PUBLIC COMMENT

No agency or public comments on the topic of **SOCIOECONOMICS** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards, and the Palmdale Hybrid Power Project would not have any significant direct, indirect, or cumulative socioeconomic impacts.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines, section 15162, and as described in the **INTRODUCTION** section of this Decision, are present regarding socioeconomics.
3. With the change of project ownership from a public entity to a private entity, California Education Code section 17620 and California Government Code sections 65995-65998 are applicable to the Palmdale Energy Project.

²¹ Ex. 500, pp. 4.8-2 – 4.8-3.

²² All conditions of certification are contained in **Appendix A**.

CONCLUSIONS OF LAW

1. With the imposition and implementation of Condition of Certification **SOCIO-1**, the Palmdale Energy Project will be consistent with all applicable laws, ordinances, regulations, and standards related to socioeconomics.
2. There are no new significant impacts related to socioeconomics that were not previously analyzed in the 2011 Palmdale Hybrid Power Project Decision.
3. There is no substantial increase in the severity of previously identified environmental impacts.
4. There are no mitigation measures previously found to be infeasible in the 2011 Palmdale Hybrid Power Project Decision that are now feasible, and none of these infeasible mitigation measures substantially reduce a significant effect of the Palmdale Energy Project related to socioeconomics.
5. There are no mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Palmdale Hybrid Power Project Decision that would substantially reduce one or more significant effects of the Palmdale Energy Project on the environment.²³

²³ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a); Ex. 500, pp. 4.8-3 - 4.8-4.

D. NOISE AND VIBRATION

INTRODUCTION

The construction and operation of any power plant creates noise, typically defined as unwanted sound. A combination of different factors, such as loudness, time of day, and proximity to sensitive receptors, determines whether the source of noise will cause significant adverse impacts. In some cases, vibration may be produced by construction activities such as blasting or pile driving and may cause structural damage and annoyance.

This section evaluates the potential impacts of noise and vibration produced during construction and operation of the Palmdale Energy Project¹ (PEP) on adjacent properties and workers at the PEP site. We further review whether the PEP will comply with the laws, ordinances, regulations, and standards (LORS) related to noise and vibration.

This topic was uncontested. Evidence on the topic of Noise and Vibration is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.²

SETTING

The PEP would be built within the city of Palmdale just south of the city of Lancaster. The nearest existing sensitive noise receptor (referred to as R2 in the Final Staff Assessment) is a residence located at 42104 6th Street East, Lancaster, California, approximately 3,500 feet (0.66 miles) northwest of the northernmost PEP boundary.³

The City of Palmdale's General Plan Noise Element requires measures to reduce noise levels to no more than 65 dBA CNEL (Community Noise Equivalent Level), and refers to City of Palmdale Municipal Code section 8.28.030, which restricts construction work within 500 feet of any residence, hotel, motel, or recreational vehicle park to the hours between 6:30 a.m. and 8:00 p.m., Monday through Saturday. The City of Lancaster's General Plan Noise Element establishes a maximum exterior noise level in residential land uses of 65 dBA CNEL and limits construction activities to the hours between sunrise and 8:00 p.m. Subchapter 8.24.040 of the City of Lancaster Municipal Code limits construction within 500 feet of an occupied dwelling, apartment, hotel, mobile

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 4.6-1 and Ex. 6, p. 236 (.pdf).

home or other place of residence to the hours between 7:00 a.m. and 8:00 p.m., Monday through Saturday.⁴

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION⁵

In the 2011 Decision, we reviewed the potential of the PHPP to create direct, indirect, and cumulative noise and vibration impacts during site preparation, construction, and operation. We also analyzed the PHPP's compliance with LORS. We concluded that, with the imposition and implementation of Conditions of Certification **NOISE-1** through **NOISE-7**, the PHPP's potential direct, indirect, and cumulative noise and vibration impacts were less than significant, and found that the PHPP complied with all LORS.⁶

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of the California Environmental Quality Act Guidelines section 15162 are met. The evidence establishes that even with the substitution of equipment and the reconfiguration of the power plant footprint, there would be:

1. No new significant noise and vibration impacts not previously analyzed;
2. No substantial increase in the severity of previously identified noise and vibration impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant noise or vibration impact of the PEP; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁷

⁴ 2011 PHPP Final Decision, p. 8.4-3.

⁵ 2011 PHPP Decision (TN 61876).

⁶ 2011 PHPP Final Decision, pp. 8.4-1 – 8.4-14.

⁷ Pub. Resources Code, § 21166; CEQA Guidelines, § 15162, subd. (a); Ex.500, pp. 4.6-1 – 4.6-3.

The evidence shows that the noise-sensitive receptor previously identified and analyzed in the 2011 Decision remains the most noise-sensitive receptor and there are no new noise-sensitive receptors in the PHPP project area since the issuance of the 2011 Decision.

Due to the elimination of the solar array from the PHPP project, the construction period will be shortened and, thus, noise impacts from construction of the PEP's project construction on the surrounding community and on its construction workers will be below the already less than significant impacts identified in the 2011 Decision. The evidence indicates that construction equipment and methods for the PEP will be similar to the PHPP, thus the vibration from construction of the PEP will also likely not be perceived by any receptor.⁸

Energy Commission staff (Staff) analyzed the Applicant's remodeled operational noise levels. Staff's comparison of the PEP and PHPP indicated that the PEP's operational noise level would be no more than 2 dBA higher than the PHPP's. An increase in the nighttime ambient level that is less than 5 dBA does not represent a significant adverse noise impact.⁹ The PEP may cause a slight increase in the noise levels that would be periodically perceived by the power plant workers, but Condition of Certification **NOISE-5** ensures that the effect is reduced below significant.

The record shows that the PEP will not create new significant environmental impacts or substantial increases in the severity of previously identified significant impacts. The PEP does not propose substantial changes that would require major revisions of the **NOISE AND VIBRATION** analysis contained in the 2011 Decision. Accordingly, we find that no supplementation of the environmental analysis contained in the 2011 Decision is necessary for the PEP's potential direct, indirect, and cumulative noise and vibration impacts.¹⁰

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The evidence establishes that there are not any new LORS that apply to the PEP, nor are there any LORS inapplicable to the 2011 PHPP project that are applicable to the PEP.¹¹

⁸ Ex.500, pp. 4.6-1 – 4.6-3.

⁹ Ex. 500, p. 4.6-2.

¹⁰ Ex.500, p. 4.6-3.

¹¹ *Id.*

The PEP's noise level of 42 dBA Leq complies with both the cities of Palmdale and Lancaster's General Plan Noise Element guidelines of 65 dBA CNEL, or roughly 58 dBA Leq. Further, the record shows that vibration from the PEP would be undetectable by any likely receptor.

CHANGES TO CONDITIONS OF CERTIFICATION

Consistent with the evidence, we have revised the noise threshold in Condition of Certification **NOISE-4** from 40 dBA at R2 to 42 dBA in Condition of Certification **NOISE-4**. No other changes to the Noise and Vibration conditions of certification are necessary. The conditions of certification set forth in the PHPP are still applicable to the PEP and ensure that the PEP will not have significant noise and vibration adverse impacts and will comply with all LORS.¹²

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **NOISE AND VIBRATION** were received since publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Plant found that the Palmdale Hybrid Power Plant conformed with all applicable laws, ordinances, regulations, and standards and that, with the implementation of the conditions of certification, the Palmdale Hybrid Power Plant did not have any significant direct, indirect, or cumulative impacts related to noise and vibration.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines section 15162, and as described in the **INTRODUCTION** section of this Decision, are present regarding noise and vibration.
3. No laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Plant apply to the Palmdale Energy Project.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to noise and vibration.

¹² Ex.500, pp. 4.6-2 – 4.6-3.

2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative noise and vibration impacts.

E. VISUAL RESOURCES

INTRODUCTION

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. 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.¹

This topic was uncontested. Evidence on the topic of Visual Resources is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.²

SETTING

The Palmdale Energy Project³ (PEP) site is located approximately 60 miles north of downtown Los Angeles, in the northernmost portion of the city of Palmdale, east of the intersection of Sierra Highway and East Avenue M. The San Gabriel Mountains are located approximately eight miles to the south of the PEP. The northern boundary of the PEP site is approximately 1,600 feet south of East Avenue M. The land between East Avenue M and the PEP is undeveloped and consists of native and non-native plant communities that include creosote bush scrub, saltbush scrub, and Joshua tree woodland.⁴

For additional information regarding the location and setting of the amended project, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

Relative to Visual Resources, the PEP differs from the previously approved PHPP in the following manner:

1. Eliminates the 250-acre solar array;
2. Reduces the site footprint from 333 acres to 50 acres;
3. Increases the length of the aboveground transmission line to East Avenue M by 1,800 feet;

¹ CEQA Guidelines, §15382 and **Appendix G**, part I.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

⁴ Ex. 500, pp. 4.12-3 – 4.12-4.

4. Replaces the 59-foot-tall, wet-cooling tower (and associated visible water vapor plumes) with a 135-foot-tall, air-cooled condenser (ACC); and
5. Increases the stack height of the heat recovery steam generator (HRSG) from 145 feet to 160 feet.⁵

For information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

SUMMARY OF 2011 DECISION⁶

The Palmdale Hybrid Power Project (PHPP) approved in 2011 (2011 Decision) consists of a hybrid of natural-gas-fired, combined-cycle generating equipment integrated with solar thermal generating equipment to be developed on an approximately 333-acre site. The most visible features of the gas-fired portion of the PHPP included two 145-foot-tall HRSG stacks, one 59-foot-tall, 10-cell cooling tower, two 70-foot tall inlet air filters, and a 70-foot-tall steam turbine generator enclosure. The most visible features of the solar portion consisted of a 250-acre solar field of parabolic solar-thermal collectors and associated heat transfer equipment arranged in rows.⁷

The 2011 Decision analyzed visual impacts from four KOPs. The four KOPs were:

KOP 1 – Looking west toward the PHPP site from East Avenue M;

KOP 2 – Looking south from 30th Street toward East Avenue M and the PHPP site;

KOP 3 – Looking north from Pearblossom Highway toward the transmission line crossing of the highway; and

KOP 4 – Looking east toward the PHPP site near the intersection of Sierra Highway and East Avenue M.

The 2011 Decision found that with the implementation of Conditions of Certification **VIS-1** through **VIS-5**, the impacts of the PHPP on visual resources would be less than significant and that the PHPP would be in conformance with the applicable laws related to visual resources.⁸

ENVIRONMENTAL ANALYSIS

As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of CEQA section 15162 are met. The evidence establishes that, even with the replacement of the 59-foot-

⁵ Ex. 500, p. 4.12-1.

⁶ 2011 PHPP Final Decision (TN 61876).

⁷ Ex. 500, p. 4.12-2.

⁸ *Id.*

tall, wet-cooling tower with a 135-foot-tall ACC, the HRSG increasing from 145 feet tall to 160 feet tall, and the 1,800-foot extension of the transmission line along East Avenue M, there would be:

1. No new significant impacts to visual resources not previously analyzed;
2. No substantial increase in the severity of previously identified environmental impacts;
3. No mitigation measures previously found to be infeasible are now feasible, nor would these infeasible mitigation measures substantially reduce a significant effect of the PEP; and
4. No mitigation measures or alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.⁹

In the 2011 Decision, the Energy Commission found the visual impacts of the PHPP structures as seen from KOPs 1 through 4 to be less than significant with implementation of Condition of Certification **VIS-2**, which minimizes visual intrusion and glare with approved surface colors and finishes.

Visual Resources **Figure 1** shows a visual simulation of the PHPP from KOP 4; KOP 4 was the only KOP analyzed in the 2011 Decision that was not dominated by the solar array and from where the power block could be clearly viewed.¹⁰

⁹ Ex. 500, p. 4.12-3.

¹⁰ Ex. 500, pp. 4.12-3; 4.12-6 – 4.12-7.

Visual Resources Figure 1¹¹
Visual Simulation of PHPP from KOP 4



¹¹ 2011 PHPP Final Decision, p. 8.5-16.

Visual Resources Figure 2¹²
Visual Simulation of PEP from KOP 4



To compare the PHPP's visual effects to the visual effects of the PEP, **Visual Resources Figure 2** depicts the PEP as it would be seen from KOP 4. While the PEP replaces the 59-foot-tall, wet-cooling tower with a 135-foot-tall, air-cooled condenser (ACC), it eliminates the visual effects of the 250-acre solar mirror field. The PEP's power block would otherwise appear similar to the PHPP, but would be rotated 180 degrees.

¹² Ex. 500, p. 4.12-7.

The increased height of the PEP's heat HRSG stack height (from 145 feet to 160 feet) and the 1,800-foot-long extension of the transmission line along East Avenue M would add negligibly to the visual effects of the project. The overall reduced visual effects of the PEP's structures would also be less than significant with implementation of Condition of Certification **VIS-2**, which requires surface treatment of the project structures.¹³

With the reduction of the facility site from 333 acres to 50 acres, the new north boundary for the PEP site will move 1,600 feet south of East Avenue M. The new 20-acre construction laydown is approximately 1,000 feet south of East Avenue M. The native and non-native plant communities between East Avenue M and the construction laydown area disrupts and/or limits surface level viewing from East Avenue M. Therefore, we find that the Condition of Certification **VIS-1** screening of construction activities and equipment on the project site from the views of motorists traveling on East Avenue M will no longer be necessary.¹⁴

Impacts from Visible Water Vapor Plumes

The PEP replaces the PHPP's evaporative cooling tower with an ACC unit. An ACC uses air instead of water to cool super-heated steam exiting the steam turbine. The use of an ACC eliminates the formation of visible plumes.¹⁵

Impacts from Light and Glare

The amended project eliminates 250 acres of parabolic solar-thermal collectors and associated heat transfer equipment. This elimination avoids the collector's specular reflection causing glare onto off-site properties and roads. The removal of the solar field also reduces the number of needed light fixtures that might adversely affect nighttime views. The PEP's impacts from light and glare would be substantially less than that of the PHPP.¹⁶

The evidence establishes that the PEP will not create new significant visual impacts or increase the severity of previously identified significant visual impacts. Therefore, we find that no supplementation of the environmental analysis in the 2011 Decision is necessary for the PEP's impacts to visual resources.

¹³ Ex. 500, p. 4.12-7.

¹⁴ Ex. 500, p. 4.12-4.

¹⁵ *Id.*

¹⁶ *Id.*

COMPLIANCE WITH LAWS, ORDINANCES, REGULATIONS, AND STANDARDS (LORS)

The 2011 Decision identified the LORS applicable to the PHPP project.¹⁷ The evidence establishes that there are no new LORS that apply to the PEP.¹⁸

CHANGES TO CONDITIONS OF CERTIFICATION

Due to the elimination of the solar field and associated heat transfer equipment and reduction in the project footprint, Condition of Certification **VIS-1** is no longer necessary and is deleted. The remaining Conditions of Certification **VIS-2** through **VIS-5** pertain to surface treatment of project structures, construction, permanent lighting, and landscaping, which are still applicable to the PEP and ensure that the PEP will not have significant adverse impacts on visual resources and will comply with all LORS.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **VISUAL RESOURCES** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project found that the Palmdale Hybrid Power Project conformed with all applicable laws, ordinances, regulations, and standards, and that with the implementation of the conditions of certification, the Palmdale Hybrid Power Project did not have any significant direct, indirect, or cumulative impacts to visual resources.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines section 15162, and as described in the **INTRODUCTION** section of this Decision, are present regarding visual resources.
3. No laws, ordinances, regulations, or standards not included in the 2011 Decision certifying the Palmdale Hybrid Power Project apply to the Palmdale Energy Project.

¹⁷ 2011 PHPP Final Decision, pp. 8.5-24 – 8.5-25.

¹⁸ Ex. 500, p. 4.12-2.

CONCLUSIONS OF LAW

1. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the construction and operation of the Palmdale Energy Project will conform with all applicable laws, ordinances, regulations, and standards relating to visual resources.
2. Imposition and implementation of the conditions of certification set forth in **Appendix A** of this Decision ensure that the Palmdale Energy Project will not result in significant direct, indirect, or cumulative impacts to visual resources.

VII. COMPLIANCE MONITORING PLAN

This section reviews the proposed post-certification monitoring system of the Palmdale Energy Project¹ (PEP). California Public Resources Code section 25532 requires that the Energy Commission establish a post-certification monitoring system to ensure that certified 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 the Decision.

This topic was uncontested. Evidence on the topic of Compliance and Closure is contained in Exhibits 1, 2, 3, 4, 6, 43, 46, 56, 500, and 508.²

THE COMPLIANCE MONITORING PLAN AND CONDITIONS OF CERTIFICATION

The Compliance Monitoring Plan is the administrative mechanism used to ensure that a certified power plant is constructed and operating according to all of the conditions of certification in the Energy Commission's Decision. It describes the respective duties and expectations of the project owner and the Energy Commission's Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in a Decision.³

The Compliance Monitoring Plan for the PEP is not a separate document, but rather consists of the conditions of certification contained in **Appendix A**, with Conditions of Certification **COM-1** through **COM-15** focusing on the procedures and methods of compliance.

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 or permanent closure of the PEP.⁴

The Compliance Monitoring Plan is composed of two broad elements. The first element establishes the "General Conditions" (referred to as "Compliance and Closure" in **Appendix A**) that set forth:

- The duties and responsibilities of the CPM, the project owner, delegate agencies, and others;

¹ The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

² 3/22/17 RT 9:3-11; 12:11-12; 51:1.

³ Ex. 500, p. 7.1-1.

⁴ Ex. 500, pp. 7.1-7 – 7.1-9.

- The requirements for handling confidential records and maintaining the compliance record;
- The procedures for settling disputes and making post-certification changes;
- The requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Energy Commission imposed conditions of certification; and
- The requirements for facility closure.⁵

The second general element of the Compliance Monitoring Plan contains the specific conditions of certification that are described within each individual topic area in this Decision and found in **Appendix A**. The individual conditions of certification contain the measures required to mitigate potentially significant project impacts associated with construction, operation, and closure to levels of insignificance. Each condition of certification also includes a verification provision describing the method of assuring that the condition of certification has been satisfied.

The contents of the Compliance Monitoring Plan are intended to be implemented in conjunction with any additional requirements contained in the individual conditions of certification.

CHANGED CONDITIONS OF CERTIFICATION

Energy Commission staff (Staff) submitted changes to the conditions of certification contained in the 2011 Decision to reflect the PEP configuration, current definitions and LORS, clarify roles and responsibilities, and any necessary amendments. The parties have reached agreement on all of the conditions of certification.⁶ We hereby adopt the revised Conditions of Certification **COM-1** through **COM-15** to reflect the changes in definitions, roles, responsibilities, and amendment processing as the Compliance Monitoring Plan for the PEP, along with all conditions of certification contained in this Decision.⁷

⁵ Ex. 500, pp. 7.1-2.

⁶ Exs. 500, pp.7.1-9 – 7.1-35; 3/22/17 RT 10:9 – 11:9; 26:13 -18; 27:25 -28:3; 45:18 -22; 49:15 – 51:4.

⁷ The parties have filed a joint compendium of the conditions (Ex. 508) and the Petitioner filed a stipulation agreeing to the conditions of certification (TN 217544). The conditions of certification for all topics of this Decision may be found in **Appendix A**.

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **COMPLIANCE AND CLOSURE** were received after the publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based upon the evidence, the Energy Commission makes the following findings:

1. Requirements contained in the Compliance Monitoring Plan and in the conditions of certification are intended to be implemented in conjunction with one another.
2. We adopt the revised Conditions of Certification **COM-1** through **COM-15** as the Compliance Plan for the Palmdale Energy Project, along with all conditions of certification contained in this Decision.

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 contained in this Decision ensure that the Palmdale Energy Project will be designed, constructed, operated, and closed in conformity with applicable laws, ordinances, regulations, and standards.

VIII. PROJECT ALTERNATIVES

INTRODUCTION

The California Environmental Quality Act (CEQA) requires an evaluation of the comparative merits of a range of feasible¹ site and facility alternatives that achieve the basic objectives of the Palmdale Energy Project² (PEP), but avoid or substantially lessen potentially significant environmental impacts.³

This topic was uncontested. Evidence on the topic of Project Alternatives is contained in Exhibits 1, 2, 3, 4, 5, 6, 9, 43, 46, 56, 500, and 508.⁴

SETTING

The PEP setting is essentially unchanged from the previously approved Palmdale Hybrid Power Project (PHPP). The PEP will be built on a smaller portion of the PHPP site in an industrial area of Palmdale, California – on 50 acres instead of the 333 acres previously needed for the PHPP.⁵

For additional information regarding the setting of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.

PROJECT DESCRIPTION

The PEP proposes to change the approved PHPP primarily by removing the solar component of the plant and utilizing dry cooling instead of wet cooling. The proposed PEP would increase the available net output from 570 megawatts (MW) to 645 MW, using combined-cycle units similar to the approved project. The PEP would replace previously proposed General Electric gas turbines with Siemens gas turbines. The transmission generator tie-lines connecting to the adjacent substation would add 1,800 feet and three poles along Avenue M to connect with the PEP switchyard's new location.

For additional information regarding the design and features of the PEP, please refer to the **PROJECT DESCRIPTION** section of this Decision.⁶

¹ "Feasible" means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors. (CEQA Guidelines, Cal. Code Regs., tit. 14, § 15364.)

² The Petition to Amend the Palmdale Hybrid Power Project also includes a request to change the name of the project from Palmdale Hybrid Power Project to the Palmdale Energy Project (TN 205640). To avoid confusion, the proposed project is referred to as the Palmdale Energy Project.

³ CEQA Guidelines, §15126.6.

⁴ 3/22/17 RT 9:3-11; 12:11-12; 51:1.

⁵ Ex. 500, p. 6-1.

⁶ *Id.*

SUMMARY OF THE 2011 PHPP DECISION⁷

The 2011 PHPP Decision (2011 Decision) reviewed three alternative sites, five alternative transmission line routes, eight alternative technologies and the “no project” alternative, and concluded that none of the alternative sites would avoid or substantially lessen any significant effects of the PHPP.⁸

Alternative Site 1 is located three miles southeast of the proposed site and south of U.S. Air Force Plant 42. The site would be adjacent to the Palmdale Water Reclamation Plant (PWRP) on East Avenue P and 30th Street East. Alternative Site 1 was eliminated from further consideration during the PHPP screening process because it was not large enough to support the 250-acre solar array field.⁹

Alternative Site 2 is located approximately one mile west of the proposed project site, to the south side of East Avenue M (Columbia Way) between Division Street and 10th Street West in the City of Palmdale. Alternative Site 2 was eliminated from further consideration during the PHPP screening process because it was composed of multiple, privately-owned parcels and the land acquisition process would be problematic; the site was bisected by a major intermittent streambed which regularly fills with water during rainstorms and could lead to erosion and engineering issues, and it would not substantially lessen or eliminate environmental effects at the proposed site.¹⁰

Alternative Site 3 is located approximately 9.5 miles east-southeast of the proposed site. It is bordered by East Avenue P to the south, 110th Street East to the east, East Avenue O to the north, and roughly 105th Street East to the west. Alternative Site 3 was eliminated from further consideration during the PHPP screening process because it would have created greater environmental impacts to biological resources, visual resources, and traffic due to the site’s remote location and lack of existing infrastructure in the area.¹¹

Generation Technology Alternatives

The 2011 Decision evaluated alternative generation technologies that do not burn fossil fuels, including wind generation, biomass generation, geothermal, hydropower, fuel cells, and solar. These alternatives were found to be infeasible, impractical, unable to meet project objectives, or not environmentally preferred.

⁷ 2011 PHPP Final Decision (TN 61876).

⁸ 2011 PHPP Final Decision, pp. 3-1 – 3-18.

⁹ *Id.* at p. 3-8.

¹⁰ *Id.*

¹¹ *Id.*

The 2011 Decision found that the record contained an adequate review of alternative project sites, linears, fuels, technologies, and the “No Project” alternative. The 2011 Decision determined that the use of recycled water was consistent with state law and that neither the site alternatives, nor the alternative fuels and technologies were capable of meeting project objectives. Further, the “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts. Finally, the Energy Commission found that if all the conditions of certification contained in the 2011 Decision were implemented, the construction and operation of the PHPP would not create any significant direct, indirect, or cumulative adverse environmental impacts.¹² The 2011 Decision concluded that the PHPP was environmentally preferable to all alternatives after having reviewed a reasonable range of alternatives.¹³

ENVIRONMENTAL ANALYSIS

CEQA requires that the Energy Commission describe and analyze a range of reasonable alternatives to the PEP that are potentially feasible, would feasibly attain most of the basic objectives of the PEP, and would avoid or substantially lessen any of the PEP’s significant effects.¹⁴ As set forth in the **INTRODUCTION** section of this Decision, the Energy Commission need not repeat an environmental analysis where the conditions of CEQA Guidelines, section 15162, are met.

Energy Commission staff (Staff) testified that the 2011 Decision contains an acceptable analysis of a reasonable range of alternatives to the PHPP, as well as an adequate review of alternative project sites, site configurations, generation technology, and the “No Project” alternative. They further testified that the PHPP analysis and review of alternatives is applicable to the PEP. Staff also included an augmented discussion of preferred resources, which was not considered in the previous alternative assessment for the PHPP.¹⁵ The 2011 Decision further found that:

1. No alternatives previously found to be infeasible are now feasible, nor would these infeasible alternatives substantially reduce the significant effect of the PEP; and
2. No alternatives that are considerably different from those analyzed in the 2011 Decision would substantially reduce one or more significant effects of the PEP on the environment.¹⁶

¹² Ex. 500, p. 6-2.

¹³ *Id.*

¹⁴ CEQA Guidelines, § 15126.6, subd. (a).

¹⁵ Ex. 500, pp. 6-1 – 6-2.

¹⁶ *Id.* at p. 6-2.

We, nonetheless, discuss the alternative sites analysis, alternative technologies, energy storage, and the “No Project” alternative.

Project Objectives

As set forth above, the analysis of any alternative is evaluated against the project objectives.¹⁷ The objectives of the PEP are different from the PHPP due to the removal of the solar component of the project. The applicant provided a series of project objectives which the committee evaluated and reformulated. We find these objectives to be reasonable and list them as follows:

- Provide an efficient, flexible, reliable, and environmentally sound power generating facility to meet future electrical power needs of California;
- Provide flexible capacity, with daily fast start and fast ramping capabilities, to integrate intermittent resources;
- Locate the facility within the boundaries of the City of Palmdale to provide economic development and tax revenue to the city and surrounding areas;
- Site the facility in a location zoned and planned for industrial use;
- Site the facility in a location with ready access to a natural-gas pipeline that can supply the project without requiring significant modifications to the regional gas supply system;
- Design the PEP to minimize water usage as much as practical, and site it in a location with ready access to adequate supplies of non-potable water; and
- Utilize the existing CAISO Large Generator Interconnection Agreement.¹⁸

Alternative Sites Evaluation

As discussed above, the 2011 Decision analyzed three alternative locations for the PHPP and concluded that none of the alternative sites would avoid or substantially lessen any significant effects of the PHPP. Staff testified that the three alternative sites analyzed for the 2011 Project are applicable to the PEP project, still hold true, and do not avoid or substantially lessen any significant effects of the PEP.¹⁹ Our review of the alternatives discussion for the PHPP concludes that it is still current and applicable to the PEP.²⁰

¹⁷ CEQA Guidelines, § 15126.6, subd. (e), (f).

¹⁸ Ex. 1, p. 1-4.

¹⁹ Ex. 500, p. 6-2.

²⁰ Ex. 500, p. 6-2.

Alternative Site 1 was eliminated from further consideration during the PHPP screening process because it was not large enough to support the 250-acre solar array field. Although Alternative Site 1 could accommodate the 50-acre proposed PEP, the evidence establishes that it still would not avoid or substantially lessen any significant effects of the PEP.²¹

Alternative Site 2 was eliminated from further consideration during the PHPP screening process because of land acquisition process, erosion and engineering issues, and it would not substantially lessen or eliminate environmental effects at the proposed site. While the land acquisition process would be simpler for PEP as compared to PHPP, this alternative site would not substantially lessen or eliminate environmental effects of the proposed project.²²

Alternative Site 3 was eliminated from further consideration during the PHPP screening process because it would have created greater environmental impacts to biological resources, visual resources, and traffic due to the site's remote location and lack of existing infrastructure in the area. These issues still hold true for the proposed PEP.²³

Generation Technology Alternatives

Staff testified that, similar to the findings for the PHPP, the alternative renewable energy generation technologies analyzed would not meet the new objectives identified for the PEP.²⁴ The assessment of the approved PHPP did not consider preferred resources other than renewable generation as alternatives to the project. For the PEP, Staff also discussed preferred resources and evaluated energy storage as an alternative.²⁵

Multi-hour energy storage is expected to play a major role in the integration of the large quantities of solar generation that are anticipated over the next 20 years as California moves toward a low-carbon electricity system. Surplus generation during mid-day hours will be stored for several hours before being injected in the grid during early evening hours near, at, or after sundown when residential and commercial loads remain at peak or near-peak levels.²⁶

While energy storage can provide many of the capacity-related reliability services that are currently provided by natural-gas-fired generation, energy storage is not able to equally provide dispatchable capacity and reliability services. In order to serve as a replacement for natural-gas-fired generation, energy storage would need to be

²¹ Ex. 500, p. 6-2.

²² Ex. 500, pp. 6-2 – 6-3.

²³ Ex. 500, p. 6-3.

²⁴ *Id.*

²⁵ Ex. 500, pp. 6-5 – 6-7.

²⁶ *Id.*

interconnected on the utility-side of the meter and controlled by the independent system operator.²⁷

The evidence establishes that energy storage that is able to provide reliability services is costlier than natural-gas-fired generation. In addition, while the introduction of energy storage can reduce GHG emissions, this assumes the routine availability of surplus renewable generation during hours in which energy can be injected into storage, which is not expected to be the case for several years. In the interim, energy storage is likely to have an adverse effect on GHG emissions levels due to “round-trip inefficiency” (the losses incurred in the course of storing and re-injecting electricity produced by natural-gas-fired generators).²⁸ Therefore, given today’s electricity system and technologies, we find that energy storage is not an alternative to the PEP.

No Project Alternative

CEQA requires an evaluation of the “No Project” alternative, “... to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project.”²⁹ The “No Project” analysis assumes: (a) that baseline environmental conditions would not change because the proposed project would not be installed; and (b) that the events or actions reasonably expected to occur in the foreseeable future would occur if the project were not approved.³⁰

The analysis for the proposed PEP considers what would be reasonably expected to occur in the foreseeable future if the project was denied based on current plans and consistent with available infrastructure and community services. For the purposes of this analysis, the “No Project” alternative is considered to be the construction and operation of the previously approved PHPP in the 2011 Decision.³¹

Based on previous conclusions regarding environmental impacts of the PHPP summarized in the 2011 Decision, the proposed PEP will reduce environmental impacts in all resource areas except for air quality. As discussed in the **Air Quality** chapter of this decision, the PEP’s maximum annual operation emissions of nitrogen oxides, carbon monoxide, volatile organic compounds, and sulfur oxides could be greater than the PHPP. The maximum annual operations emissions for PEP’s particulate matter are estimated to be less than the PHPP’s.³² However, the air quality conditions of certification listed in **Appendix A** reduce air quality impacts to less than significant levels. Therefore, we find that although the “No Project” alternative (construction and

²⁷ Ex. 500, pp. 6-5 – 6-7.

²⁸ *Id.*

²⁹ Cal. Code Regs., tit. 14, § 15126.6(e)(1).

³⁰ Cal. Code Regs. tit. 14, § 15126.6(e)(2).

³¹ Ex. 500, p. 6-4.

³² Ex. 500, p. 4.1-25.

operation of the previously approved PHPP) could meet the project objectives for the PEP, the “No Project” alternative would result in overall greater environmental impacts as compared to the proposed PEP.³³

AGENCY AND PUBLIC COMMENTS

No agency or public comments on the topic of **ALTERNATIVES** were received after publication of the Final Staff Assessment or during the Evidentiary Hearing.

FINDINGS OF FACT

Based on the evidence, the Energy Commission makes the following findings:

1. The 2011 Decision certifying the Palmdale Hybrid Power Project contained an acceptable analysis of a reasonable range of alternatives that are still applicable to the Palmdale Energy Project.
2. None of the factors that require a subsequent or supplemental environmental analysis, as set forth in the California Environmental Quality Act Guidelines section 15162 are present.
3. At the time of this decision, energy storage is not a superior alternative to the Palmdale Energy Project.
4. There is no feasible alternative to the Palmdale Energy Project that is environmentally superior.

CONCLUSIONS OF LAW

1. If all conditions of certification contained in this Decision are implemented, construction and operation of the PEP will not create any significant direct, indirect, or cumulative adverse environmental impacts.
2. This Decision 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. No conditions of certification are required for this topic.

³³ Ex. 500, pp. 6-4 – 6-5.

CONDITIONS OF CERTIFICATION

[The conditions of certification contained in
this Appendix supersede all prior conditions
of certification.]

APPENDIX A

PALMDALE ENERGY PROJECT (08-AFC-8C)
CONDITIONS OF CERTIFICATION
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COMPLIANCE MONITORING PLAN

COM-1 Unrestricted Access

The project owner shall ensure that the CPM, responsible staff, and delegate agencies are granted unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on site for the purpose of conducting facility 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 staff, delegated agencies, or consultants.

COM-2 Compliance Record

The project owner shall maintain electronic copies of all project files and submittals 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:

1. The facility's Application for Certification;
2. All amendment petitions, staff approvals, and Energy Commission 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 design 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.

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 amendment process, particularly if construction is planned to commence shortly after certification.

A cover letter 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 condition(s) 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 distance 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 notification that the actions required by the verification were satisfied by the project owner or an agent of the project owner. All submittals shall be accompanied by an electronic copy on an electronic storage medium or by e-mail as agreed upon by the CPM. If hard copy submittals are required, they should be addressed as follows:

[Insert Name], Compliance Project Manager
Palmdale Energy Project (08-AFC-9C)
California Energy Commission
1516 Ninth Street (MS-2000)

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 an authorization-to-construct 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 PTA approval, 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 compliance verifications prior to these authorizations is at the owner's own risk. Any approval by staff prior to project certification is subject to change, based upon the Commission Decision or amendment thereto, and early staff compliance approvals do not imply that the Energy Commission 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. A brief description of the verification action or submittal required by the condition;
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 Chief Building Official (CBO), 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 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

The first MCR is due one month following the docketing of the project's 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 Plan.)

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 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 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, and 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

Periodic and Annual Compliance Reports

After construction is complete, the project must submit searchable electronic ACRs to the CPM as well as other 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 or decommissioning reports 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. Documents required by specific conditions to be submitted along with the ACR (each of these items shall be identified in the transmittal letter

with the conditions it satisfies and be submitted as an attachment to the ACR);

4. A cumulative list of all post-certification changes approved by the Energy Commission 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-8 Confidential Information

Any information that the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with an application for confidentiality pursuant to California Code of Regulations, title 20, section 2505(a).

COM-9 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 a compliance fee which is adjusted annually. The initial payment is due on the date the Energy Commission files its final Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-10 Amendments and Staff Approved Project Modifications. The project owner shall petition the Energy Commission pursuant to California Code of Regulations, title 20, 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. Section 1769 details the

required contents for a Petition to Amend an Energy Commission Decision.

A project owner is required to submit a five thousand (\$5,000) dollar fee for every Petition to Amend a previously certified facility, pursuant to Public Resources Code section 25806(e). If the actual amendment processing costs exceed \$5,000.00, the total Petition to Amend reimbursement fees owed by a project owner will not exceed seven hundred fifty-thousand dollars (\$750,000), adjusted annually.

COM-11 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 site shall post the telephone number on site 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 days of receipt, the project owner shall report and provide copies to the CPM of 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 (Attachment A) at the end of this Compliance Plan. Additionally, the project owner must include in the next subsequent 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-12 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 24-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, Waste Management, Hazardous Materials Management, and Worker Safety).

COM-13 Incident-Reporting Requirements. The project owner shall notify the CPM, by telephone and e-mail, within one hour after it is safe and feasible, upon

identification of any incident at the power plant or appurtenant facilities that results or could result in any of the following:

1. A reduction in the maximum output capability of a generating unit of at least 10 MW or five percent, whichever is greater, that lasts for 15 minutes or longer (or such values as trigger CAISO no-prior-notice outage reporting requirements under any subsequent modifications to CAISO tariff 9.3.10.3.1); and a facility's ability to respond to dispatch (excluding forced outages cause by protective equipment or other typically encountered shutdown events);
2. Potential health impacts to the surrounding population or any release that could result in an off-site odor issue;
3. Notification to or response by any off-site emergency response federal, state, or local agency regarding a fire, hazardous materials release, on-site injury, or any physical or cyber security incident.

The notice 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 Hazardous Materials Management and Waste Management). Within one week of the incident, the project owner shall submit to the CPM a detailed incident report, which includes, as appropriate, the following information:

- a. A brief description of the incident, including its date, time, and location;
- b. A description of the cause of the incident or likely causes if it is still under investigation;
- c. The location of any off-site impacts;
- d. Description of any resultant impacts;
- e. A description of emergency response actions associated with the incident;
- f. Identification of responding agencies;

- g. Identification of emergency notifications made to federal, state, and/or local agencies;
- h. Identification of any hazardous materials released and an estimate of the quantity released;
- i. A description of any injuries, fatalities, or property damage that occurred as a result of the incident;
- j. Fines or violations assessed or being processed by other agencies;
- k. Name, phone number, and e-mail address of the appropriate facility contact person having knowledge of the event;
- l. Corrective actions to prevent a recurrence of the incident; and
- m. The project owner shall maintain all incident report records for the life of the project, including closure. After the submittal of the initial report for any incident, the project owner shall submit to the CPM copies of incident reports within 24 hours of a request.

COM-14 Non-Operation and Repair/Restoration Plans. If the facility ceases operation temporarily (excluding planned 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, interested agencies, and nearby property owners. 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 or not 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 Energy Commission 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 Energy Commission review and approval.

COM-15: Facility Closure Planning.

To ensure that a facility's eventual permanent closure and long-term maintenance do not pose a threat to public health and safety and/or to

environmental quality, the project owner shall coordinate with the Energy Commission to plan and prepare for eventual permanent closure.

A. Provisional Closure Plan

To assure satisfactory long-term site maintenance and adequate closure for “the whole of a project,” the project owner shall include within the first ACR a Provisional Closure Plan for CPM review and approval. The CPM may require Provisional Closure Plan updates to reflect project modifications approved by the Energy Commission. The Provisional Closure Plan shall consider applicable final closure plan requirements, including interim and long-term maintenance costs and reflect that qualified personnel will carry out permanent closure and long-term maintenance activities.

The Provisional Closure Plan shall reflect the most current regulatory standards, best management practices, and applicable LORS, and provide for a phased-closure process and include, but not be limited to:

1. Comprehensive scope of work;
2. Dismantling and demolition;
3. Recycling and site clean-up;
4. Mitigation and monitoring direct, indirect, and cumulative impacts;
5. Site remediation and/or restoration;
6. Interim and long-term operation monitoring and maintenance, including long-term equipment replacement costs; and
7. Contingencies.

B. Final Closure Plan and Cost Estimate

No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, the project owner shall submit for Energy Commission review and approval, a Final Closure Plan and Cost Estimate, which includes any long-term site maintenance and monitoring. Final Closure Plan and Cost Estimate 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 Energy Commission 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 and itemized budget for permanent plant closure and long-term 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 including ongoing testing or monitoring protocols;
 - E. Exterior maintenance, including paint, landscaping, and fencing;
 - F. Site security and lighting; and
 - G. Any contingencies.
5. A Final Cost Estimate for all closure activities, by phases, including long-term site monitoring and maintenance costs, and long-term equipment replacement;
6. A schedule projecting all phases of closure activities for the power plant site and all appurtenances constructed as part of the Energy Commission certified project;
7. 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; additionally, for any facility that permanently ceased

operation prior to submitting a Final Closure Plan and Cost Estimate 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 long-term 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:
 - A. Traffic;
 - B. Noise and vibration;
 - C. Soil erosion;
 - D. Air quality degradation;
 - E. Solid waste;
 - F. Hazardous materials;
 - G. Waste water discharges; and
 - H. Contaminated soil.

12. Identification of all current conditions of certification, LORS, federal, state, regional, and local planning efforts applicable to the facility, and proposed strategies for achieving and maintaining compliance during closure;
13. Updated mailing list and Listserv of all responsible agencies, potentially interested parties, and property owners within one mile of the facility;
14. Identification of alternatives to plant closure and assessment of the feasibility and environmental impacts of these; and
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, Waste Management, Hazardous Materials Management, and Worker Safety).

If the Energy Commission-approved Final Closure Plan and Cost Estimate are not initiated within one year of its approval date, it shall be updated and re-submitted to the Energy Commission 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 Energy Commission may initiate correction actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

Prior to submittal of the facility's Final Closure Plan to the Energy Commission, the project owner and the CPM will hold a meeting to discuss the specific contents of the plan. In the event that significant issues are associated with the plan's approval, the CPM will hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
On-line Date	
POWER PLANT SITE ACTIVITIES	
Start Site Assessment/Pre-construction	
Start Site Mobilization/Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Turbine	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start Transmission Line Construction	
Complete Transmission Line Construction	
Synchronization with Grid and Interconnection	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
Complete Gas Pipeline Construction	
WATER SUPPLY LINE ACTIVITIES	
Start Water Supply Line Construction	
Complete Water Supply Line Construction	

COMPLAINT LOG NUMBER: _____ DOCKET NUMBER: _____

ATTACHMENT A
INFORMAL COMPLAINT REPORT AND RESOLUTION FORM

PROJECT NAME: _____

COMPLAINANT INFORMATION

NAME: _____ PHONE NUMBER: _____

ADDRESS: _____

COMPLAINT

DATE COMPLAINT RECEIVED: _____ TIME COMPLAINT RECEIVED: _____

COMPLAINT RECEIVED BY: _____ TELEPHONE IN WRITING (COPY ATTACHED)

DATE OF FIRST OCCURRENCE: _____

DESCRIPTION OF COMPLAINT (INCLUDING DATES, FREQUENCY, AND DURATION):

FINDINGS OF INVESTIGATION BY PLANT PERSONNEL:

DOES COMPLAINT RELATE TO VIOLATION OF A CEC REQUIREMENT? YES NO

DATE COMPLAINANT CONTACTED TO DISCUSS FINDINGS: _____

DESCRIPTION OF CORRECTIVE MEASURES TAKEN OR OTHER COMPLAINT RESOLUTION:

DOES COMPLAINANT AGREE WITH PROPOSED RESOLUTION? YES NO

IF NOT, EXPLAIN: _____

CORRECTIVE ACTION

IF CORRECTIVE ACTION NECESSARY, DATE COMPLETED: _____

DATE FIRST LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

DATE FINAL LETTER SENT TO COMPLAINANT (COPY ATTACHED): _____

OTHER RELEVANT INFORMATION: _____

"This information is certified to be correct."

PLANT MANAGER SIGNATURE: _____ DATE: _____

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING PHOTO/DOCUMENTATION, AS REQUIRED)

FACILITY DESIGN CONDITIONS OF CERTIFICATION

Following are the existing conditions of certification applicable to the PEP with the following revisions. These revisions include the following:

- The applicable version and section references of the CBSC have been updated to 2013;
- Condition of Certification **GEN-2** has been updated to reflect the equipment proposed for the amended project, as specified in **GEN-2, Facility Design Table 2: Major Structures and Equipment List**; and
- Condition of Certification **ELEC-1** refers to 13.8-kV systems. The PEP would use Siemens equipment instead of the General Electric equipment selected for PHPP and therefore references to 13.8-kV voltages should be replaced with 18 kV; **ELEC-1** has been revised accordingly.

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2013 California Building Standards Code (CBSC), also known as California Code of Regulations title 24, which encompasses the California Building Code (CBC), California 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 all other applicable engineering laws, ordinances, regulations and standards (LORS) in effect at the time initial design plans are submitted to the chief building official (CBO) for review and approval (the CBSC 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, demolition, repair, or maintenance of the completed facility (2013 CBC, Appendix Chapter 1, section 1.1.3 Scope). All transmission facilities (lines, switchyards, switching stations, and substations) are covered in the conditions of certification in the **Transmission System Engineering** section of this Decision.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2013 CBSC is in effect, the 2013 CBSC 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, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO (2013 CBC, Appendix chapter 1, section 111, Certificate of Occupancy). Once the Certificate of Occupancy 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 CBO approval for compliance with the above codes. The CPM will then determine if the CBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, master drawing, and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing, and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **Facility Design Table 2** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

Facility Design Table 2
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Raw and Fire Water Storage Tank Foundation and Connections	1
Demineralized Water Tank Foundation and Connections	1
Fuel Gas Compressor Foundations and Connections	1
Fuel Gas Compressor Building Foundations	1
Combustion Turbine Wash Drain Tank Foundation and Connections	2
Closed Cooling Water Fin-Fan Coolers Foundation and Connections	1
Air Cooled Condenser Structure, Foundations and Connections	1
Condensate Return Tank Foundations and Connections	1
Fire Pump Module Foundation and Connections	1
Admin/Control Building Warehouse Structure, Foundation and Connections	1
Water Treatment Module Foundation and Connections	1
Water Treatment Module Area MCC	1
Sampling Container Foundations and Connections	1
Laboratory Container Foundations and Connections	1
STG Power Control Center Foundation and Connections	1
Cycle Chemical Feed Module Foundation and Connections	1
Ammonia Storage Foundation and Connections	1
HRSG Structure, Foundation and Connections	2
CEMS Foundation and Connections	2
Combustion Turbine Generator Foundation and Connections	2
Combustion Turbine Inlet Air Filter Foundation and Connections	2
Fuel Gas Filter/separator Foundation and Connections	2
Fuel Gas Pre-heater Foundation and Connections	2
Rotor Air Cooler Foundations and Connections	2
CT Lube Oil Skid and Coolers Foundations and Connections	2
Auxiliary Transformer Foundation and Connections	2
Generator Step-Up Transformer Foundations and Connections	3
Oil/water Separator Foundation and Connections	1
Emergency Shutdown Generator Foundation and Connections	1
CT Electrical Package	2
MV Switchgear Module Foundation and Connections	2
BOP Power Control Center	1
Air Cooled Condenser Power Control Center	1
Switchyard Module Foundation and Connections	1
Steam Turbine Lube Oil Skid Foundation and Connections	1
Steam Turbine Generator Foundation and Connections	1
Steam Turbine Generator Enclosure/Building Foundations and Connections	1
Generator Circuit Breakers	2

Equipment/System	Quantity (Plant)
Auxiliary Boiler Foundations and Connections	1

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO, in accordance with the 2013 CBC, section 109. These fees may be based on the value of the facilities reviewed, on hourly rates, or may be otherwise agreed upon by the project owner and the CBO.

Verification: A copy of the contract between the project owner and the CBO shall be submitted to the CPM. The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report 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, structural engineer, or civil engineer, as the resident engineer in charge of the project (2013 California Administrative Code, section 4-209, Designation of Responsibilities). All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the conditions of certification in the **Transmission System Engineering** section of this Decision.

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 CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to CBO 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 CBO 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 CBO 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 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 CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Verification: At least 30 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO 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 CBO's approvals of the resident engineer 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 has five days to submit the resume and registration number of the newly-assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO'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 power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California.) All transmission facilities (lines, switchyards, switching stations, and substations) are handled in the conditions of certification in the **Transmission System Engineering** section of this Decision.

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, power plant 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 CBO for review and approval the names, qualifications, and registration numbers of all responsible engineers assigned to the project (2013 CBC, Appendix chapter 1, section 104, Duties and Powers of Building Official).

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 CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

A. The civil engineer shall:

1. 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;
2. 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 CBO. At a minimum, these include: grading; site preparation; excavation; compaction; construction of secondary containment, foundations, erosion and sedimentation control structures; drainage

facilities; underground utilities; culverts; site access roads; sanitary sewer systems; and

3. 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.
- B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:
 1. Review all the engineering geology reports;
 2. 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 (2013 CBC, chapter 18, section 1803 and chapter 18A, section 1803A Geotechnical Investigations);
 3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2013 CBC, chapter 17, section 1704, Special Inspection (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and
 4. Recommend field changes to the civil engineer and resident engineer.

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 (2013 CBC, Appendix chapter 1, section 115, Stop Work Orders).

- C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and

2. Be present, as required during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2013 California Administrative Code, section 4-211, Observation and Inspection of Construction (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;
2. Provide consultation to the resident engineer during design and construction of the project;
3. Monitor construction progress to ensure compliance with engineering LORS;
4. Evaluate and recommend necessary changes in design; and
5. Prepare and sign all major building plans, specifications, and calculations.

E. The mechanical engineer shall be responsible for, and sign and stamp a statement with each mechanical submittal to the CBO, stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

F. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO 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 within a project owner- and CBO-approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO 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 CBO's approvals of the responsible 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 resume and registration number of the newly-assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, 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 2013 CBC, chapter 17, section 1704, Special Inspections; chapter 17A, section 1704A, Special Inspections; and Appendix chapter 1, section 110, Inspections. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions of certification in the **Transmission System Engineering** section of this Decision.

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 CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Observe the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and resident engineer. All discrepancies shall be brought to the immediate attention of the resident engineer for correction, then, if uncorrected, to the CBO and the CPM for corrective action (2013 CBC, chapter 17, section 1704.2.4, Report Requirements); and
4. Submit a final signed report to the resident engineer, CBO, 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 CBC.

Verification: At least 15 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO 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 CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly-assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO'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 CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions (2013 CBC, chapter 17, section 1704.2.4, Report Requirements). The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification and, if appropriate, applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. 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 CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request that the CBO inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO'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 an alternative site approved by the CPM during the operating life of the project (2013 CBC, 1.8.4.3.1, Retention of Plans). Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO (with a copy to the CPM) in the next monthly compliance report: (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 CBO 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 (Adobe .pdf 6.0), with restricted (password-protected) printing privileges on archive quality compact discs.

CIVIL-1 The project owner shall submit to the CBO 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 investigation reports required by the 2013 CBC, chapter 18, section 1803.6 Reporting, and section 1803, Geotechnical Investigation.

Verification: At least 15 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of site grading, the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

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 CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area (2013 CBC, Appendix chapter 1, section 115, Stop Work Orders).

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 CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2013 CBC, Appendix chapter 1, section 110, Inspections, and chapter 17, section 1704, Special Inspections. All plant site-grading operations, for which a grading permit is required, shall be subject to inspection by the CBO.

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 CBO, and the CPM (2013 CBC, chapter 17, section 1704.2.4, Report Requirements). The project owner shall prepare a written report, with copies to the CBO 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 CBO 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 CBO and the CPM. A list of NCRs for the reporting month shall also be included in the following monthly compliance report.

CIVIL-4 After completion of finished grading and erosion, and sedimentation control and drainage work, the project owner shall obtain the CBO'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 his/her area of responsibility was done in accordance with the final approved plans (2013 CBC, chapter 17, section 1703.2, Written Approval).

Verification: Within 30 days (or within a project owner- and CBO-approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO 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, along with a copy of the

transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans, and drawings for project structures. Proposed lateral force procedures, designs, plans, and drawings shall be those for the following items (from **Facility Design Table 2** above):

1. Major project structures;
2. Major foundations, equipment supports, and anchorage; and
3. Large field-fabricated tanks.

Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO 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 (2013 CBC, Appendix chapter 1, section 104.1, Duties and Powers of Building Official, 105, Permits);
3. Submit to the CBO 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 (2013 CBC, Appendix chapter 1, section 107.5 Retention of Construction Documents);

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 (2013 CBC, Appendix chapter 1, section 107.3.4, Design Professional in Responsible Charge); and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS (2013 CBC, Appendix chapter 1, section 107.3.4, Design Professional in Responsible Charge).

Verification: At least 60 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2** above, the project owner shall submit to the CBO 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 monthly compliance report, a copy of a statement from the CBO 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 CBO the required number of sets of the following documents related to work that has undergone CBO 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 the 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 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 2013 CBC, chapter 17, section 1704, Special Inspections and Structural Observations.

Verification: If a discrepancy is discovered in any of the above data, 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 CBO, with a copy of the transmittal letter to the CPM (2013 CBC, chapter 17, section 1704.2.4, Report Requirements). The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM. The project owner shall transmit a copy of the CBO'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 necessary to obtain the CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2013 CBC, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing (2013 CBC, Appendix chapter 1, section 107, Submittal Documents; 2013 California Administrative Code, section 4-215, Changes in Approved Drawings and Specifications).

Verification: On a schedule suitable to the CBO, the project owner shall notify the CBO 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 CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2013 CBC, shall, at a minimum, be designed to comply with H-2 Occupancy Category of the 2013 CBC.

Verification: At least 30 days (or within a project owner- and CBO-approved alternate 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 CBO 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 CBO approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of

the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility Design Table 2**, Condition of Certification **GEN-2** above. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection and approval of that construction (2013 CBC, Appendix chapter 1, section 107, Submittal Documents; section 110, Inspections; section 105, Permits; 2013 California Plumbing Code, section 301, Materials).

The responsible mechanical engineer shall stamp and sign all plans, drawings, and calculations for the major piping and plumbing systems, subject to CBO design review and approval, and submit a signed statement to the CBO when the proposed piping and plumbing systems have been designed, fabricated, and installed in accordance with all of the applicable laws, ordinances, regulations, and industry standards (2013 CBC, Appendix chapter 1, section 107.3.4, Design Professional in Responsible Charge), which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code)
- ANSI/NFPA Z223.1 (Fuel Gas Piping Code)
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code)
- ANSI B31.8 (Gas Transmission and Distribution Piping Code)
- NACE R.P. 0169-83
- NACE R.P. 0187-87
- Title 24, California Code of Regulations, part 5 (California Plumbing Code)
- Title 24, California Code of Regulations, part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems)
- Title 24, California Code of Regulations, part 2 (California Building Code)
- Los Angeles County codes

- City of Palmdale codes

The CBO may deputize inspectors to carry out the functions of the code enforcement agency (2013 Appendix chapter 1, section 103.3, Deputies).

Verification: At least 30 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 2** Condition of Certification **GEN-2** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations 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 monthly compliance report. The project owner shall transmit to the CPM in the monthly compliance report following completion of any inspection a copy of the transmittal letter conveying the CBO's inspection approvals.

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal/OSHA) prior to operation the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal/OSHA inspection of that installation (2013 CBC, Appendix chapter 1, section 110, Inspections).

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

Verification: At least 30 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval the above-listed documents including a copy of the signed and stamped engineer's certification with a copy of the transmittal letter to the CPM.

The project owner shall transmit to the CPM in the monthly compliance report following completion of any inspection a copy of the transmittal letter conveying the CBO's and/or Cal/OSHA inspection approvals.

MECH-3 The project owner shall submit to the CBO 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 CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO'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 CBO that the proposed final design plans, specifications, and calculations conform with the applicable LORS (2013 CBC, Appendix chapter 1, section 110.3.7, Energy Efficiency Inspections; section 107.3.4, Design Professionals in Responsible Charge).

Verification: At least 30 days (or within a project owner- and CBO-approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO 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 CBC 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 or higher (see a representative list, below) the project owner shall submit, for CBO 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 CBO inspect the installation to ensure compliance with the requirements of applicable LORS. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in conditions

of certification in the **Transmission System Engineering** section of this Decision.

A. Final plant design plans shall include:

1. A one-line diagram for the 18-kV, 4.16-kV, and 480-V systems;
2. System grounding drawings;
3. A lightning protection system; and
4. A hazard area classification plan.

B. Final plant calculations must establish:

1. Short-circuit ratings of plant 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 18-kV, 4.16-kV and 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 monthly compliance report:

1. Receipt or delay of major electrical equipment;
2. Testing or energization 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 Energy Commission decision.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. 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 monthly compliance report.

POWER PLANT EFFICIENCY CONDITIONS OF CERTIFICATION

There are no conditions of certification for **POWER PLANT EFFICIENCY**.

POWER PLANT RELIABILITY CONDITIONS OF CERTIFICATION

There are no conditions of certification for **POWER PLANT RELIABILITY**.

TRANSMISSION SYSTEMS ENGINEERING CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall furnish to the CPM and to the CBO 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 Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

Verification: Prior to the start of construction, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO 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 CBO 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, 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 TSE facilities.

The project owner shall submit to the CBO 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 CBO for review and approval. The project owner shall notify the CPM of the CBO'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 CBO 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 CBO'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 CBO for review and approval. The project owner shall notify the CPM of the CBO'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 CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action (2001 California Building Code, chapter 1, section 108.4, approval required; chapter 17, section 1701.3, *Duties and Responsibilities of the Special Inspector*; Appendix chapter 33, section 3317.7, *Notification of Noncompliance*). The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and refer to this condition of certification.

Verification: The project owner shall submit a copy of the CBO'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 of the reason for the disapproval, along with the revised corrective action required to obtain the CBO'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 CBO. 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 CBO 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;
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 CBO 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 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 CBO. Once approved, the project owner shall inform the CPM and CBO 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 CBO for review and approval.

The power plant outlet line shall meet or exceed the electrical, mechanical, civil, and structural requirements of CPUC General Order 95; CPUC General Order 128 or National Electric Safety Code (NESC); California Code and Regulations, 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.

1. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.
2. 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.
3. The project conductors shall be sized to accommodate the full output of the project.
4. Termination facilities shall comply with applicable PG&E interconnection standards.
5. The project owner shall provide to the CPM:
 - A. The Special Protection System (SPS) 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;
 - C. The final SCE Right-of-Way Study;
 - D. A copy of the Federal Energy Regulatory Commission executed LGIA signed by the California ISO, SCE, and the project owner; and
 - E. A letter from the DWR indicating that DWR has been consulted with and has coordinated the planned outages associated with the

replacement and reconductoring of the Pearblossom-Vincent 230 kV line to have no adverse impact to DWR's operations and determined the outages to be acceptable.

Verification: Prior to the start of construction or start of modification of transmission facilities, the project owner shall submit to the CBO for approval:

1. Design drawings, specifications, and calculations conforming with CPUC General Order 95, CPUC General Order 128, or National Electric Safety Code (NESC), California Code and Regulations, title 8, articles 35, 36, and 37 of the *High Voltage Electric Safety Orders* CA ISO standards, National Electric Code (NEC) and related industry standards for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;
2. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"¹ 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, CPUC General Order 128, or National Electric Safety Code (NESC), California Code and Regulations 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;
3. 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 in Condition of Certification **TSE-5 a) through e)**;
4. The Special Protection System (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM;
5. 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;

¹ Worst-case condition's for the foundations would include for instance, a dead-end or angle pole.

6. The final SCE Right-of-Way Study;
7. A copy of the Federal Energy Regulatory Commission executed LGIA signed by the California ISO, SCE, and the project owner; and
8. A signed letter from the CDWR indicating that the planned outages associated with the replacement and reconductoring of the Pearblossom to Vincent 230 kV line are acceptable.

Prior to the start of construction of or modification of transmission facilities, the project owner shall inform the CBO and the CPM of any anticipated changes to the design that are different from the design previously submitted and approved, and shall submit a detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change to the CPM and CBO for review and approval.

TSE-6 The project owner shall provide the following Notice to the California Independent System Operator (California ISO) prior to synchronizing the facility with the California Transmission system:

1. At least one week prior to synchronizing the facility with the grid for testing provide the California ISO a letter stating the proposed date of synchronization; and
2. At least one business day prior to synchronizing the facility with the grid for testing provide telephone notification to the California ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week prior to initial synchronization with the grid. The project owner shall contact the California ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-7 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, California Code of Regulations title 8, articles 35, 36, and 37 of the "High Voltage Electric Safety Orders" applicable interconnection standards, and NEC and related industry standards. In case of non-conformance, the project owner shall inform the

CPM and CBO in writing within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

1. "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, California Code of Regulations title 8, articles 35, 36, and 37 of the "High Voltage Electric Safety Orders" and applicable interconnection standards, and NEC related industry standards.

An "as built" engineering description of the mechanical, structural, and civil portion of the transmission 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 transmission line according to the requirements of California Public Utility's GO-95, GO-128, GO-131-D, GO-52, Title 8, California and Group 2. High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and SCE's EMF reduction guidelines.

Verification: At least 30 days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California 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 every reasonable effort will be made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the chosen line option or associated switchyard.

Verification: At least 30 days before starting operation of either line option, the project owner shall submit to the CPM a letter signed by a California registered electrical engineer affirming the project owner's intention to comply with this requirement.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity along the route for which the applicant provided specific estimates. The measurements should be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronics Engineers measurement procedures. These 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-energization measurements with the CPM within 30 days after completion of the measurements.

TLSN-4 The project owner shall ensure that the rights-of-way of those portions of the transmission line that are under the owner's control are kept free of combustible materials as required under the provisions of section 4292 of the of the Public Resources Code and California Code of Regulations, title 14, section 1250.

Verification: During the first five years of operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the right-of-way and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership.

Verification: At least 30 days before the line is energized, the project owner shall transmit to the CPM a letter confirming the intention to comply with this condition.

GREENHOUSE GAS EMISSIONS CONDITIONS OF CERTIFICATION

There are no conditions of certification for **GREENHOUSE GAS EMISSIONS**.

AIR QUALITY CONDITIONS OF CERTIFICATION

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM 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 and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, including project-related mitigation such as road paving, 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. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance.

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, AQ-SC5, AQ-SC6, AQ-SC7 and AQ-SC8**. The AQCMP shall include a Monthly Compliance Report (MCR). The project owner shall provide a MCR during construction and commissioning including information necessary to demonstrate compliance with the conditions of certification.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM and Antelope Valley Air Quality Management District (District) for approval. The CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance. The project owner shall submit the MCR to the CPM and District if requested by the District no later than 30 days following the end of each calendar month.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of minimizing fugitive dust emissions created from

construction activities and preventing all fugitive dust plumes from leaving the project site and linear facility routes. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

A. Deleted.

- B. All disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.
- C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.
- D. Visible speed limit signs shall be posted at the construction site entrances.
- E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.
- F. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.
- G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.
- H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.
- I. Construction areas adjacent to any paved roadway shall be provided with sandbags or other similar measures as specified in the Storm Water Pollution Prevention Plan (SWPP) to prevent run-off to roadways.
- J. All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.
- K. 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 at least twice daily (or 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.

- L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.
- M. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be covered, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to minimize fugitive dust emissions. A minimum freeboard height of two feet will be required on all bulk materials transport.
- N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.
- O. Disturbed areas will be re-vegetated as soon as practical.

Verification: The AQCMM shall include in the MCR:

1. A summary of all actions taken to maintain compliance with this condition;
2. Copies of any complaints filed with the District in relation to project construction; and
3. Any other documentation deemed necessary by the CPM, District or 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 Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported: (1) off the project site; (2) 200 feet beyond the centerline of the construction of linear facilities; or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes 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 owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that 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 MCR to include:

1. A summary of all actions taken to maintain compliance with this condition;
2. Copies of any complaints filed with the District in relation to project construction; and
3. Any other documentation deemed necessary by the CPM or 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 MCR, a construction mitigation report that demonstrates compliance with the following mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the following mitigation measures shall require prior CPM notification and approval:

- A. 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;.
- B. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 4 or 4i California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, title 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. This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction equipment rental firms. In the event that a Tier 4 or 4i engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 3 engine, or an engine that is 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 AQCM 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:

1. 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 to Tier 3 equivalent emission levels and the highest level of available control using retrofit or Tier 2 engines is being used for the engine in question; or
2. The construction equipment is intended to be on site for five days or less.

The CPM may grant relief from this requirement if the AQCM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

C. 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 "B" 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:

1. 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.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.

3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public; or
 4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.
- D. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (B) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications;
- E. 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.
- F. Construction equipment will employ electric motors when feasible.

Verification: The AQCMM shall include in a table in the MCR the following to demonstrate control of diesel construction-related emissions:

1. A summary of all actions taken to maintain compliance with this condition;
2. 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
3. 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-SC6 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 state that the facility meets all applicable conditions of certification or note or highlight all incidences of noncompliance. Annual operation reports shall be submitted as part of the fourth Quarterly Report.

Verification: The project owner shall submit the Quarterly Operation Reports to the CPM and District, if requested by the District, no later than 30 days following the end of each calendar quarter.

AQ-SC7 The project owner shall provide the CPM copies of any District 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 District or U.S. EPA, and any revised permit issued by the District or U.S. EPA for the project.

Verification: The project owner shall submit any ATC, PTO, and any proposed air permit modification to the CPM within five 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-SC8 The project owner shall provide mitigation in the form of offsets or emission reduction credits (ERCs) prior to the start of construction of the project. The project emissions of 138.99 tons per year of NOx and 51.65 tons per year of VOC shall be offset at a ratio of 1.3 to one for ERC's within the Mojave Desert Air Basin and 1.5 to one for ERC's from the southern San Joaquin Valley Air Basin. The project owner shall provide a total of 180.7 tons per year of NOx and 77.5 tons per year of VOC mitigation. The project owner shall demonstrate that the reductions are provided in the form required by the District and U.S. EPA.

The project owner shall provide ERCs from the following list:

- MDAQMD: ERC Certificate 102
- MDAQMD: ERC Certificate 103
- SJVAPCD: ERC Certificate S-4039-1
- SJVAPCD: ERC Certificate S-3387-1
- SJVAPCD: ERC Certificate S-3261-1
- SJVAPCD: ERC Certificate S-3442

The project owner shall surrender the ERCs as required by the District. The project owner shall request District, U.S. EPA, ARB, and CPM approval for any substitutions, modifications, or additions to the ERCs.

The CPM, in consultation with the District, U.S. EPA, and ARB, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards (LORS), and that the requested change(s) will not cause the project to result in a significant environmental impact. The District must

also confirm that each requested change is consistent with applicable federal and state laws and regulations.

Verification: The project owner shall submit to the CPM a copy of all ERCs to be surrendered to the District at least 60 days prior to start of construction. Construction shall not begin until the CPM has approved all ERCS. This approval shall be done in consultation with the District. If a substitution or modification to the list of ERCs is approved by the CPM, District, and U.S. EPA, the CPM shall file a statement of the approval with the project owner and Energy Commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC9 The project owner shall provide 92.4 tons per year of PM10 ERCs 81.0 tons per year for PM10 emissions and 11.39 tons per year for PM10-precursor SOx emissions) that are banked consistent with the Rules and Regulations of the District. The project owner shall pave unpaved local roads to provide emission reductions of 92.4 tons per year of PM10 prior to the start of construction of the project. The project owner shall complete the road paving according to the revised Paving Emissions Reduction Credis Data Collection Protocol (Appendix E). Calculations of PM10 emission reduction credits shall be performed in accordance with the ERC Data Collection Protocol.

Verification: At least 45 days prior to start of construction, the project owner shall submit documentation showing that the project has obtained 92.4 tons of banked PM10 ERCs. Construction shall not begin until the CPM has approved all ERCs. This approval shall be done in consultation with the District.

AQ-SC10 The project owner shall minimize emissions associated with the simultaneous commissioning of the combustion turbines and not exceed NOx emissions of 254 pounds per hour.

Verification: The project owner shall provide operating records in the MCR to document compliance with this condition.

AQ-SC11 The project owner shall comply with all staff (**AQ SC**) and district (**AQ**) conditions of certification. The CPM, in consultation with the District, may approve any change to a condition of certification regarding air quality, as a staff-approved modification, provided that: (1) the Project remains in compliance with all applicable LORS; (2) the requested change clearly will not cause the Project to result in a significant environmental impact; (3) no additional mitigation or offsets will be required as a result of the change; (4) no existing daily, quarterly, or annual permit limit will be exceeded as a

result of the change; and (5) no increase in any daily, quarterly, or annual permit limit will be necessary as a result of the change.

Verification: The project owner shall submit a petition to amend for any proposed change to a condition of certification pursuant to this condition and shall provide the CPM with any additional information the CPM requests to substantiate the basis for approval.

DISTRICT'S PERMIT CONDITIONS

Combustion Turbine Generator Power Block Conditions

[2 individual 2,467 MMBtu/hr F Class Gas Combustion Turbine Generators, Application Numbers: AV2000000504 and AV2000000505]

AQT-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQT-2 This equipment shall be exclusively fueled with pipeline quality natural gas with a sulfur content not exceeding 0.2 grains per 100 dry standard cubic feet (dscf) on a rolling twelve-month average basis, and shall be operated and maintained in accordance with the recommendations of its manufacturer or supplier and/or sound engineering principles. Compliance with this limit shall be demonstrated by providing evidence of a contract, tariff sheet, or other approved documentation that shows that the fuel meets the definition of pipeline quality gas and records of monthly fuel sulfur content.

[Rule 1303; Rule 431.1; 40 CFR 60.4365; 40 CFR 60.5520(d)(1)]

Verification: The project owner shall complete, or obtain from the fuel supplier on a monthly basis, a laboratory analysis showing the sulfur content of natural gas being burned at the facility. The sulfur analysis reports shall be incorporated into the quarterly compliance reports.

AQT-3 This equipment is subject to the Federal NSPS codified at 40 CFR part 60, subparts A (General Provisions) and KKKK (Standards of Performance for New Stationary Gas Turbines), and TTTT (Standards of Performance for Greenhouse Gas Emission from New Stationary Gas Turbines). This facility is also subject to the Prevention of Significant Deterioration (40

CFR 52.21) and Federal Acid Rain (Title IV) programs. Compliance with all applicable provisions of these regulations is required.

Verification: The project owner shall provide the District, the ARB, and the CPM copies of the federal PSD and Acid Rain permits no later than 30 days after their issuance.

AQT-4 Emissions from this equipment (including its associated duct burner) shall not exceed the following emission limits at any firing rate, except for CO, NOx, and VOC during periods of startup and shutdown:

- a. Hourly rates computed every 15 minutes verified by CEMS and annual compliance tests:
 - i. NOx as NO₂ – 2.0 ppmvd corrected to 15 percent O₂ and 18.50 lb/hr, based on a 1-hr average
 - ii. CO – 2.0 ppmvd corrected to 15 percent O₂ and 11.30 lb/hr, based on a 1-hr average
- b. Hourly rates, verified by compliance tests or other compliance methods in the case of SOx:
 - i. VOC as CH₄ – 2.0 ppmvd corrected to 15 percent O₂ and 6.36 lb/hr
 - ii. SOx as SO₂ – 5.63 lb/hr (based on 0.75 grains/100 dscf fuel sulfur)
 - iii. PM10/2.5 – 11.80 lb/hr

Emissions from this equipment (not including the associated duct burner) shall not exceed the following emission limits at any firing rate, except for CO, NOx, and VOC during periods of startup and shutdown:

- c. Hourly rates, computed every 15 minutes, verified by CEMS and annual compliance tests:
 - i. NOx as NO₂ – 2.0 ppmvd corrected to 15 percent O₂ and 17.10 lb/hr averaged over one hour
 - ii. CO – 2.0 ppmvd corrected to 15 percent O₂ and 10.40 lb/hr, averaged over one hour
- d. Hourly rates, verified by compliance tests or other compliance methods in the case of SOx:

- i. VOC as CH₄ – 1 ppmvd corrected to 15 percent O₂ and 3.00 lb/hr
- ii. SOx as SO₂ – 5.25 lb/hr (based on 0.75 grains/100 dscf fuel sulfur)
- iii. PM10/2.5 – 9.80 lb/hr

[Rule 404, Rule 407, Rule 409, Rule 475, Rule 1134, Rule 1303, NSPS subpart KKKK]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQT-5 Emissions of CO and NOx from this equipment shall only exceed the limits contained in Condition of Certification **AQT-4** during startup and shutdown periods; transient conditions shall not exceed the following durations:

- a. Cold Startup – A gas turbine (GT) startup (SU) that occurs when the steam turbine (ST) rotor temperature is less than 485°F after a GT shutdown (SD), and is limited in time to the lesser of:
 - i. the first 39 minutes of continuous fuel flow to the GT after ignition; or
 - ii. the period of time from GT ignition until the GT achieves the first of two consecutive CEM data points in compliance with the emission concentration limits of parts 4(a) and 4(b).
- b. Warm Startup – A GT SU that occurs when the ST rotor temperature is greater than or equal to 485°F but less than 685°F after a GT SD, and is limited in time to the lesser of:
 - i. the first 35 minutes of continuous fuel flow to the GT after ignition; or
 - ii. the period of time from GT ignition until the GT achieves the first of two consecutive CEM data points in compliance with the emission concentration limits of parts 4(a) and 4(b).
- c. Hot Startup – A GT startup (SU) that occurs when the ST rotor temperature is greater than or equal to 685°F after a GT SD, and is limited in time to the lesser of:
 - i. the first 30 minutes of continuous fuel flow to the GT after ignition; or

- ii. the period of time from GT ignition until the GT achieves the first of two consecutive CEM data points in compliance with the emission concentration limits of parts 4(a) and 4(b).
- d. Shutdown – The lesser of the 25-minute period immediately prior to the termination of fuel flow to the GT or the period of time from non-compliance with any requirements listed in parts 4(a) and 4(b) until termination of fuel flow to the GT;
- e. During a cold startup emissions shall not exceed the following, verified by CEMS:
 - i. NOx – 52 lb
 - ii. CO – 416 lb
- f. During a warm startup emissions shall not exceed the following verified by CEMS:
 - i. NOx – 47 lb
 - ii. CO – 378 lb
- g. During a hot startup emissions shall not exceed the following verified by CEMS:
 - i. NOx – 43 lb
 - ii. CO – 305 lb
- h. During a shutdown emissions shall not exceed the following verified by CEMS:
 - i. NOx – 33 lb
 - ii. CO – 76 lb

[Rule 1303]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQT-6 Emissions (including startup, shutdown, and malfunction) from this facility, including the duct burner, auxiliary equipment, and engines, shall not exceed the following emission limits based on a calendar day summary:

- a. NOx – 1,141 lb/day verified by the turbine CEMS

- b. CO – 2,179 lb/day verified by the turbine CEMS
- c. VOC as CH₄ – 472 lb/day verified by compliance tests, fuel use data, and hours of operation in mode
- d. SOx as SO₂ – 271 lb/day verified by fuel sulfur content and fuel use data
- e. PM10/2.5 – 568 lb/day verified by compliance tests, fuel use data, and hours of operation

[Rule 1303]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQT-7 Emissions from this facility, including the duct burner, auxiliary boiler, and engines, shall not exceed the following emission limits, based on a rolling 12 month summary:

- a. NOx – 138.99 tons/year verified by CEMS
- b. CO – 351.09 tons/year verified by CEMS
- c. VOC as CH₄ – 51.65 tons/year verified by compliance tests, fuel use data, and hours of operation in mode
- d. SOx as SO₂ – 11.39 tons/year verified by fuel sulfur content and fuel use data
- e. PM10 – 81.01 tons/year verified by compliance tests, fuel use data and hours of operation
- f. PM2.5 – 81.01 tons/year verified by compliance tests, fuel use data and hours of operation

[Rule 1303]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQT-8 Particulate emissions from this equipment shall not exceed an opacity equal to or greater than 20 percent for a period aggregating more than three (3) minutes in any one (1) hour, excluding uncombined water vapor

[Rule 401]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQT-9 This equipment shall exhaust through a stack at a minimum height of 160 feet.

[Rule 1303]

Verification: At least 60 days prior to construction of the turbine stacks, the project owner shall provide the District and CPM an “approved for construction” drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, U.S. EPA, and the CPM for inspection.

AQT-10 The project owner shall not operate this equipment after the initial commissioning period without the oxidation catalyst with a valid District permit and the selective catalytic reduction system with a valid District permit installed.

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall provide information on any major problem in the operation of the oxidizing catalyst and SCR Systems for the gas turbines and HRSGs. The information shall include, at a minimum, the date and description of the problem and the steps taken to resolve the problem.

AQT-11 The project owner shall provide stack sampling ports and platforms necessary to perform source tests required to verify compliance with District rules, regulations, and permit conditions. The location of these ports and platforms shall be subject to District approval.

[Rule 1303]

Verification: At least 60 days prior to construction of the turbine stacks, the project owner shall provide the District and CPM an “approved for construction” drawing showing the appropriate stack height and location of sampling ports and platforms. The project owner shall make the site available to the District, U.S. EPA, and Energy Commission Staff for inspection.

AQT-12 Emissions of NOx and CO, and oxygen and shall be monitored using a Continuous Emissions Monitoring System (CEMS). Ammonia slip shall be monitored using a Parametric Emissions Monitoring System (PEMS). Turbine fuel consumption shall be monitored using a continuous

monitoring system. Stack gas flow rate shall be monitored using either a Continuous Emission Rate Monitoring System (CERMS) meeting the requirements of 40 CFR 75 **Appendix A** or a stack flow rate calculation method. The project owner shall install, calibrate, maintain, and operate these monitoring systems according to a District-approved monitoring plan District Rule 218, 40 CFR 60 and/or 40 CFR 75² as applicable.

[Rule 1134; Rule 1303; NSPS KKKK]

Verification: The project owner shall install, calibrate, maintain, and operate these monitoring systems according to a District-approved monitoring plan and District Rule 218, and they shall be installed prior to initial equipment startup after initial steam blows are completed. Two (2) months prior to installation the operator shall submit a monitoring plan for District and CPM review and approval.

AQT-13 The project owner shall conduct all required compliance/certification tests in accordance with a District-approved test plan. Thirty (30) days prior to the compliance/certification tests the operator shall provide a written test plan for District review and approval. Written notice of the compliance/certification test shall be provided to the District ten (10) days prior to the tests so that an observer may be present. A written report with the results of such compliance/certification tests shall be submitted to the District within forty-five (45) days after testing.

[District Compliance Test Procedural Manual rules 1303 and 1134]

Verification: The project owner shall notify the District and the CPM within ten (10) working days before the execution of the compliance/certification tests required by this condition. Compliance/certification test results shall be submitted to the District and to the CPM within 45 days of the date of the tests.

AQT-14 After the initial compliance test, the project owner shall perform the following compliance tests at least as often as once every three years on this equipment in accordance with the District Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:

- a. NOx as NO₂ in ppmvd at 15 percent oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20)

² Where 40 CFR 60 and 40 CFR 75 are applicable but inconsistent, 40 CFR 60 shall take precedent.

- b. VOC as CH₄ in ppmvd at 15 percent oxygen and lb/hr (measured per USEPA Reference Methods 25A and 18)
- c. SOx as SO₂ in ppmvd at 15 percent oxygen and lb/hr (measured per USEPA Reference Method 6 or 6C or equivalent)
- d. CO in ppmvd at 15 percent oxygen and lb/hr (measured per USEPA Reference Method 10)
- e. PM10 and PM2.5 in mg/m³ at 15 percent oxygen and lb/hr (measured per USEPA Reference Methods 5 and 202 or CARB Method 5)
- f. Flue-gas flow rate in dscf per minute (measured per USEPA Method 2B)
- g. Opacity (measured per USEPA reference Method 9)
- h. Ammonia slip in ppmvd at 15 percent oxygen (measured per BAAQMD ST-1B)

[Rule 1134; Rule 1303]

Verification: The project owner shall notify the District and the CPM within ten (10) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQT-15 The project owner shall, at least as often as once every three years following planned facility outages (commencing with the initial compliance test), include the following supplemental source tests:

- a. Characterization of cold startup VOC emissions
- b. Characterization of other startup VOC emissions
- c. Characterization of shutdown VOC emissions

[Rule 1303]

Verification: The project owner shall notify the District and the CPM within ten (10) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

- AQT-16** Continuous monitoring systems shall meet the following acceptability testing requirements from 40 CFR 60 **Appendix B** (or otherwise District-approved):
- a. For NOx, .40 CFR 75
 - b. For O₂, Performance Specification 3
 - c. For CO, Performance Specification 4
 - d. For stack-gas flow rate, 40 CFR 75
 - e. For ammonia, a District-approved procedure that is to be submitted by the project owner
 - f. For stack gas flow rate (without CERMS), a District-approved procedure that is to be submitted by the project owner

[Rule 218; Rule 1134]

Verification: The project owner shall install, calibrate, maintain, and operate these monitoring systems according to a District-approved monitoring plan and District Rule 218, and they shall be installed prior to initial equipment startup after initial steam blows are completed. Sixty (60) days prior to installation, the operator shall submit a monitoring plan to the District and CPM for review and approval.

- AQT-17** The project owner shall submit to the APCO and USEPA Region IX the following information for the preceding calendar quarter by January 30, April 30, July 30, and October 30 of each year this permit is in effect. Each January 30th submittal shall include a summary of the reported information for the previous year. This information shall be maintained on site and current for a minimum of five (5) years and shall be provided to District personnel on request:
- a. Operating parameters of emission control equipment including, but not limited to, ammonia injection rate, NOx emission rate, and ammonia slip;
 - b. Total plant operation time (hours), duct burner operation time (hours), number of startups, hours in cold startup, hours in other startup, and hours in shutdown;
 - c. Date and time of the beginning and end of each startup and shutdown period;

- d. Average plant operation schedule (hours per day, days per week, weeks per year);
- e. All continuous emissions data reduced and reported in accordance with the District-approved CEMS protocol;
- f. Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NOx, CO, PM10, PM2.5, VOC, and SOx (including calculation protocol);
- g. Fuel sulfur content (monthly laboratory analyses, monthly natural-gas sulfur content reports from the natural-gas supplier(s), or the results of a custom fuel monitoring schedule approved by U.S. EPA for compliance with the fuel monitoring provisions of 40 CFR 60 subpart KKKK and 40 CFR part 72 as applicable);
- h. A log of all excess emissions, including the information regarding malfunctions/breakdowns required by Rule 430;
- i. Any permanent changes made in the plant process or production which would affect air pollutant emissions, and indicate when changes were made;
- j. Any maintenance to any air pollutant control system (recorded on an as-performed basis); and
- k. Records of steam turbine rotor temperature.

[Rule 1303, subpart KKKK, Rule 431.1, Rule 430, Rule 1134]

Verification: The project owner shall prepare quarterly reports for the preceding calendar quarters by January 30, April 30, July 30, and October 30 with the January 30 report including an annual summary. The reports shall be submitted to the District, U.S. EPA, and the CPM.

AQT-18 The project owner must surrender to the District sufficient valid Emission Reduction Credits for this equipment before the start of construction of any part of the project for which this equipment is intended to be used. In accordance with Regulation XIII, the operator shall obtain 180.7 tons of NOx, 77.5 tons of VOC, and 81.0 tons of PM10 offsets.

[Rule 1303(B), Rule 1305, and Rule 1309]

Verification: The project owner shall submit to the CPM for approval a copy of all ERCs to be surrendered to the District at least 60 days prior to start of construction.

Construction shall not begin prior to CPM approval of the ERCs.

- AQT-19** During an initial commissioning period of no more than 180 days, commencing with the first firing of fuel in this equipment, NOx, CO, VOC, and ammonia concentration limits shall not apply. The project owner shall minimize emission of NOx, CO, VOC, and ammonia to the maximum extent possible during the initial commissioning period.

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with. In addition, the project owner shall provide evidence of the District's approval of the emission monitoring system to the CPM prior to first firing of the gas turbines.

- AQT-20** The project owner shall tune each CTG and HRSG to minimize emissions of criteria pollutants at the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor.

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with. In addition, the project owner shall provide evidence of the District's approval of the emission monitoring system to the CPM prior to first firing of the gas turbines.

- AQT-21** The project owner shall install, adjust, and operate each SCR system to minimize emissions of NOx from the CTG and HRSG at the earliest feasible opportunity in accordance with the recommendations of the equipment manufacturers and the construction contractor. The NOx and ammonia concentration limits of Conditions of Certification **AQT-4** above and **AQSCR-4** below (SCR conditions) shall apply coincident with the steady state operation of the SCR systems.

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with. In addition, the project owner shall provide evidence of the District's approval of the emission monitoring system to the CPM prior to the first firing of the gas turbines.

- AQT-22** The project owner shall submit a commissioning plan to the District and the Energy Commission at least four weeks prior to the first firing of fuel in

this equipment. The commissioning plan shall describe the procedures to be followed during the commissioning of the CTGs, HRSGs, and steam turbine. The commissioning plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not be limited to, the tuning of the dry low NOx combustors, the installation and testing of the CEMS, and any activities requiring the firing of the CTGs and HRSGs without abatement by an SCR system.

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQT-23 The total number of firing hours of each CTG and HRSG without abatement of NOx by the SCR shall not exceed 639 hours during the initial commissioning period. Such operation without NOx abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system in place and operating. Upon completion of these activities, the project owner shall provide written notice to the District and CEC and the unused balance of the unabated firing hours shall expire.

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQT-24 During the initial commissioning period, emissions from this facility shall not exceed the following emission limits (verified by PEMS):

- a. NOx - 30 tons, and 132 pounds/hour/CTG
- b. CO - 185 tons, and 4,500 pounds/hour/CTG

[Rule 1303]

Verification: The project owner shall submit a MCR to the CPM specifying how this condition is being complied with.

AQT-25 No later than 180 days after initial startup, the project owner shall perform an initial compliance test. This test shall demonstrate that this equipment

is capable of operation at 100 percent load in compliance with the emission limits in Condition of Certification **AQT-4**.

[Rule 1303]

Verification: No later than 30 working days before the commencement of the initial compliance tests, the project owner shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this condition. The project owner shall incorporate the District and CPM comments into the test plan. The project owner shall notify the District and the CPM at least ten (10) working days prior to the planned source testing date. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

AQT-26 The initial compliance test shall include tests for the following; the results of the initial compliance test shall be used to prepare a supplemental health risk analysis if required by the District:

- a. Formaldehyde;
- b. Certification of CEMS, PEMS, and CERMS (or stack gas flow calculation method) at 100 percent load, startup modes, and shutdown mode;
- c. Characterization of cold startup VOC emissions;
- d. Characterization of other startup VOC emissions; and
- e. Characterization of shutdown VOC emissions.

[Rule 1303]

Verification: No later than 30 working days before the commencement of the initial compliance tests, the project owner shall submit to the District and the CPM a detailed source test plan designed to satisfy the requirements of this condition. Source test results shall be submitted to the District and the CPM within 60 days of the source testing date.

AQT-27 This equipment is subject to 40 CFR 60 subpart TTTT – Standards of Performance for Greenhouse Gas Emissions for Electric Generating Units. Carbon dioxide emissions from this turbine shall not exceed 1,000 lb CO₂/MWh (gross) or 1,030 lb CO₂/MWh (net).

[40 CFR 60, subpart TTTT, §60.5520]

Verification: The project owner shall submit to the CPM for approval all emissions and emission calculations to demonstrate compliance with this condition as part of the 4th quarter operational report.

HRSG Duct Burner Conditions

[2 individual 193.1 MMBtu/hr Natural-Gas Duct Burners, Application Nos.: AV2000000512 and AV2000000513.]

AQDB-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQDB-2 This equipment shall be exclusively fueled with natural gas and shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

[Rules 431.1 and 1303]

Verification: The project owner shall complete, on a monthly basis, a laboratory analysis showing the sulfur content of natural gas being burned at the facility. The sulfur analysis reports shall be incorporated into the quarterly compliance reports.

AQDB-3 The duct burner shall not be operated unless the combustion turbine generator with a valid District permit, catalytic oxidation system with a valid District permit, and selective catalytic NOx reduction system with a valid District permit are in operation.³

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

³ All permit numbers are yet to be assigned.

AQDB-4 This equipment shall not be operated for more than 1,500 hours per rolling 12-month period.

[Rule 1303]

Verification: The project owner shall submit to the CPM the hours of duct burner operation on a rolling 12-month basis in the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQDB-5 Monthly hours of operation for this equipment shall be recorded and maintained on site for a minimum of five (5) years and shall be provided to District personnel on request.

[Rule 1303]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

Oxidation Catalyst System Conditions

[2 individual oxidation catalyst systems, Application Nos.: AV2000000506 and AV2000000507]

AQOC-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQOC-2 This equipment shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQOC-3 This equipment shall be operated concurrently with the combustion turbine generator with a valid District permit.⁴

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

Selective Catalytic Reduction System Conditions

[2 individual SCR systems, Application Numbers: AV2000000508 and AV2000000509]

AQSCR-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQSCR-2 This equipment shall be operated and maintained in strict accord with the recommendations of its manufacturer or supplier and/or sound engineering principles.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQSCR-3 This equipment shall be operated concurrently with the combustion turbine generator with a valid District permit.⁵

[Rule 1303]

⁴ As represented in the FDOC; permit number to be assigned.

⁵ As represented in the FDOC; permit number to be assigned.

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

[Rule 204]

AQSCR-4 Ammonia shall be injected whenever the selective catalytic reduction system has reached or exceeded 400 degrees Fahrenheit, except for periods of equipment malfunction.

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQSCR-5 Except during periods of startup and shutdown, ammonia slip shall not exceed 5 ppmvd averaged over one hour at 15 percent O₂ dry. The project owner shall calculate and continuously record the NH₃ slip concentration using the following:

$$\text{NH}_3 \text{ (ppmv)} = [a - b * (c * 1.2) / 1E6] * 1E6 / b; \text{ where:}$$

a = NH₃ injection rater (lb/hr) / 17(lb/lbmol)

b = dry exhaust-gas flow rate (scf/hr) / 385.3 (scf/lbmol)

c = change in measured NOx across the SCR, ppmvd at 15 percent O₂

The project owner shall install a NOx analyzer to measure the SCR inlet NOx ppm accurate to within +/- 5 percent calibrated at least once every 12 months.

The project owner shall use the method described above or another alternative method approved by the APCO.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information determination without corroborative data using an approved reference method for the determination of ammonia.

[Rule 1303]

Verification: The project owner shall include ammonia slip concentrations averages on an hourly basis as part of the Quarterly Operation Report. The project owner shall

submit all SCR inlet NOx analyzer calibration results to the CPM within 60 days of the calibration date. Exceedances of the ammonia limit shall be reported and chronic exceedances of the ammonia slip limit, defined as occurring more than 10 percent of the operation for any single HRSG exhaust stack, shall be identified by the project owner and confirmed by the CPM within 60 days of the submitted Quarterly Operation Report that indicates chronic exceedances. If a chronic exceedance is identified and confirmed, the project owner shall work in conjunction with the CPM to develop a reasonable compliance plan to investigate and redress the chronic exceedance of the ammonia slip limit within 60 days of the above confirmation.

- AQSCR-6** The project owner shall record and maintain for this equipment the following on site for a minimum of five (5) years and shall be provided to District personnel upon request:
- a. Ammonia injection, in pounds per hour
 - b. Temperature, in degrees Fahrenheit at the inlet to the SCR

[Rule 1303]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

Auxiliary Boiler Conditions

[One 110 MMBtu/hr Gas Fired Auxiliary Boiler, Application Number: AV000000503]

- AQAB-1** Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

- AQAB-2** This equipment shall be exclusively fueled with pipeline quality natural gas and shall be operated and maintained in accordance with the recommendations of its manufacturer or supplier and/or sound engineering principles.

[Rule 431.1, Rule 1303(A), 40 CFR 60, subpart Db]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this

permit condition.

AQAB-3 This equipment is subject to the Federal NSPS codified at 40 CFR part 60, subparts A (General Provisions) and Db (Industrial-Commercial-Institutional Steam Generating Units).

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQAB-4 Emissions from this equipment shall not exceed the following hourly emission limits at any firing rate, verified by fuel use and annual compliance tests:

- a. NOx as NO₂ – 9.0 ppmvd corrected to 3 percent O₂, 0.011 lbs/MMBtu, and 1.21 lb/hr (averaged over one hour)
- b. CO – 50 ppmvd corrected to 3 percent O₂, 0.037 lbs/MMBtu, and 4.07 lb/hr (averaged over one hour)
- c. VOC as CH₄ – 0.066 lbs/MMBtu and 0.66 lb/hr
- d. SOx as SO₂ – 0.0022 lbs/MMBtu and 0.25 lb/hr (based on 0.75 grains/100 dscf fuel sulfur)
- e. PM10/2.5 – 0.007 lbs/MMBtu and 0.77 lb/hr (front and back half)

[Rule 404, Rule 407, Rule 409, Rule 475, Rule 476, Rule 1303(A), 40 CFR 60.44b]

Verification: The project owner shall submit operating hour data to the District and CPM in the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQAB-5 This equipment shall not be operated for more than 4,884 hours per rolling twelve month period.

[Rule 1303]

Verification: The project owner shall submit to the District and CPM the quarterly and annual compliance reports as required by Condition of Certification **AQ-SC6**.

AQAB-6 The project owner shall maintain an operations log for this equipment on site and current for a minimum of five (5) years, and said log shall be provided to District personnel on request. The operations log shall include the following information at a minimum:

- a. Total operation time (hours per month, by month);
- b. Daily Fuel use (to be used for calculating annual (12 month rolling sum) capacity factor;
- c. Maximum hourly, maximum daily, total quarterly, and total calendar year emissions of NOx, CO, PM10/2.5, VOC and SOx (including calculation protocol); and
- d. Any permanent changes made to the equipment that would affect air pollutant emissions, and indicate when changes were made.

[Fuel Sulfur Monitoring- 40 CFR 60.42(b)(k)(2); 40 CFR 60.49b(r)(1)]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, EPA, and CPM.

AQAB-7 The project owner shall perform the following annual compliance tests on this equipment in accordance with the District Compliance Test Procedural Manual. The test report shall be submitted to the District no later than six weeks prior to the expiration date of this permit. The following compliance tests are required:

- a. NOx as NO₂ in ppmvd at 3 percent oxygen and lb/hr (measured per USEPA Reference Methods 19 and 20)
- b. VOC as CH₄ in ppmvd at 3 percent oxygen and lb/hr (measured per USEPA Reference Methods 25A and 18)
- c. SOx as SO₂ in ppmvd at 3 percent oxygen and lb/hr (measured per USEPA Reference Method 6 or 6C)
- d. CO in ppmvd at 3 percent oxygen and lb/hr (measured per USEPA Reference Method 10)
- e. PM10 and PM2.5 in mg/m³ at 3 percent oxygen and lb/hr (measured per USEPA Reference Methods 5 and 202 or CARB Method 5)
- f. Flue gas flow rate in dscf per minute (measured per USEPA Method 2B or F Factor)
- g. Opacity (measured per USEPA reference Method 9) Initial test only

[40 CFR 60.44b(l) and 60.46b(c)(e)(g); Rule 1303]

Verification: The project owner shall notify the District and the CPM within seven (7) working days before the execution of the source tests required in this condition. Source test results shall be submitted to the District and to the CPM within 60 days of the date of the tests.

AQAB-8 A non-resettable, four-digit (9,999) hour timer shall be installed and maintained on this unit to indicate elapsed operating time.

[Rule 1303]

Verification: The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQAB-9 The equipment shall exhaust through a stack at a minimum height of 60.5 feet.

[Rule 1303]

Verification: The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQAB-10 The project owner shall continuously monitor and record fuel flow rate and flue gas oxygen level.

[40 CFR 60, subpart Db, section 60.49b; Reporting and Recordkeeping Requirements]

Verification: The project owner shall make the site available for inspection of records and equipment by representatives of the District, ARB, and the Energy Commission.

AQAB-11 In lieu of installing CEMs to monitor NOx emissions, and pursuant to 40 CFR 60, subpart Db, section 60.49b(c), the project owner shall monitor boiler operating conditions and estimate NOx emission rates per a District-approved emissions estimation plan. The plan shall be based on the annual source tests required by Condition of Certification **AQAB-7**. The plan shall include test results, operating parameters, analysis, conclusions, and a proposed NOx estimating relationship consistent with established emission chemistry and operational effects. Any proposed changes to a District-approved plan shall include subsequent test results, operating parameters, analysis, and any other pertinent information to support the proposed changes. The District and CPM must approve any emissions estimation plan or revision for estimated NOx emissions to be considered valid.

[40 CFR 60, subpart Db, section 60.49b(c)]

Verification: The project owner shall submit the emission estimation plan to the CPM for approval within 60 days of the initial source test.

Emergency Generator Conditions

[One 2,011 hp emergency IC engine driving a generator, Application No.: AV2000000502]

AQEG-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQEG-2 This stationary certified EPA Tier 2 diesel IC engine shall be installed, operated, and maintained in accordance with the recommendations of the manufacturer/supplier and/or sound engineering principles which produce the minimum emissions of contaminants.

[Rule 1303; NSPS IIII]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQEG-3 This unit shall be limited to use for emergency power, defined in 17 CCR 93115. In addition, this unit may be operated as part of a testing program that does not exceed 0.5 hours in any one day and not more than 26 hours of testing or maintenance per year (rolling 12 month sum). Furthermore, pursuant to District Rule 1110.2, this unit shall be operated less than 200 hours per calendar year. This requirement includes usage during emergencies.

[Rule 1302; 17 CCR 93115; NSPS IIII]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, the reason for each operation, and the annual maintenance per year (rolling 12-month sum).

AQEG-4 This engine shall not be operated for testing purposes during CTG startup/shutdown periods or tested during the same hour as the fire pump.
[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation.

AQEG-5 This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 15 ppm on a weight basis per CARB Diesel Fuel or equivalent requirements.

[Rule 404; Rule 431.2; 17 CCR 93115; NSPS IIII]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

AQEG-6 A non-resettable, four-digit hour timer shall be installed and maintained on this unit to indicate elapsed engine operating time.

[Rule 1302, 17 CCR 93115, NSPS IIII]

Verification: The project owner shall make the site available to the District, U.S. EPA, and CPM for inspection.

AQEG-7 The project owner shall maintain a log for this unit, which, at a minimum, contains the information specified below. This log shall be maintained current and on-site for a minimum of five (5) years and shall be provided to District personnel on request:

- a. Date of each use or test;
- b. Duration of each use or test in hours;
- c. Reason for each use;
- d. Cumulative calendar year use in hours; and
- e. Fuel sulfur concentration (the project owner may use the supplier's certification of sulfur content if it is maintained as part of this log).

[Rule 1302, 17 CCR 93115, NSPS IIII]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, the reason for each operation, and the cumulative calendar use. During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

AQEG-8 This engine shall not be used to provide power to the interconnecting utility and shall be isolated from the interconnecting utility when operating.

[Rule 1303]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

AQEG-9 The engine may operate in response to notification of impending rotating outage 1) if the area utility has ordered rotating outages in the area where the engine is located or expects to order such outages at a particular time, 2) the engine is located in the area subject to the rotating outage, 3) the engine is operated no more than 30 minutes prior to the forecasted outage and 4) the engine is shut down immediately after the utility advises that the outage is no longer imminent or in effect.

[17 CCR 93115]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation.

AQEG-10 This engine shall exhaust through a stack at a minimum height of 20 feet.

[Rule 1303]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

AQEG-11 This equipment shall comply with the applicable requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Cal. Code Regs., title 17 § 93115) and the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

[40 CFR, part 60, subpart IIII]

Verification: The project owner shall make the site and applicable records available to the District, U.S. EPA, and CPM for inspection.

Emergency Fire Suppression Water Pump Conditions

**[One 140 hp emergency IC engine driving a fire suppression water pump,
Application No.: AV2000000501]**

AQFS-1 Operation of this equipment shall be conducted in compliance with all data and specifications submitted with the application under which this permit is issued unless otherwise noted below.

[Rule 204]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQFS-2 This stationary certified EPA Tier 3 diesel IC engine shall be installed, operated, and maintained in accordance with the recommendations of the manufacturer/supplier and/or sound engineering principles that produce the minimum emission of contaminants.

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall include information on the date, time, and duration of any violation of this permit condition.

AQFS-3 This direct drive fire pump engine shall be limited to use for emergency fire suppression, defined as in California Code of Regulations, title 17, section 93115. In addition, this unit may be operated as part of a testing program that does not exceed 1 hour in any day and not more than 50 hours of testing or maintenance per year (rolling 12 month sum). Furthermore, pursuant to District Rule 1110.2, this unit shall be operated less than 200 hours per calendar year. This requirement includes usage during emergencies.

[Rule 1302, Cal. Code Regs., title 17, § 93115; NSPS IIII]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, the reason for each operation, and the annual maintenance per year (rolling 12-month sum).

AQFS-4 This engine shall not be operated for testing purposes during CTG startup/shutdown periods or tested during the same hour as the emergency generator.

[Rule 1303]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation.

AQFS-5 This unit shall only be fired on ultra-low sulfur diesel fuel, whose sulfur concentration is less than or equal to 15 ppm on a weight basis per CARB Diesel or equivalent requirements.

[Rule 404, Rule 431.2, Cal. Code Regs., title 17, § 93115, NSPS IIII]

Verification: During site inspection, the project owner shall make all records and reports available to the District, ARB, U.S. EPA, and CPM.

AQFS-6 A non-resettable, four-digit hour timer shall be installed and maintained on this unit to indicate elapsed engine operating time.

[Rule 1302, Cal. Code Regs., title 17, § 93115; NSPS IIII]

Verification: The project owner shall make the site available to the District, U.S. EPA, and CPM for inspection.

AQFS-7 The owner/operator shall maintain a log for this unit which, at a minimum, contains the information specified below. This log shall be maintained current and on site for a minimum of five (5) years and shall be provided to District personnel on request:

- a. Date of each use or test;
- b. Duration of each use or test in hours;
- c. Reason for each use;
- d. Cumulative calendar year use, in hours; and
- e. Fuel sulfur concentration (the owner/operator may use the supplier's certification of sulfur content if it is maintained as part of this log).

[Rule 1302, Cal. Code Regs., title 17, § 93115; NSPS IIII]

Verification: As part of the quarterly and annual compliance reports, the project owner shall submit all dates of operation, elapsed time in hours, the reason for each operation and the cumulative calendar use.

AQFS-8 This engine shall exhaust through a stack at a minimum height of 19.5 feet.

[Rule 1303]

Verification: The project owner shall make the site available to the District, U.S. EPA, and CPM for inspection.

AQFS-9 This equipment shall comply with the applicable requirements of the Airborne Toxic Control Measure (ATCM) for Stationary Compression Ignition Engines (Cal. Code Regs., title 17, § 93115) and the Standards of Performance for Stationary Compression Ignition Internal Combustion Engines.

[40 CFR part 60, subpart IIII]

Verification: The project owner shall make the site and applicable records available to the District, U.S. EPA, and CPM for inspection.

PUBLIC HEALTH CONDITIONS OF CERTIFICATION

PUBLIC HEALTH-1 - Deleted.

WORKER SAFETY & FIRE PROTECTION CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program containing the following:

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program which shall also include a Heat Stress Protection Plan and a Best Management Practices (BMPs) for the storage and application of herbicides used to control weeds;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program 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 and the Fire Prevention Plan shall be submitted to the Los Angeles County Fire Department for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 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 Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Los Angeles County Fire Department stating the Fire Department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

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:

- An Operation Injury and Illness Prevention Plan which shall also include a Heat Stress Protection Plan and a Best Management Practices (BMPs) for the storage and application of herbicides used to control weeds;
- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Program (Cal. Code Regs, title 8, § 3221); and

- Personal Protective Equipment Program (Cal. Code Regs, title 8, §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Los Angeles County Fire Department for review and comment.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Los Angeles County Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan 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 power plant construction activities and relevant laws, ordinances, regulations, and standards, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards. The CSS shall:

- Have over-all authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations, emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- Assure that all the plans identified in **WORKER SAFETY-1** and -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 Construction Safety Supervisor (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 a monthly safety inspection report to include:

1. Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
2. Summary report of safety management actions and safety-related incidents that occurred during the month;
3. Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
4. Report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and will be responsible for verifying that the Construction Safety Supervisor, as required in **WORKER SAFETY-3**, implements all appropriate Cal/OSHA and Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: At least 30 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 ensure that a portable automatic external defibrillator (AED) is located on site during construction 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 functioning at all times. 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 Construction Safety Supervisor or delegate; and all shift foremen.

During operations, all power plant employees 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 exists on site and a copy of the training and maintenance program for review and approval.

WORKER SAFETY-6 The project owner shall identify and provide a second access point for emergency personnel to enter the site. This access point and the method of gate operation shall be submitted to the Los Angeles County Fire Department for review and comment and to the CPM for review and approval.

Verification: At least 60 days prior to the start of site mobilization, the project owner shall submit to the Los Angeles County Fire Department and the CPM preliminary plans showing the location of a second access point to the site and a description of how the gate will be opened by the fire department. At least 30 days prior to the start of site mobilization, the project owner shall submit final plans to the CPM for review and approval. The final plan submittal shall also include a letter containing comments from the Los Angeles County Fire Department or a statement that no comments were received.

WORKER SAFETY-7 The project owner shall provide to the CPM for review a copy of the worker safety plan for reconductoring the transmission lines between the Pearl Blossom and Vincent substations.

Verification: At least 60 days prior to the start of reconductoring, the project owner shall submit to the CPM the worker safety plan for review.

WORKER SAFETY-8 The project owner shall develop and implement an enhanced Dust Control Plan that includes the requirements described in **AQ-SC3** and additionally requires:

- i) Site worker use of dust masks (NIOSH N-95 or better) whenever visible dust is present;
- ii) Implementation of methods consistent with Rule 402 of the Kern County Air Pollution Control District (as amended Nov. 3, 2004); and
- iii) Implementation of enhanced dust control methods (increased frequency of watering, use of dust suppression chemicals, etc. consistent with Condition of Certification **AQ-SC4**) immediately whenever visible dust comes from or onto the site, or when PM10 measurements obtained when implementing ii (above) exceed 50 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$).

Verification: At least 30 days prior to the commencement of site mobilization, the enhanced Dust control Plan shall be provided to the CPM for review and approval.

WORKER SAFETY-9 Deleted

WORKER SAFETY-10 The project owner shall report to the CPM within 24 hours any incidence of heat illness (heat stress, exhaustion, stroke, or prostration) occurring in any worker on site and shall report to the CPM the incidence of any confirmed case of Valley Fever in any worker on the site within 24 hours of receipt of medical diagnosis.

Verification: The project owner shall provide reports of heat-related and Valley Fever incidences in any worker on the site via telephone call or e-mail to the CPM within 24 hours of a heat-related occurrence or confirmed diagnosis of a case of Valley Fever, and shall include such reports in the Monthly Compliance Report during construction and the Annual Compliance Report during operation.

WORKER SAFETY-11 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 as the minimum level of fire protection. The project owner shall interpret and adhere to all applicable NFPA 850 recommended provisions and actions stating "should" as "shall." In any situations where both NFPA 850 and the Los Angeles County Fire Code have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850. At least 60 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 Los Angeles County Fire Department for review and comment, to the CPM for review and approval, and to the CBO for plan check and construction inspection.

HAZARDOUS MATERIALS CONDITIONS OF CERTIFICATION

HAZ-1 During commissioning and operations, the project owner shall not use any hazardous materials not listed in Appendix B below from the Revised Petition to Amend (PHPP 2015d) or in greater quantities than those identified by chemical name in Appendix B, unless approved in advance by the Compliance Project Manager (CPM). All inert gases are exempt from this requirement. Paints, thinners, laboratory reagents, and herbicides in amounts less than 20 gallons or 20 pounds are exempt from this requirement unless containing a chemical of any amount which is regulated as an extremely hazardous chemical pursuant to 40 CFR part 355, Appendix A, or is required by the Compliance Project Manager (CPM) to be listed based upon its toxic, flammable, combustible, caustic, or explosive nature.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility.

HAZ-2 The project owner shall provide a Hazardous Materials Business Plan (HMBP), a Spill Prevention, Control, and Countermeasure Plan (SPCC), and a Risk Management Plan (RMP) to the Health Hazardous Materials Division of the Los Angeles County Fire Department (HHMDLACFD) and the CPM for review. After receiving comments from the HHMDLACFD and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final plans shall then be provided to the HHMDLACFD for information and to the CPM for approval.

Verification: At least 30 days prior to receiving any hazardous material on the site for commissioning or operations, the project owner shall provide a copy of a final (or revised, if appropriate) HMBP and SPCC Plan to the CPM for approval.

At least 30 days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the HHMDLACFD for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia and other liquid and gaseous hazardous materials by tanker truck. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials including provisions to maintain lockout control by a power plant employee not involved in the

delivery or transfer operation. This plan shall be applicable during construction, commissioning, and operation of the power plant.

Verification: At least 30 days prior to the delivery of any liquid or gaseous hazardous material via tanker truck to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to the ASME Pressure Vessel Code. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm and shall contain High Density Polyethylene (HDPE) plastic balls that would float and cover the entire surface in the event of a release of aqueous ammonia from the storage tank into the secondary containment area. These balls shall be inspected annually and any cracked or otherwise damaged balls replaced immediately.

In addition, the pad where the tanker truck will transfer aqueous ammonia to the storage tank shall be bermed and sloped to direct spilled aqueous ammonia to flow to a grated area that would lead to a subsurface sump. The final design drawings and specifications for the ammonia storage tank, transfer pad and its subsurface sump, and secondary containment basin shall be submitted to the CPM.

Verification: At least 30 days prior to the start of construction of the aqueous ammonia storage and transfer facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank, ammonia pumps, pipes, valves, and detectors, the transfer pad and its subsurface sump, and the storage tank secondary containment basin to the CPM for review and approval.

In the Annual Compliance Report, the project owner shall include a report on the annual HDPE ball inspection and how many damaged balls were replaced.

HAZ-5 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles which meet or exceed the specifications of DOT Code MC-307.

Verification: At least 30 days prior to receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-6 The project owner shall direct all vendors delivering any hazardous material to the site for use during commissioning and commercial

operations to use only the route approved by the CPM. Trucks and tankers will travel on SR-14 and exit onto East Avenue M from which they will enter the plant site via the access road. If the route must be changed for any reason, the project owner shall obtain the review and approval of the CPM not later than 10 days before the next shipment of hazardous materials is due to arrive at the facility, and shall notify the Los Angeles County Fire Department at the same time a request for route change is submitted to the CPM.

Verification: At least 30 days prior to receipt of any hazardous materials on site, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval. Any change to the route must be reviewed and approved by the CPM and must be made in writing not less than 10 days prior to the next shipment of hazardous materials to the facility.

HAZ-7 – DELETED.

HAZ-8 At least 30 days 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 Security Plan shall include the following:

1. Perimeter security consisting of fencing enclosing the construction area;
2. Security guards;
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
6. 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-9 The project owner shall prepare a site-specific Security Plan for the operational phase and shall notify the CPM that it is available on site for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described as below (as per NERC 2011).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least 8 feet high and topped with a wire obstacle (e.g.: barbed wire or barbed tape) around the entire site and meet the requirements specified in Condition of Certification **BIO-11**;
2. Main entrance security gate, either hand operable or motorized;
3. Evacuation procedures;
4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity, incident, or emergency;
5. Written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;
- 6.a. A statement (refer to sample, Attachment A) signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to ascertain the accuracy of employee identity and employment history, and shall be conducted in accordance with state and federal law regarding security and privacy;
- b. A statement(s) (refer to sample, Attachment B) 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 contractor personnel that visit the project site;
7. Site access controls for employees, contractors, vendors, and visitors;

8. A statement(s) (refer to sample, Attachment C) signed by the owners or authorized representative of aqueous ammonia transport vendors certifying that they have prepared and implemented security plans in conformity with 49 CFR 172.802, and that they have conducted employee background investigations in accordance with 49 CFR part 1572, subparts A and B;
9. CCTV monitoring system able to pan, tilt, and zoom (PTZ), recordable, and viewable in the power plant control room and security station (if separate from the control room) providing a view of the entire perimeter fence line, main entrance gate, the entrance to the control room, and the ammonia storage tank, but angled and physically restricted so as to not view or record any activity at Air Force Plant 42; and
10. Additional measures to ensure adequate perimeter security consisting of either:
 - a. Security guard(s) present 24 hours per day, seven days per week, **or**
 - b. Power plant personnel on site 24 hours per day, seven days per week and:
 - 1) The perimeter fence around the entire site shall be viewable by the CCTV system; and
 - 2) Have perimeter breach detectors **or** on-site motion detectors for all fence lines.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to the security plans. The CPM may authorize modifications to these measures, or may require additional measures, such as protective barriers for critical power plant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, 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 after consultation with appropriate law enforcement agencies and the applicant.

Verification: At least 30 days prior to the initial receipt of hazardous materials on site, 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 a statement that all current project employee and appropriate contractor background investigations have been performed, updated certification statements are appended to the Operations Security Plan, and that the plan remains current or if it has been revised in any manner. If revised, the project owner shall notify the CPM that the revised Operations Security Plan is available for review and approval.

Also, in the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZ-10 The project owner shall not allow any fuel gas pipe-cleaning activities on site at any power unit, either before placing the pipe into service or at any time during the lifetime of the facility, that involve “flammable gas blows” where natural (or flammable) gas is used to blow out debris from piping and then vented into the atmosphere. Instead, an inherently safer method involving a non-flammable gas (e.g. air, nitrogen, steam) or mechanical pigging shall be used as per NFPA 56. A written procedure shall be developed and implemented as per NFPA 56, section 4.3.1.

Verification: At least 30 days before any fuel gas pipe-cleaning activities begin at any unit, the project owner shall submit a copy of the Fuel Gas Pipe Cleaning Work Plan (as described in NFPA 56 section 4.3.1), which shall indicate the method of cleaning to be used, what gas will be used, the source of pressurization, and whether a mechanical PIG will be used, to the CBO for information and to the CPM for review and approval.

WASTE MANAGEMENT CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall implement the following steps at locations where excavation or significant ground disturbance will occur for the construction of the project transmission line. All steps shall be completed at least 60 days prior to the project transmission line construction to prevent mobilization of contaminants and exposure of workers and the public:

- Step 1. Investigate the tower locations and associated laydown and staging areas for construction of the transmission line to determine whether these locations have a record of hazardous material contamination that would affect construction activities. This investigation shall be performed as a Phase I Environmental Site Assessment (ESA). If contamination is identified that could potentially affect the health and safety of workers or the public during construction of the Proposed Project, proceed to Step 2;
- Step 2. Perform a Phase II ESA to characterize the locations and determine the nature and extent of the contamination present at the location before construction activities proceed within the Project Right-of-Way near the suspect site. If it is determined there are conditions that may pose a risk to the health and safety of workers or the public, or could mobilize contamination, then proceed to Step 3; and
- Step 3. Prepare a Health Risk Assessment to determine whether risks may be present and a Remedial Action Plan to identify what remedial measures would be required to facilitate linear construction if there were conditions that would pose a risk. Mitigate the health and safety risk according to applicable regulations or requirements. This would include preparation and implementation of site-specific Health and Safety Plans, Work Plans, and/or Remediation Plans.

Verification: The project owner shall submit the Phase I ESA, and Phase II ESA, Health Risk Assessment results and other plans, as applicable, to the CPM at least 60 days prior to commencement of transmission lines construction.

WASTE-2 In areas where the land has been or is currently being farmed, and where excavation or significant ground disturbance will occur for the construction of the project transmission line, soil samples shall be collected and tested for herbicides, pesticides, and fumigants to determine the presence and extent of any material levels of contamination.

The sampling and testing plan shall be prepared in consultation with the appropriate Los Angeles County agency, conducted by an appropriate California licensed professional, and sent to a California Certified laboratory for testing. Sampling and analysis shall be consistent with the DTSC's "Interim Guidance for Sampling Agricultural Fields for School Sites (Third Revision)" or equivalent. A report documenting the areas proposed for sampling, and the process used for sampling and testing shall be submitted to the Energy Commission for review and approval at least 90 days before transmission line construction occurs in the affected areas.

Results of the laboratory testing and recommended resolutions for handling and excavation of material found to exceed regulatory requirements shall be submitted to the Energy Commission 60 days prior to transmission line construction occurs in the affected areas. Should sampling indicate additional remediation or mitigation is required, Conditions of Certification **WASTE-3** and **-4** would apply.

Excavated materials containing elevated levels of pesticide or herbicide require special handling and disposal according to procedures established by the regulatory agencies. Effective dust suppression procedures shall be used in construction areas to reduce airborne emissions of these contaminants and reduce the risk of exposure to workers and the public. Regulatory agencies for the State of California and Los Angeles County shall be contacted by the Applicant or its contractor to plan handling, treatment, and/or disposal options.

Verification: The project owner shall identify the current/previous land use for the project transmission tower locations and associated laydown and staging areas for construction of the transmission line. The project owner shall submit a report documenting the areas proposed for sampling, and the process used for sampling and testing to the CPM for approval at least 90 days before transmission line construction occurs in the affected areas. Results of the laboratory testing and recommended mitigation or remediation plan for handling and excavation of material found to exceed regulatory requirements shall be submitted to the CPM for review and approval 60 days prior to transmission line construction.

WASTE-3 The project owner shall contract with an experienced and qualified Professional Engineer or Professional Geologist, who shall be available for consultation and oversight of earth moving activities throughout all phases of site construction. The Professional Engineer/Geologist shall be given full authority by the project owner to oversee any earth-moving

activities that have the potential to disturb contaminated soil. Selection of the Professional Engineer/Geologist shall be subject to CPM approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume of their preferred Professional Engineer or Geologist to the CPM for review and approval. The project owner shall then provide a copy of the contract with the approved Professional Engineer/Geologist prior to the start of site construction activities.

WASTE-4 If potentially contaminated soil is identified during any phase of site construction, including excavation or grading at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Professional Engineer or Professional Geologist 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, representatives of DTSC, and the CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the Professional Engineer or Professional Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. The Professional Engineer or Professional Geologist shall contact the project owner, the CPM, and representatives of the DTSC for guidance and oversight in accordance with Condition of Certification **WASTE-3**.

Verification: The project owner shall submit any reports filed by the Professional Engineer or Professional Geologist to the CPM within five days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-5 In the event that contamination is identified during assessment of the project site during any phase of construction, and if the Project Engineer (PE), Professional Geologist (PG), or CPM reasonably determines that sampling is needed to confirm the nature and extent of contamination, then the Project PE and/or PG shall file a written report to the CPM stating a recommended course of action. If significant contamination (i.e., contamination levels which exceed the EPA Reportable Quantity [RQ] thresholds as listed under the Emergency Planning and Community Right to Know Act (EPCRA) are identified, and which the PG, PE, or CPM reasonably determines may pose a significant risk to workers, the public, or the environment, then the DTSC will be consulted regarding the proposed course of action.

Verification: The project owner shall consult with DTSC, and enter into an agreement at DTSC's request, to ensure oversight of any additional site assessment and remediation work needed to reevaluate the site or address contamination levels above Reportable Quantities, that have been determined to pose a significant risk to workers or the public found during any phase of site construction. The project owner shall ensure that the CPM is involved and apprised of all discussions with DTSC, and CPM review and approval shall be required for project decisions addressing site remediation.

WASTE-6 The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility and shall submit the plan to the City of Palmdale Building and Safety Department and CPM for review prior to the start of construction. The plan shall contain, at a minimum, the following:

- A description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications; and
- Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.

Verification: The project owner shall submit the Construction Waste Management Plan to the City of Palmdale Building and Safety Department and CPM for review no less than 30 days prior to the initiation of construction activities at the site.

WASTE-7 Upon notification of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts, and describe how the violation will be corrected.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action and provide a description and timeline for correction of the violation. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed to ensure compliance with LORS.

WASTE-8 The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency (U.S.

EPA) prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep a copy of the identification number on file at the project site and provide documentation of the hazardous waste generation 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.

WASTE-9 Deleted

WASTE-10 The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;

Management methods to be used for each waste stream, including temporary on-site storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;

Information and summary records of conversations with the Palmdale area CUPA, Los Angeles County Fire Department, and DTSC regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;

A detailed description of how facility wastes will be managed, and any contingency plans to be employed in the event of an unplanned closure or planned temporary facility closure; and

A detailed description of how facility wastes will be managed and disposed of upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of

notification from the CPM that revisions are necessary. The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year, provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan, and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

WASTE-11 Deleted

WASTE-12 Deleted

WASTE-13 The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are documented and cleaned up and that wastes generated from the release/spill are properly managed and disposed of, in accordance with all applicable federal, state, and local requirements.

The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that are in excess of reportable quantities (RQs) that occur on the project property or transmission corridors during construction and on the project property during operation. The documentation shall include, at a minimum, the following information:

- Location of release;
- Date and time of release;
- Reason for release;
- Volume released;
- Amount of contaminated soil/material generated;
- How release was managed and material cleaned up;
- If the release was reported;
- To whom the release was reported;
- Release corrective action and cleanup requirements placed by regulating agencies;
- Level of cleanup achieved and actions taken to prevent a similar release or spill; and

- Disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release.

Verification: Copies of the unauthorized releases and spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

WASTE- 14 During the construction phase, the project owner shall require contracted waste and/or refuse haulers to document each waste load transferred from the construction site to a disposal site and/or recycling center. The project owner shall be responsible for cleanup of debris from local illegal dumping, waste burning, or other activities located within the road-paving project footprint. If potentially contaminated soil is identified during any phase of road paving, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the project owner shall have a registered environmental professional 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 and the CPM stating the recommended course of action.

Verification: The project owner shall identify permitted solid waste facilities or recycling centers that receive roadway waste and maintain copies of weigh tickets and manifests showing the type and volume of waste disposed. This information shall be maintained at the job site and made accessible to the CPM upon request. The project owner shall submit any reports of contamination filed by the Professional Engineer or Professional Geologist to the CPM within five days of their receipt.

BIOLOGICAL RESOURCES CONDITIONS OF CERTIFICATION

DESIGNATED BIOLOGIST SELECTION⁶

BIO-1 The project owner shall assign at least one Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval in consultation with the California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS).

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;
3. At least one year of field experience with biological resources found in or near the project area;
4. Meet the current USFWS Authorized Biologist qualifications criteria (USFWS 2008b) and demonstrate familiarity with protocols and guidelines for the desert tortoise and be approved by the USFWS; and
5. Possess a recovery permit for desert tortoise and a California ESA Memorandum of Understanding pursuant to section 2081(a) for desert tortoise and Mohave ground squirrel or have adequate experience and qualifications to obtain these authorizations.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, in consultation with CDFW and USFWS, that the

⁶ USFWS <www.fws.gov/ventura/speciesinfo/protocols_guidelines/docs/dt> designates biologists who are approved to handle tortoises as "Authorized Biologists." Such biologists have demonstrated to USFWS that they possess sufficient desert tortoise knowledge and experience to handle and move tortoises appropriately, and have received USFWS approval. Authorized Biologists are permitted to then approve specific monitors to handle tortoises, at their discretion. The California Department of Fish and Wildlife (CDFW) must also approve such biologists, potentially including individual approvals for monitors approved by the Authorized Biologist. Designated Biologists are the equivalent of Authorized Biologists. Only Designated Biologists and certain Biological Monitors who have been approved by the Designated Biologist would be allowed to handle desert tortoises.

proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

Verification: The project owner shall submit the specified information at least 60 days prior to the start of any project-related site disturbance activities. No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 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.

Designated Biologists shall complete a USFWS Qualifications Form (USFWS 2008b) (www.fws.gov/ventura/endangered/species/surveys-protocol.html) and submit it to the USFWS and CPM within 60 days prior to ground breaking for review and final approval.

DESIGNATED BIOLOGIST DUTIES

BIO-2 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 closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the 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. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to be submitted by the project owner;
3. Be available to supervise, 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;

4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (e.g., parking lots) for animals in harm's way;
6. Notify the project owner and the CPM of any non-compliance with any biological resources condition of certification;
7. Respond directly to inquiries of the CPM regarding biological resource issues;
8. 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 Report and the Annual Compliance Report;
9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and USFWS guidelines on desert tortoise surveys and handling procedures at:
www.fws.gov/ventura/endangered/species/surveys-protocol.html; and
10. Maintain the ability to be in regular, direct communication with 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 Data Base.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources compliance activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease, as approved by the CPM.

BIOLOGICAL MONITOR QUALIFICATIONS

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM for approval in consultation with CDFW and USFWS. The resume shall demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the assigned biological resource tasks. Biological Monitors involved in any aspect of desert tortoise surveys or handling must meet the criteria to be considered a USFWS Authorized Biologist (USFWS 2008b) and demonstrate familiarity with the most recent protocols and guidelines for the desert tortoise.

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the conditions of certification, BRMIMP, WEAP, USFWS guidelines on desert tortoise surveys and handling procedures (www.fws.gov/ventura/endangered/species/surveys-protocol.html), and all permits.

Verification: The project owner shall submit the specified information to the CPM for approval at least 60 days prior to the start of any project-related site disturbance activities. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) has been trained including the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

BIOLOGICAL MONITOR DUTIES

BIO-4 The Biological Monitors shall assist the Designated Biologist in conducting surveys and monitoring of mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist shall remain the contact for the project owner and CPM.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources compliance activities, including those conducted or monitored by Biological Monitors. If actions may affect biological resources during operation, a Biological Monitor, under the supervision of the Designated Biologist, shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless his/her duties cease as approved by the CPM.

DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY

BIO-5 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 resources conditions of certification.

The Designated Biologist shall have the authority to immediately stop any activity that is not in compliance with these conditions and/or order any reasonable measure to avoid take of an individual of a listed species. If required by the Designated Biologist and 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. The Designated Biologist shall:

1. 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;
2. Inform the project owner and the construction/operation manager when to resume activities;
3. Notify the CPM if there is a halt of any activities and advise the CPM of any corrective actions that have been taken or will be instituted as a result of the work stoppage, and
4. 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) 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.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

- BIO-6** The project owner shall develop and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from USFWS, CDFW, and the CPM. The WEAP shall be administered to all on-site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, subcontractors, and delivery personnel. The WEAP shall be implemented during site mobilization, ground disturbance, grading, construction, operation, and closure. The WEAP shall:
1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media is made available to all participants;
 2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas and explain the reasons for protecting these resources;
 3. Place special emphasis on Swainson's hawk, arroyo toad, desert tortoise, and Mohave ground squirrel, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection, penalties for violations, reporting requirements, and protection measures;
 4. Present the meaning of various temporary and permanent habitat protection measures;
 5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
 6. Include a training acknowledgment form to be signed by each worker indicating that he/she received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any project-related site disturbance activities, the project owner shall provide to the CPM a copy of 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.

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. At least 10 days prior to site and related facilities mobilization, the project owner shall submit two copies of the CPM-approved final WEAP.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for at least six months after the start of commercial operation.

Throughout the life of the project, the worker education program shall be repeated annually for permanent employees, and shall be routinely administered within one week of arrival to any new construction personnel, foremen, contractors, subcontractors, and other personnel potentially working within the project area. Upon completion of the orientation, employees shall sign a form stating that they attended the program and understand all protection measures. These 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 hardhat sticker or certificate that they have completed the training.

During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN

BIO-7 The project owner shall develop a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and submit two copies of the proposed BRMIMP to the CPM (for review and approval) and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall incorporate impact avoidance and minimization measures described in final versions of the Mohave Ground Squirrel Translocation Plan, the Restoration Plan, the Hazardous Materials Plan, the Sensitive Plant Protection Plan, the Raven Monitoring, Management, and Control Plan, the Swainson's Hawk Monitoring and Mitigation Plan, the Burrowing Owl Monitoring and Mitigation Plan, the Streambed Avoidance and Mitigation Plan, and the Closure Plan.

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 (including the Air Quality Road Paving PM10 Mitigation Plan);

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 federal agency terms and conditions;
4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation, and closure;
5. All required mitigation measures for each sensitive biological resource;
6. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
7. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
8. Aerial photographs, at an approved scale, 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. Provide planned timing of aerial photography and a description of why times were chosen. Provide a final accounting of the before/after acreages and a determination of whether additional habitat compensation is necessary in the Construction Termination Report;
9. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
10. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
11. All remedial measures to be implemented if performance standards are not met;
12. A discussion of biological resources-related facility closure measures including a description of funding mechanism(s); and
13. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: The project owner shall submit the BRMIMP to the CPM at least 60 days prior to start of any project-related site disturbance activities. The CPM, in consultation with other appropriate agencies, will determine the BRMIMP's acceptability

within 45 days of receipt. The BRMIMP shall contain all of the required measures included in all biological conditions of certification. No ground disturbance may occur prior to the CPM's approval of the final BRMIMP.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM in consultation with appropriate agencies to ensure no conflicts exist.

Implementation of BRMIMP measures (construction activities that were monitored, species observed) will be reported in the Monthly Compliance Reports by the Designated Biologist. 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 modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-8 The project owner shall undertake the following measures to manage the construction site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Limit Disturbance Area. The boundaries of all areas to be disturbed (including staging areas, access roads, and sites for temporary placement of spoils) shall be delineated with stakes and flagging prior to construction activities in consultation with the Designated Biologist. Spoils shall be stockpiled in disturbed areas lacking native vegetation and which do not provide habitat for special-status species. Parking areas, staging and disposal site locations shall also be located in areas without native vegetation or special-status species habitat. All disturbances, vehicles, and equipment shall be confined to the flagged areas.
2. 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 will do so within the planned impact area or in previously disturbed areas. Where new access is required outside of existing roads (e.g. new spur roads) or the construction zone, the route will be clearly marked (i.e., flagged and/or staked) prior to the onset of construction.

3. Minimize Traffic Impacts. Vehicular traffic during project 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 within the project area, on maintenance roads for linear facilities, or on access roads to the project site.
4. Monitor During Construction. The Designated Biologist or Biological Monitor shall be present at the construction site during all project activities that have potential to disturb soil, vegetation, and wildlife. In areas that could support desert tortoise, Mohave ground squirrel, or any other sensitive wildlife species, the USFWS-approved Designated Biologist or Biological Monitor shall walk immediately ahead of equipment during brushing and grading activities.
5. Salvage Wildlife During Clearing and Grubbing. The Designated Biologist or Biological Monitor shall salvage and relocate sensitive wildlife during clearing and grading operations. The species shall be salvaged when conditions will not jeopardize the health and safety of the monitor and relocated off-site habitat.
6. Minimize Impacts of Transmission/Pipeline Alignments, Roads, and Staging Areas. For construction activities outside of the plant site (transmission line, pipeline alignments) access roads, pulling sites, and storage and parking areas shall be designed, installed, and maintained with the goal of minimizing impacts to native plant communities and sensitive biological resources. Transmission lines and all electrical 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 Mitigating Bird Collisions with Power Lines (APLIC 2004) to reduce the likelihood of bird electrocutions and collisions.
7. Avoid Use of Toxic Substances. Road surfacing and sealants as well as soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. Anticoagulants shall not be used for rodent control.
8. Minimize Lighting Impacts. Facility lighting shall be designed, installed, and maintained to prevent side casting of light towards wildlife habitat.

9. Avoid Vehicle Impacts to Desert Tortoise. No vehicles or construction equipment shall be moved prior to an inspection of the ground beneath the vehicle for the presence of desert tortoise. If a desert tortoise is observed, it will be left to move on its own. If the tortoise does not move, the animal will be relocated to a safe location within 500 feet of the project area. No tortoise shall be moved without authorization from the CDFW, USFWS, and CPM.
10. Avoid Wildlife Pitfalls. At the end of each work day, the Designated Biologist shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) outside the permanently fenced area have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall be sloped at a 3:1 ratio at the ends to provide wildlife escape ramps, or covered completely to prevent wildlife access, or fully enclosed with tortoise-exclusion fencing. All trenches, bores, and other excavations shall be inspected periodically throughout and at the end of each workday by the Designated Biologist or a Biological Monitor. Should wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and relocate the individual to a safe location. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.
11. Avoid Entrapment of Desert Tortoise and Mohave Ground Squirrel. Any construction pipe, culvert, or similar structure with a diameter greater than three inches, stored less than eight inches above ground and within desert tortoise or Mohave ground squirrel habitat for one or more days/ nights, shall be inspected for tortoises or Mohave ground squirrel before the material is moved, buried, or capped. As an alternative, all such structures may be capped before being stored outside the fenced area, or placed on pipe racks. These materials would not need to be inspected or capped if they are stored within the permanently fenced area after the clearance surveys have been completed.
12. 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 in an effort to prevent the formation of puddles, which could attract desert tortoises and common ravens to construction sites. A Biological Monitor shall patrol these areas to ensure water does not puddle and attract desert tortoise, common ravens, and other wildlife to the site and shall take appropriate action to reduce water application where necessary.

13. Minimize Spills of Hazardous Materials. All vehicles and equipment shall be maintained in proper working condition to minimize the potential for fugitive emissions of motor oil, antifreeze, hydraulic fluid, grease, or other hazardous materials. The Designated Biologist shall be informed of any hazardous spills immediately as directed in the project Hazardous Materials Plan. Hazardous spills shall be immediately cleaned up and the contaminated soil properly disposed of at a licensed facility. Servicing of construction equipment shall take place only at a designated area. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.
14. Worker Guidelines. During construction all trash and food-related waste shall be placed in self-closing containers and removed daily from the site. Workers shall not feed wildlife or bring pets to the project site.
15. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
16. Avoid Spread of Noxious Weeds. The project owner shall implement the following Best Management Practices during construction and operation to prevent the spread and propagation of noxious weeds:
- a. Limit the size of any vegetation and/or ground disturbance to the absolute minimum and limit ingress and egress to defined routes;
 - b. Prevent spread of non-native plants via vehicular sources by implementing Trackclean™ or other methods of vehicle cleaning for vehicles coming and going from construction sites. Earth-moving equipment shall be cleaned prior to transport to the construction site;
 - c. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations; and
 - d. Avoid using invasive non-native species in landscaping plans and erosion control.
17. Stockpile Topsoil. To increase chances for revegetation success, topsoil shall be stockpiled from the project plant site and along project linear features for use in revegetation of temporarily disturbed areas. The top two to six inches of native topsoil depending on soil conditions that occur at each area subject to temporary disturbance that are relatively free of noxious weeds such as Russian thistle, yellow star

thistle, or similar exotics shall be scraped and separately stockpiled for use in revegetation. The amount of topsoil needed for the project plant site and laydown area will be estimated when final design plans are available, and only the amount expected to be needed for revegetation of temporarily disturbed areas will be collected and stockpiled. The collection and stockpiling of topsoil shall be conducted as described in *Rehabilitation of Disturbed Lands in California*. (Newton and Claassen 2003, pp. 39-40.)

18. **Implement Erosion Control Measures.** Standard erosion control measures shall be implemented for all phases of construction and operation where sediment run-off from exposed slopes threatens to enter "Waters of the State." Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into the stream. All disturbed soils and roads within the project site shall be stabilized to reduce erosion potential, both during and following construction. Areas of disturbed soils (access and staging areas) with slopes toward a drainage shall be stabilized to reduce erosion potential.
19. **Monitor Ground-Disturbing Activities Prior to Site Mobilization.** If ground-disturbing activities are required prior to site mobilization, such as for geotechnical borings or hazardous waste evaluations, a Designated Biologist or Biological Monitor shall be present to monitor any actions that could disturb soil, vegetation, or wildlife.
20. **Control and Regulate Fugitive Dust.** To reduce the potential for the transmission of fugitive dust the owner shall implement dust control measures. These shall include:
 - a. The owner shall apply non-toxic soil binders, equivalent or better in efficiencies than the CARB-approved soil binders, to active unpaved roadways, unpaved staging areas, and unpaved parking area(s) throughout construction to reduce fugitive dust emissions;
 - b. Water the disturbed areas of the active construction sites at least three times per day and more often if uncontrolled fugitive dust is noted;
 - c. Enclose, cover, water twice daily, and/or apply non-toxic soil binders according to manufacturer's specifications to exposed piles with a 5 percent or greater silt content;
 - d. Establish a vegetative ground cover (in compliance with biological resources impact mitigation measures above) or otherwise create stabilized surfaces on all unpaved areas at each of the construction

- sites within 21 days after active construction operations have ceased; and
- e. Increase the frequency of watering, if water is used as a soil binder for disturbed surfaces, or implement other additional fugitive dust mitigation measures, to all active disturbed fugitive dust emission sources when wind speeds (as instantaneous wind gusts) exceed 25 mph.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. 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.

COMPLIANCE VERIFICATION

BIO-9 The project owner shall provide Energy Commission staff, CDFW, and USFWS with reasonable access to the project site and mitigation lands under the control of the project owner and shall otherwise fully cooperate with the Energy Commission's efforts to verify the project owner's compliance with, or the effectiveness of, mitigation measures set forth in the conditions of certification. The project owner shall hold harmless the Designated Biologist, the Energy Commission and staff, and any other agencies with regulatory requirements addressed by the Energy Commission's sole permitting authority for any costs the project owner incurs in complying with the management measures, including stop work orders issued by the CPM or the Designated Biologist. The Designated Biologist shall do all of the following:

1. **Notification.** Notify the CPM, CDFW, and USFWS at least 14 calendar days before initiating ground-disturbing activities. Immediately notify the CPM, CDFW, and USFWS in writing if the project owner is not in compliance with any conditions of certification, including but not limited to any actual or anticipated failure to implement mitigation measures within the time periods specified in the conditions of certification. CDFW shall be notified at their Southern Region Headquarters Office, 4949 Viewridge Avenue, San Diego, CA 92123, (858) 467-4201. USFWS shall be notified at their Ventura office at 2493 Portola Road, Suite B, Ventura, CA 93003, (805) 644-1766.
2. **Monitoring During Grading.** Remain on site daily while grubbing and grading are taking place to avoid or minimize take of listed species, to

check for compliance with all impact avoidance and minimization measures, and to check all exclusion zones to ensure that signs, stakes, and fencing are intact and that human activities are restricted in these protected zones.

3. Fence Monitoring. During construction, maintain and check desert tortoise exclusion fences on a daily basis to ensure the integrity of the fence is maintained. The Designated Biologist shall be present on site to monitor construction and determine fence placement during fence installation. During operation of the project, fence inspections shall occur at least once per month throughout the life of the project, and more frequently after storms or other events that might affect the integrity and function of desert tortoise exclusion fences. Fence repairs shall occur within two days (48 hours) of detecting problems that affect the functioning of the desert tortoise exclusion fencing.
4. Monthly Compliance Inspections. Conduct compliance inspections at a minimum of once per month after clearing, grubbing, and grading are completed and until construction is completed and submit a monthly compliance report to the CPM, USFWS, and CDFW. All observations of listed species and their sign shall be reported to the Designated Biologist for inclusion in the monthly compliance report.
5. Annual Listed Species Status Report. No later than January 31st of every year, if the facility remains in operation, provide the CPM, USFWS, and CDFW an annual Listed Species Status Report, which shall include, at a minimum: 1) a general description of the status of the project site and construction/operation activities, including actual or projected completion dates if known; 2) a copy of the table in the BRMIMP with notes showing the current implementation status of each mitigation measure; 3) an assessment of the effectiveness of each completed or partially-completed mitigation measure in minimizing and compensating for project impacts; and 4) recommendations on how effectiveness of mitigation measures might be improved.
6. Final Listed Species Mitigation Report. No later than 45 days after initiation of project operation, provide the CPM a Final Listed Species Mitigation Report that shall include, at a minimum: 1) a copy of the table in the BRMIMP with notes showing when each of the mitigation measures was implemented; 2) all available information about project-related incidental take of listed species; 3) information about other

project impacts on the listed species; 4) construction dates; 5) an assessment of the effectiveness of conditions of certification in minimizing and compensating for project impacts; 6) recommendations on how mitigation measures might be changed to more effectively minimize and mitigate the impacts of future projects on the listed species; and 7) any other pertinent information, including the level of take of the listed species associated with the project.

7. **Notification of Injured, Dead, or Relocated Listed Species.** In the event of a sighting in an active construction area (e.g., with equipment, vehicles, or workers), injury, kill, or relocation of any listed species, the CPM, CDFW, and USFWS shall be notified immediately by phone. Notification shall occur no later than noon on the business day following the event if it occurs outside normal business hours so that the agencies can determine if further actions are required to protect listed species. Written follow-up notification via FAX or electronic communication shall be submitted to these agencies within two calendar days of the incident and include the following information as relevant:
 - a. **Injured Desert Tortoise.** If a desert tortoise is injured as a result of project-related activities during construction, the Designated Biologist shall immediately take it to a CDFW-approved wildlife rehabilitation and/or veterinarian clinic. Any veterinarian bills for such injured animals shall be paid by the project owner. Following phone notification as required above, the CPM, CDFW, and USFWS shall determine the final disposition of the injured animal if it recovers. Written notification shall include, at a minimum, the date, time, location, circumstances of the incident, and the name of the facility where the animal was taken.
 - b. **Desert Tortoise/Mohave Ground Squirrel Fatality.** If a desert tortoise or Mohave ground squirrel is killed by project-related activities during construction or operation, or if a desert tortoise or Mohave ground squirrel is otherwise found dead, submit a written report with the same information as an injury report. These desert tortoises shall be salvaged according to guidelines described in *Salvaging Injured, Recently Dead, Ill, and Dying Wild, Free-Roaming Desert Tortoise* (Berry 2001). The project owner shall pay to have the desert tortoises transported and necropsied. The report shall include the date and time of the finding or incident.

8. **Stop Work Order**. The CPM may issue the project owner a written stop work order to suspend any activity related to the construction or operation of the project to prevent or remedy a violation of one or more conditions of certification (including but not limited to failure to comply with reporting, monitoring, or habitat acquisition obligations) or to prevent the illegal take of an endangered, threatened, or candidate species. The project owner shall comply with the stop work order immediately upon receipt thereof.

Verification: No later than two calendar days following the above-required notification of a sighting, kill, injury, or relocation of a listed species, the project owner shall deliver to the CPM, CDFW, and USFWS, via FAX or electronic communication, the written report from the Designated Biologist describing all reported incidents of the sighting, injury, kill, or relocation of a listed species, identifying who was notified and explaining when the incidents occurred. In the case of a sighting in an active construction area, the project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM, CDFW, and USFWS.

No later than January 31st of every year, if the PEP facility remains in operation, provide the CPM an annual Listed Species Status Report as described above, and a summary of desert tortoise exclusion fence inspections and repairs conducted in the course of the year.

RESTORATION PLAN FOR IMPACTS TO NATIVE VEGETATION COMMUNITIES

BIO-10 The project owner shall provide restoration for impacts to native vegetation communities and develop and implement a Restoration Plan for all areas subject to temporary project disturbance, except for the temporary construction laydown area which shall be revegetated with native grasses and subshrubs to minimize soil erosion. Upon completion of construction, all temporarily disturbed areas shall be revegetated, excluding the road and roadbed. The following measures shall be implemented for the revegetation effort areas not subject to the facility Landscape Plan. These measures will include:

1. **Plan Details**. The plans shall include at minimum: (a) the location of the mitigation site; (b) locations and details for top soil storage; (c) the plant species to be used; (d) seed collection guidelines; (e) a schematic depicting the mitigation area; (f) time of year that the planting will occur and the methodology of the planting; (g) a

description of the irrigation methodology if used; (h) measures to control exotic vegetation on site; (i) success criteria; (j) a detailed monitoring program; and k) locations and impacts to all Joshua and Juniper Trees. All habitats dominated by non-native species prior to project disturbance shall be revegetated using appropriate native species.

2. Topsoil Salvage. Topsoil shall be stockpiled from the project plant site and linear features for use in revegetation of temporarily disturbed soils. The top two to six inches of soil depending on soil conditions that occur at each area subject to temporary disturbance that are relatively free of noxious weeds such as Russian thistle, yellow star thistle, or similar exotics shall be scraped and separately stockpiled for use in revegetation of temporarily disturbed areas. The amount of topsoil needed for the project plant site and laydown area will be estimated when final design plans are available, and only the amount expected to be needed for revegetation of temporarily disturbed areas will be collected and stockpiled. The collection and stockpiling of topsoil shall be conducted as described on pages 39-40 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen 2003).
3. Seed Stock. Only seed of locally occurring species shall be used for revegetation. Seeds shall contain a mix of short-lived early pioneer species such as native annuals, perennials, and subshrubs (for example: squirreltail; cheesebush; matchweed; peppergrass; rabbitbrush; creosote bush; burro-weed; wolfberry; Nevada tea; needlegrass; rice grass; and goldenhead). Seeding shall be conducted as described in chapter 5 of *Rehabilitation of Disturbed Lands in California* (Newton and Claassen 2003, as updated). A list of plant species suitable for Mojave Desert region revegetation projects, including recommended seed treatments, are included in Appendix A-8 of the same report. The list of plants observed during the required special-status plant surveys of the PEP project area can also be used as a guide to site-specific plant selection for revegetation.
4. Monitoring Requirement and Success Criteria. Post-seeding and planting monitoring will be yearly from years one to five or until the success criteria are met. If the survival and cover requirements have not been met, the owner is responsible for replacement planting to achieve these requirements. Replacement plants shall be monitored with the same survival and growth requirements as previously

mentioned. Remediation activities (e.g. additional planting, removal of non-native invasive species, or erosion control) shall be taken during the five-year period if necessary to ensure the success of the restoration effort. If the mitigation fails to meet the established performance criteria after the five-year maintenance and monitoring period, monitoring and remedial activities shall extend beyond the five-year period until the criteria are met or unless otherwise specified by the Energy Commission. If a fire occurs in a revegetation area within the five-year monitoring period, the owner shall be responsible for a one-time replacement. If a second fire occurs, no replanting is required, unless the fire is caused by the owner's activity.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Within 90 days after completion of project construction, the project owner shall provide to the CPM verification of the total vegetation and community subject to temporary and permanent disturbance. If habitat disturbance exceeded that described in this analysis, the CPM shall notify the project owner of any additional mitigation required to compensate for any additional habitat disturbances. To monitor and evaluate the success of the restoration the owner shall submit annual reports of the restoration including the status of the site, percent cover of native and exotics, and any remedial actions conducted by the owner to the CPM.

SPECIAL-STATUS PLANT SURVEYS/PROTECTION PLAN

BIO-11 To avoid impacts to State and federally listed Threatened and Endangered, Proposed, Petitioned, and Candidate or California Native Plant Society List 1B or 2, plants that might occur on the project site or along the proposed transmission line alignments, pre-construction surveys shall be conducted in these areas in the Spring closest to commencement of construction of the power plant site and reclaimed water pipeline, and in the Spring prior to the commencement of ground disturbance for the transmission line and natural-gas pipeline. If special-status plant species are detected within 100 feet of the project footprint, the qualified botanist shall prepare a Sensitive Plant Protection Plan to avoid direct and indirect impacts. The project owner shall implement the following measures:

1. Pre-Construction Floristic Surveys. A qualified botanist shall conduct floristic surveys on the PEP project site and along linear facilities in all areas subject to ground-disturbing activity including, but not limited to, tower pad preparation and construction areas, tower removal sites, pulling and tensioning sites, assembly yards, and areas subject to grading for new access roads. Surveys shall be conducted within 100

feet of all surface-disturbing activities at the appropriate time of year and according to the most current guidelines from the California Department of Fish and Game and the California Native Plant Society.

2. Sensitive Plant Protection Plan. If special-status plant species are detected during pre-construction surveys, a qualified botanist shall prepare a Sensitive Plant Protection Plan (Plan). Populations of rare plants shall be flagged and mapped prior to any ground disturbance. Where possible the owner shall modify the placement of structures, access roads, laydown areas, and other ground-disturbing activities in order to avoid the plants. The Plan shall include measures for avoiding direct impacts and accidental impacts during construction by identifying the plant occurrence location and establishing an appropriately sized buffer. The Plan shall also include measures to avoid indirect impacts including sedimentation from adjacent disturbed soils, alterations of the site hydrology from changes in the drainage patterns, dust deposition, and displacement or degradation of the habitat from the introduction and spread of noxious weeds. The Plan shall also include a discussion of monitoring and reporting requirements during and after construction.
 - a. Prior to any ground disturbance, any populations of listed plant species identified during the surveys shall be protected by a buffer zone if they can be avoided. The buffer zone shall be established around these areas and shall be of sufficient size to eliminate potential disturbance to the plants from human activity and any other potential sources of disturbance including human trampling, erosion, and dust. The size of the buffer will depend upon the proposed use of the immediately adjacent lands, and includes consideration of the plant's ecological requirements (e.g., sunlight, moisture, shade tolerance, edaphic physical and chemical characteristics) that are identified by the Designated Biologist. The buffer for herbaceous species shall be, at minimum, 50 feet from the perimeter of the population or the individual. A smaller buffer may be established provided there are adequate measures in place to avoid the take of the species with the approval of the USFWS, CDFW, and CPM.
 - b. Impacts to non-listed plant species (i.e., CNPS List 1 and 2 species) shall first be avoided where feasible and, where not feasible, impacts shall be compensated through reseeding (with locally collected seed stock), or other CPM-approved methods. If

project activities will result in loss of more than 10 percent of the known individuals within an existing population of non-listed special-status plant species, the project owner shall preserve existing off-site occupied habitat that is not already part of the public lands in perpetuity at a 2:1 mitigation ratio. The CPM may reduce this ratio depending on the sensitivity of the plant. The preserved habitat shall be occupied by the plant species impacted, and be of superior or similar habitat quality to the impacted areas in terms of soil features, extent of disturbance, habitat structure, and dominant species composition, as determined by a qualified plant ecologist.

3. State or Federally Listed Plant Species: If impacts to listed plants are determined to be unavoidable, the USFWS shall be consulted for authorization and/or the CDFW shall be consulted for authorization through an Incidental Take Permit. Additional mitigation measures to protect or restore listed plant species or their habitat may be required by the CDFW before impacts are authorized.
4. Agency Notification and Avoidance: If state or federally listed plant species are detected during the pre-construction floristic surveys, the CPM, USFWS, and CDFW shall be notified in writing no more than 15 days from detection of the plants.
5. Review and Submittal of Plan: The project owner shall submit to the CPM, USFWS, and CDFW a draft Sensitive Plant Protection Plan. Prior to any ground-disturbing activities within 100 feet of the sensitive plant occurrences detected during the pre-construction floristic surveys, the project owner shall submit to the CPM a final Plan that reflects review and approval by Energy Commission staff in consultation with CDFW and USFWS.

Verification: No later than 60 days prior to ground disturbance the project owner shall submit a report describing the results of floristic surveys conducted on the PEP power plant site and along the proposed transmission line alignment. The report shall be submitted to the CPM, USFWS, and CDFW and shall describe qualifications of the surveyor, survey methods including dates and times, a discussion of visits to reference sites, figures depicting the area(s) surveyed, figures depicting the locations of any special-status plants observed, and a list of all plant species detected.

If special-status plant species are detected during the surveys, the project owner shall submit to the CPM and CDFW a Sensitive Plant Protection Plan (Plan) at least 60 days

prior to the start of any ground-disturbing activities within 100 feet of the sensitive plant occurrences detected during the pre-construction floristic surveys. The CPM will determine the Plan's acceptability in consultation with CDFW and USFWS within 15 days of receipt of the Plan. Any modifications to the approved Plan shall be made only after approval by Energy Commission staff in consultation with CDFW. The project owner shall notify the CPM no fewer than five working days before implementing any CPM-approved modifications to the Plan.

Within 30 days after completion of construction, the project owner shall provide to the CPM, USFWS, and CDFW a construction termination report discussing how mitigation measures described in the Plan were implemented.

AVOIDANCE MEASURES FOR ARROYO TOAD

BIO-12 The project owner shall conduct pre-construction surveys for arroyo toads at the Little Rock Creek transmission line crossing on Segment 2 and implement impact avoidance and minimization measure during all construction activities. These measures include, but are not limited to, the following:

1. Surveys. Prior to ground disturbance the project owner shall retain a biologist who is familiar with arroyo toads that occur in desert habitats to conduct clearance surveys prior to construction and monitor all construction activities at Little Rock Creek. Clearance surveys shall be completed within 24 hours of construction. If arroyo toads are detected, a 500 foot disturbance free buffer shall be implemented and the area shall be avoided until the owner completes consultation with the USFWS.
2. Monitoring. The project owner shall conduct full-time monitoring during ground disturbance and construction of the all areas within 500 feet of Little Rock Creek. Although this species is primarily nocturnal and aestivates during the winter, monitoring shall occur year round whenever day time temperatures exceed 50 degrees Fahrenheit and during periods of rainfall. If arroyo toads are detected, the Designated Biologist shall contact the CPM and USFWS within 24 hours. Work shall not occur within 500 feet of Little Rock Creek until approved by the CPM and USFWS.

Verification: Within 30 days of completion of arroyo toad clearance surveys the Designated Biologist shall submit a report to the CPM describing how mitigation measures described above have been satisfied. The report shall include the survey

results and any other information needed to demonstrate compliance with the measures described above.

DESERT TORTOISE CLEARANCE SURVEYS AND EXCLUSION FENCING

BIO-13 The project owner shall undertake appropriate measures to manage construction at the plant site and linear facilities in a manner to avoid impacts to desert tortoise. Methods for clearance surveys, fence installation, and other procedures shall be consistent with those described in the *Guidelines for Handling Desert Tortoise During Construction Projects* (Desert Tortoise Council 1999) or more current guidance provided by CDFW and USFWS. These measures include, but are not limited to, the following:

1. Fence Installation. Prior to ground disturbance, the entire plant site shall be fenced with permanent desert-tortoise exclusion fence. To avoid impacts to desert tortoise during fence construction, the proposed fence alignment shall be flagged and the alignment surveyed within 24 hours prior to fence construction. Surveys shall be conducted by the Designated Biologist using techniques approved by the USFWS and CDFW. Biological Monitors may assist the Designated Biologist under his or her supervision. These surveys shall provide 100 percent coverage of all areas to be disturbed during fence construction and an additional transect along both sides of the proposed fence line. This fence line transect shall cover an area approximately 90 feet wide centered on the fence alignment. Transects shall be no greater than 30 feet apart. All desert-tortoise burrows, and burrows constructed by other species that might be used by desert tortoises, shall be examined to assess occupancy of each burrow by desert tortoises and handled in accordance with USFWS-approved protocol.
 - a. Timing, Supervision of Fence Installation. The exclusion fencing shall be installed prior to the onset of site clearing and grubbing. The fence installation shall be supervised by the Designated Biologist and monitored by the Biological Monitors to ensure the safety of any tortoise present.
 - b. Fence Material and Installation. The permanent tortoise exclusionary fencing shall be constructed in compliance with current USFWS guidelines.

- c. Security Gates. Security gates shall be designed with minimal ground clearance to deter ingress by tortoises, including gates that would exclude public access to the project site.
 - d. Tower Fencing. If tortoises are discovered during clearance surveys of the linear routes, the tower locations shall be temporarily fenced with tortoise exclusion fencing to prevent desert tortoise entry during construction. Temporary fencing must follow current USFWS guidelines for permanent fencing and supporting stakes shall be sufficiently spaced to maintain fence integrity.
 - e. Fence Inspections. Following installation of the desert tortoise exclusion fencing for both the permanent site fencing and temporary fencing in the utility corridors, the fencing shall be regularly inspected. Permanent fencing shall be inspected monthly and during/following all major rainfall events. Any damage to the fencing shall be temporarily repaired immediately to keep tortoises out of the site, and permanently repaired within two days of observing damage. Inspections of permanent site fencing shall occur for the life of the project. Temporary fencing must be inspected weekly and, where drainages intersect the fencing, during and immediately following major rainfall events. All temporary fencing shall be repaired immediately upon discovery and, if the fence may have permitted tortoise entry while damaged, the Designated Biologist shall inspect the utility corridor or tower site for tortoise.
2. Desert Tortoise Clearance Surveys. Following construction of the tortoise exclusionary fencing around the power plant site, all fenced areas shall be cleared of tortoises by the Designated Biologist, who may be assisted by Biological Monitors. A minimum of two clearance surveys, with negative results, must be completed, and these must coincide with heightened desert tortoise activity from late March through May, and during October. To facilitate seeing the ground from different angles, the second clearance survey shall be walked at 90 degrees to the orientation of the first clearance survey.
3. Relocation for Desert Tortoise. If desert tortoises are detected on the power plant site during clearance or other activities, the owner shall halt ground disturbing activities within 500 feet of the tortoise, prepare a Desert Tortoise Translocation Plan, and coordinate with the USFWS, CDFW, and CPM regarding the disposition of the animals. If located

during clearance surveys within the transmission line project route, the tortoise would be allowed to continue unimpeded out of harm's way. Only in the event that a tortoise required relocation from project impact area to prevent injury, the Designated Biologist shall move the tortoise the shortest possible distance, keeping it out of harm's way but still within its home range. Desert tortoise encountered during construction of any of the utility corridors shall be similarly treated in accordance with the techniques described in the *Guidelines for Handling Desert Tortoise During Construction Projects* (Desert Tortoise Council 1999) or more current guidance on the USFWS website. Any person handling tortoise must be approved by the USFWS and CDFW and be on site during ground disturbance or construction. If a desert tortoise is discovered on the power plant site the project owner shall prepare a Desert Tortoise Translocation Plan. The Translocation Plan shall follow the most current USFWS guidelines for the translocation of desert tortoise and shall be submitted to the USFWS, CDFW, and CPM for approval. Desert tortoise shall not be moved pending the approval of the plan. Prior to initiating further ground disturbance at the project site, the project owner shall conduct additional clearance surveys of the power plant site.

4. **Burrow Inspection.** All potential desert tortoise burrows within the fenced area shall be searched for presence. In some cases, a fiber optic scope may be needed to determine presence or absence within a deep burrow. To prevent reentry by a tortoise or other wildlife, all burrows shall be collapsed once absence has been determined.
5. **Burrow Excavation.** Burrows inhabited by tortoises shall be excavated by the Designated Biologist or other USFWS/CDFW/CPM-approved handler using hand tools, and then collapsed or blocked to prevent re-occupation. If excavated during May through July, the Designated Biologist shall search for desert tortoise nests/eggs. All desert tortoise handling and removal, and burrow excavations including nests, shall be conducted by the Designated Biologist or other USFWS/CDFW/CPM-approved handler (see paragraph 3 above) in accordance with the USFWS-approved protocol (Desert Tortoise Council 1999) or more current guidance on the USFWS website.
6. **Monitoring During Clearing.** Following construction of the desert tortoise exclusion fencing and clearance surveys, heavy equipment shall be allowed to enter the project site to perform earth work such as clearing, grubbing, leveling, and trenching. A Biological Monitor shall be on site

during initial clearing and grading activities. Should a tortoise be discovered, the measures outlined in paragraph 3 shall be followed.

7. **Reporting**. The Designated Biologist shall record the following information for any desert tortoises observed or handled: a) the locations (narrative and maps) and dates of observation; b) general condition and health, including injuries, state of healing, and whether desert tortoise voided their bladders; c) location moved from and location moved to (using GPS technology); d) gender, carapace length, and diagnostic markings (i.e., identification numbers or marked lateral scutes); e) ambient temperature when handled and released; and f) digital photograph of each handled desert tortoise as described in the paragraph below. Desert tortoise moved from within project areas shall be marked for future identification as described in *Guidelines for Handling Desert Tortoise During Construction Projects* (Desert Tortoise Council 1999) or more current guidance on the USFWS website. Digital photographs of the carapace, plastron, and fourth costal scute shall be taken. Scutes shall not be notched for identification. Any desert tortoises observed within the project area or adjacent habitat shall be reported to the USFWS, CDFW, and CPM by written and electronic correspondence within 24 hours.

Verification: Within 30 days of completion of desert tortoise clearance surveys, the Designated Biologist shall submit a report to the CPM, USFWS, and CDFW describing how each of the mitigation measures described above has been satisfied. The report shall include the desert tortoise survey results, capture and release locations of any relocated desert tortoises, and any other information needed to demonstrate compliance with the measures described above.

If a desert tortoise is located on the power plant site, the project owner shall submit to Energy Commission staff, USFWS, and CDFW a draft Desert Tortoise Translocation Plan. The CPM will review the plan and provide comments within 30 days receipt of the draft plan. All modifications to the Desert Tortoise Translocation Plan must be made only after approval by the Energy Commission staff in consultation with USFWS and CDFW. The project owner shall notify the CPM no fewer than five working days before implementing any CPM-approved modifications to the Translocation Plan.

Within 30 days after initiation of translocation activities, the Designated Biologist shall provide to the CPM for review and approval, a written report identifying which items of the Translocation Plan have been completed, and a summary of all modifications to measures made during implementation.

RAVEN FEE, MONITORING, MANAGEMENT, AND CONTROL PLAN

BIO-14 The project owner shall design and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines and that meets the approval of the USFWS, CDFW, and the CPM. Any subsequent modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFW. The Raven Plan shall include, but not be limited to, a program to monitor increased raven presence in the project vicinity and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any project-related increases in raven numbers during construction, operation, and decommissioning. The threshold for implementation of raven control measures shall be any increases in raven numbers from baseline conditions, as detected by monitoring to be proposed in the Raven Plan. Regardless of raven monitoring results, the project owner shall be responsible for all other aspects of the Raven Plan, including avoidance and minimization of project-related trash, water sources, or perch/roost sites that could contribute to increased raven numbers. In addition, to off-set the cumulative contributions of the project to desert tortoise from increased raven numbers, the project owner shall also contribute to the USFWS Regional Raven Management Program. The project owner shall do all of the following:

1. Prepare and Implement a Raven Management Plan that includes the following:
 - a. Identify conditions associated with the project that might provide raven subsidies or attractants;
 - b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
 - c. Describe control practices for ravens;
 - d. Address monitoring and nest removal during construction and for the life of the project; and
 - e. Discuss reporting requirements.
2. Contribute to the REAT Regional Raven Management Program. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation

(NFWF) to support the REAT Regional Raven Management Program. The amount shall be a one-time payment of \$105 per acre (135.5 acres) of permanent disturbance fee or \$14,227.50.

Verification: No later than 30 days prior to any construction-related ground disturbance activities, the project owner shall provide the CPM, USFWS, and CDFW with the final version of a Raven Plan. All modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFW. No later than 60 days prior to the start of construction, the project owner shall provide written verification to the CPM that NFWF has received and accepted payment into the project's sub-account of the REAT Account to support the USFWS Regional Raven Management Program. On January 31st of each year following construction, the Designated Biologist shall provide a report to the CPM that includes a summary of the results of raven management and control activities for the year, a discussion of whether raven control and management goals for the year were met, and recommendations for raven management activities for the upcoming year.

PRE-CONSTRUCTION NEST SURVEYS AND IMPACT AVOIDANCE MEASURES FOR MIGRATORY BIRDS

BIO-15 Pre-construction nest surveys shall be conducted if construction activities will occur from February 1st through August 15th. The Designated Biologist or Biological Monitor conducting the surveys shall be experienced bird surveyors and familiar with standard nest-locating techniques such as those described in Martin and Guepel (1993). Surveys shall be conducted in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat in the project site and within 500 feet of the boundaries of the plant site and linear facilities;
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys shall be conducted within the 10 days preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests are detected during the survey, a no-disturbance buffer zone (protected area surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with CDFW, USFWS, and CPM) and a monitoring plan shall be developed. Nest

locations shall be mapped using GPS technology and submitted, along with a weekly report stating the survey results, to the CPM;

4. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed. Activities that might, in the opinion of the Designated Biologist and in consultation with the CPM, disturb nesting activities shall be prohibited within the buffer zone until such a determination is made.
5. If an occupied golden eagle nest is detected within one mile of the active construction, a one mile no activity buffer will be implemented. The prescribed buffers may be adjusted to reflect existing conditions including ambient noise, topography, and disturbance with the approval of the CPM. The biological monitor(s) shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails. The biological monitor(s) shall be responsible for documenting the results of the surveys and ongoing monitoring and will provide a copy of the monitoring reports for impact areas to the respective agencies. The project owner shall also prepare and implement a Golden Eagle Monitoring and Management Plan for the duration of construction to ensure that project construction activities do not result in injury or disturbance to golden eagles. The monitoring methods shall be consistent with those described in the Interim Golden Eagle Inventory and Monitoring Protocols, and Other Recommendations (page I et al. 2010) or more current guidance from the USFWS. The Monitoring and Management Plan shall be prepared in consultation with the USFWS. Triggers for adaptive management shall include any evidence of project-related disturbance to nesting golden eagles including, but not limited to: agitation behavior (displacement, avoidance, and defense); increased vigilance behavior at nest sites; changes in foraging and feeding behavior; or nest site abandonment. The Monitoring and Management Plan shall include a description of adaptive management actions, which shall include, but not be limited to, cessation of construction activities that are deemed by the Designated Biologist to be the source of golden eagle disturbance.

Verification: At least 10 days prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM a letter report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey, identity and qualifications of the surveyor(s), and a list of species

observed. If active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest and shall depict the boundaries of the no-disturbance buffer zone around the nest.

SWAINSON'S HAWK IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-16 The project owner shall implement the following measures to avoid and offset impacts to Swainson's hawk:

1. Pre-Construction Surveys. To assure that nesting Swainson's hawks are not disturbed by construction activities, a qualified ornithologist approved by the CDFW and CPM shall conduct pre-construction surveys prior to commencement of ground disturbing activities. Survey results shall be provided to the CDFW and CPM in a written report, within 30 days of commencement of construction activities.
2. Swainson's Hawk Monitoring and Mitigation Plan. If a Swainson's hawk nest site is found within 0.5 mile of the project site, the Designated Biologist shall prepare a Swainson's Hawk Monitoring and Mitigation Plan in consultation with CDFW and Energy Commission staff. This plan shall include detailed measures to avoid and minimize impacts to Swainson's hawks in and near the construction areas and shall also include the following:
 - a. If a nest site is found, no new disturbances or other project-related activities that may cause nest abandonment or forced fledging will be initiated within .5 mile of an active nest between March first and September 15th. These buffer zones may be adjusted in consultation with the CPM and CDFW.
 - b. During the nesting season (March 1st through September 15th), the Designated Biologist shall be present daily, during any site mobilization, ground disturbance, or construction on site, monitoring the behavior of any nesting Swainson's hawks within 0.5 mile of the project. The Designated Biologist shall have authority to order the cessation of all construction activities within 0.5 mile of any Swainson's hawk nest if the birds exhibit abnormal nesting behavior, which may cause reproductive failure (nest abandonment and loss of eggs and/or young). Construction shall not resume until the Designated Biologist has consulted with the CDFW and CPM.

The Designated Biologist, CPM, and CDFW must confirm that the bird's behavior has normalized prior to the initiation of construction.

- c. If construction or other project-related activities cause nest abandonment by a Swainson's hawk or forced fledging, monitoring of the nest site by a qualified biologist shall be required to determine if the nest is abandoned. If the nest is abandoned and if the nestlings are still alive, the project owner shall fund the recovery and hacking (controlled release of captive reared young) of the nestling(s). Transport to the raptor center shall only be approved by the CPM and CDFW Regional Representative.
 - d. If relocation of nestlings is required, the project owner shall provide a written report documenting the relocation efforts. The report shall include what actions were taken to avoid the nest, the location of the nest, the number and condition of the eggs/nestlings taken from the nest, the location of where the eggs/nestlings are incubated, the survival rate, the location of the nests where the chicks are relocated, and whether the birds were accepted by the adopted parent.
 - e. Nest trees for Swainson's hawks in the project area shall not be removed unless avoidance measures are determined to be infeasible. If a nest tree for a Swainson's hawk must be removed from the project area, it shall occur between October first and February first.
3. Discovery of an Injured Swainson's Hawk. If a Swainson's hawk is found injured during project-related activities on the project site, it shall be immediately relocated to a raptor recovery center approved by the CDFW Regional Representative. Any costs associated with the care or treatment of such injured Swainson's hawks shall be borne by the project owner. The Designated Representative shall immediately notify the CDFW and CPM of the incident unless the incident occurs outside of normal business hours. In that event, the CDFW and CPM shall be notified no later than noon on the next business day. Notification to the CDFW and CPM shall be via telephone or email, followed by a written incident report. Notification shall include the date, time, location, and circumstances of the incident.

Verification: Survey results shall be provided to the CDFW and CPM in a written report within 30 days of commencement of construction activities. If pre-construction

surveys detect nesting Swainson's hawks within 0.5 mile of proposed construction activities, the Designated Biologist shall provide to CDFW and the CPM a Swainson's Hawk Monitoring and Mitigation Plan at least 30 days prior to the start of any project-related, site-disturbance activities. The project owner shall report monthly to CDFW and the CPM for the duration of construction on the implementation of Swainson's hawk avoidance and minimization measures described in the Swainson's Hawk Monitoring and Mitigation Plan. Within 30 days after completion of construction, the project owner shall provide to the CDFW and CPM a written construction termination report identifying how mitigation measures described in the plan have been completed.

No later than two calendar days following the above-required notification of a sighting, kill, injury, or relocation of a Swainson's hawk, the project owner shall deliver to the CPM and CDFW via FAX or electronic communication the written report from the Designated Biologist describing all reported incidents of the sighting, injury, kill, or relocation of a Swainson's hawk, identifying who was notified and explaining when the incident(s) occurred. In the case of a sighting in an active construction area, the project owner shall, at the same time, submit a map (e.g., using Geographic Information Systems) depicting both the limits of construction and sighting location to the CPM and CDFW.

SWAINSON'S HAWK HABITAT COMPENSATORY MITIGATION

BIO-17 The project owner shall either assume that a Swainson's hawk nest is within five miles of the project site and provide compensatory mitigation as described below or complete CDFW protocol surveys within five miles of project facilities that result in permanent impacts to Swainson's hawk foraging habitat. If surveys are completed they shall include the following components.

The survey periods shall follow a specified schedule:

- Period I occurs from January 1st to March 31st
- Period II occurs from April 1st to April 30th
- Period III occurs from May 1st to May 30th
- Period IV occurs from June 1st to July 15th

No fewer than three surveys per period in at least two survey periods shall be completed immediately prior to the start of project construction. All nest sites shall be recorded, mapped using GIS, and provided to the CPM and CDFW. Compensatory mitigation at a 2:1 ratio shall be required for permanent impacts. If active Swainson's hawk nests (i.e., any nest active within five years) are not detected within five miles of the project site or

linear facilities, the project owner will not be required to provide compensatory mitigation.

If the project owner assumes presence, the project owner shall provide compensatory mitigation acreage for 211 acres of Swainson's hawk habitat lands, adjusted to reflect the final project footprint, as specified in this condition. In addition, the project owner shall provide funding for initial improvement and long-term maintenance, enhancement, and management of the acquired lands for protection and enhancement of Swainson's hawk populations, and comply with other related requirements of this condition.

- a. Loss of foraging habitat for Swainson's hawks shall be mitigated by providing Habitat Management (HM) lands at a ratio of 2:1 for any foraging habitat impacted within a five-mile radius of active Swainson's hawk nest(s) (CDFW considers a nest active if it was used one or more times within the last 5 years). Foraging habitat includes, but is not limited to, alfalfa, fallow fields, beet, tomato, onions, and other low-growing row or field crops, dry-land and irrigated pasture, and cereal grain crops (including corn after harvest). Joshua tree woodland shall be considered foraging habitat in the Antelope Valley.
- b. Lands which are currently in urban use or lands that have no existing or potential value for foraging Swainson's hawks will not require mitigation. The project owner will provide the CPM and CDFW a report of potential foraging lands impacted by the proposed project as determined by consultation with the CDFW and recent site-specific surveys conducted by a CDFW -qualified raptor biologist.

This acreage was calculated as follows: a ratio of 2:1 for the power plant site (100 acres), 2:1 ratio for the laydown site (40 acres), and a 2:1 ratio (71 acres) for the loss of native vegetation and agricultural lands associated with the transmission line. The project owner shall use a good faith effort to purchase compensation acres for Swainson's hawk within 15 miles of previously surveyed locations of Swainson's hawk nesting sites. Costs of these requirements are estimated to be \$2,794,265.00 (see Biological Resources Table 2 for a complete breakdown of costs and acreage). All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation based on changing land costs or management

fees. Regardless of the estimates, the project owner is responsible for providing adequate funding to implement the required mitigation.

These impact acreages shall be adjusted to reflect the final project footprint. For purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the project site and 25.25 acres of Mohave creosote bush scrub and Joshua tree woodland, and 10.22 acres of agricultural lands that occur on the transmission line.

This compensation acreage may be included (“nested”) within the acreage acquired and managed as Mohave ground squirrel habitat compensation (Condition of Certification **BIO-20**) only if:

- A minimum of 211 acres of suitable foraging habitat including a minimum of 76.5 acres of Joshua tree woodland are present. The project owner shall use a good faith effort to purchase compensation acres for Swainson’s hawk within 15 miles of previously surveyed locations of Swainson’s hawk nesting sites;
- The composition of vegetation communities that occur within the proposed mitigation lands, including the acreage of Joshua tree woodland, may be adjusted based on the habitat value of the proposed mitigation lands with the approval of the CPM and CDFW; and
- The Mohave ground squirrel habitat compensation lands are acquired and dedicated as permanent conservation lands within 18 months of the start of project construction.

If these three criteria are not met, then the project owner shall provide the required number of acres of Swainson’s hawk habitat compensation lands, adjusted to reflect the final project footprint and additional delineation of suitable habitat independent of any compensation land required under other conditions of certification, and shall also provide funding for the initial improvement and long-term maintenance and management of the acquired lands, and shall comply with other related requirements this condition.

The project owner shall provide financial assurances as described below in the amount of \$2,794,265.00. In lieu of acquiring lands itself, the project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT)

Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is \$2,881,152.45. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 211 acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in Biological Resources Table 2. Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

COMPENSATORY MITIGATION LAND ACQUISITION

1. Method of Acquisition. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction shall be complete only upon completion of all terms and conditions described in this condition of certification.
 - a. The project owner shall acquire lands and transfer title and/or conservation easement to a state or federal land management agency or to a third-party, non-profit land management organization, as approved by the CPM in consultation with CDFW; or
 - b. The project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in Biological Resources Table 2 (adjusted to reflect the final project footprint and any applicable REAT adjustments to costs).
2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition to meet Energy Commission and CESA requirements shall be equal to or better than the quality and function of the habitat impacted and:

- a. Be within the Western Mojave Desert;
 - b. Provide moderate to good quality foraging habitat for Swainson's hawk with capacity to improve in quality and value for this species;
 - c. Be near lands for which there is reasonable evidence (for example, recent (<15 years) CNDDB occurrences on or immediately adjacent to the proposed lands) suggesting current occupation by Swainson's hawk, ideally with populations that are stable, recovering, or likely to recover;
 - d. Be near larger blocks of land that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
 - e. Not have a history of intensive recreational use or other disturbance that might cause future erosional damage or other habitat damage, and make habitat recovery and restoration infeasible;
 - f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
 - g. Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
 - h. Have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, agrees in writing to the acceptability of land without these rights.
3. 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 Swainson's hawk in relation to the criteria listed above and must be approved by the CPM. The CPM will share the proposal with and consult with CDFW before deciding whether to approve or disapprove the proposed acquisition.
 4. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the

compensation lands after the CPM, in consultation with CDFW, approved the proposed compensation lands:

- a. Preliminary Report: The project owner, or 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM in consultation with CDFW. For conveyances to the State, approval may also be required from the California Department of General Services, the California Fish and Game Commission 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 in consultation with CDFW. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to another public agency approved by the CPM in consultation with CDFW. 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 approved non-profit organization holds a conservation easement, CDFW shall be named a third party beneficiary. 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, in consultation with CDFW, of the terms of any transfer of fee title or conservation easement to the compensation lands.
- c. 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, in consultation with CDFW, before it can be used to establish funding levels or management activities for the compensation lands.

5. Compensation Lands Acquisition Costs: The project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include, but shall not be limited to, the items listed below. Management costs including site cleanup measures are described separately, in the following section:
 - a. Level 1 Environmental Site Assessment;
 - b. Appraisal;
 - c. Title and document review costs;
 - d. Expenses incurred from other state, federal, or local agency reviews;
 - e. Closing and escrow costs;
 - f. Overhead costs related to providing compensation lands to CDFW or an approved third party;
 - g. Biological survey(s) to determine mitigation value of the land; and
 - h. Agency costs to accept the land (e.g., writing and recording of conservation easements (title transfer).

COMPENSATORY MITIGATION LAND IMPROVEMENT

1. Land Improvement Requirements: The project owner shall fund activities that the CPM, in consultation with the CDFW, 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 surveys of boundaries and property lines, installation of signs, trash removal, and other site cleanup measures, construction and repair of fences, invasive plant removal, removal of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at \$250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to Gov. Code § 65965), if it meets the approval of the CPM in consultation with

CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for desert tortoise. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.
2. Long-term Management Plan. The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM in consultation with CDFW.
3. Long-Term Maintenance and Management Funding. The project owner shall provide money to establish an account with a non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the project owner shall provide initial payment of \$305,950.00 calculated at \$1,450 an acre for each compensation acre, as shown in Biological Resources Table 2 (above) into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis

is completed and approved. If the approved analysis indicates less than \$1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with the project owner and CDFW before deciding whether to approve an entity to hold the project's long-term maintenance and management funds on any lands. The CPM, in consultation with the project owner and CDFW, may designate another state agency or non-profit organization to hold the 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, leave the money in the REAT Account, or designate another entity such as NFWF to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

- i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.
- ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFW, or the approved third-party, long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this

provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.

- iii. Pooling Funds. A CPM-approved, non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.
- iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFW or an approved third party for reasonable expenses incurred during title, easement, and documentation review, expenses incurred from other state or state-approved federal agency reviews, and overhead related to providing compensation lands.

COMPENSATORY MITIGATION LAND SECURITY

1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of Swainson's hawk compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security ("Security"). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, of the form of the Security.

The Security amount shall be based on the estimates provided in Biological Resources Table 2. This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The project owner shall provide verification that financial assurances have been established to the CPM, with copies of the document(s) to CDFW, 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 ground-disturbing activities described in section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of \$2,881,152.45 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition (below). The Security is calculated in part from the items that follow but are adjusted as specified below (consult Biological Resources Table 2 for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

- i. land acquisition costs for compensation land, calculated at \$10,000/acre;
- ii. Site assessments, appraisals, biological surveys, transaction closing, and escrow costs, calculated as \$18,000 total per parcel (presuming 60 acres per parcel);
- iii. Initial site clean-up, restoration, or enhancement, calculated at \$250/acre;
- iv. Third-party and agency administrative transaction costs and overhead, calculated as percentages of land cost;
- v. Long-term management and maintenance fund, calculated at \$1,450 per acre;
- vi. NFWF fees to establish a project-specific account, manage the sub-account for acquisition and initial site work, and

manage the sub-account for long term management and maintenance.

2. The project owner may elect to comply with some or all of the requirements in this condition by providing funds to implement the requirements into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs of implementing the requirement (as set forth in the Security section of this condition, paragraph 3, above). If the actual cost of the acquisition, initial protection and habitat improvements, long-term funding or other cost is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, the long-term funding requirements as established in an approved PAR or PAR-like analysis, or the other actual costs that are estimated in the table. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall be returned to the project owner.
3. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFW prior to land acquisition, enhancement, or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the Energy Commission's certification of the project.
4. The project owner may request the CPM to provide it with all available information about any funds held by the Energy Commission, CDFW, or NFWF as project security, or funds held in a NFWF sub-account for this project, or other project-specific account held by a third party. The CPM shall also fully

cooperate with any independent audit that the project owner may choose to perform on any of these funds.

Verification: The project owner shall provide the CPM with either the results of the nesting surveys or written verification that the project owner shall assume presence no less than 60 days prior to ground disturbance or site mobilization on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the project owner shall provide verification to the CPM and CDFW that an approved Security has been established in accordance with this condition of certification no later than 30 days prior to beginning project ground-disturbing activities. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security"). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, of the form of the Security. The project owner, or an approved third party, shall complete and provide written verification to the CPM and CDFW of the compensation lands acquisition and transfer within 18 months of the start of Project ground-disturbing activities.

No later than 12 months after the start of any ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase and shall obtain approval from the CPM, in consultation with CDFW, prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM and CDFW of such completion no later than 18 months after the issuance of the Energy Commission Decision.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFW to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be

paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed, and written verification provided to the CPM, no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM and CDFW with a management plan for the compensation lands associated with any phase of construction within 180 days of the land or easement purchase, as determined by the date on the title. The CPM, in consultation with CDFW, shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project-related ground disturbance, the project owner shall provide to the CPM and CDFW an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during project construction. If this analysis shows that more lands were disturbed than was anticipated in this condition, the project owner shall provide the Energy Commission with additional compensation lands and funding commensurate with the added impacts and applicable mitigation ratios set forth in this condition. A final analysis of all project-related ground disturbance may not result in a reduction of compensation requirements if the deadlines established under this condition for transfer of compensation lands and funding have passed prior to completion of the analysis.

BURROWING OWL IMPACT AVOIDANCE, MINIMIZATION, AND COMPENSATION MEASURES

BIO-18 The project owner shall implement the following measures to avoid and off-set impacts to burrowing owls:

1. Pre-Construction Surveys. Concurrent with desert tortoise clearance surveys, the Designated Biologist shall conduct pre-construction surveys for burrowing owls within the project site and along all linear facilities in accordance with CDFW guidelines (CBOC 1993). Pre-construction surveys for burrowing owls shall occur no more than 30 days prior to initiation of ground disturbance or site mobilization activities. The survey area shall include the Project Disturbance Area (the Project Disturbance Area means all lands disturbed in the construction and operation of the PEP Project) and surrounding 500 foot survey buffer where access is legally available.
2. Implement Avoidance Measures. If an active burrowing owl burrow is detected within 500 feet from the Project Disturbance Area, the following avoidance and minimization measures shall be implemented:

- a. Establish Non-Disturbance Buffer. Fencing shall be installed at a 250-foot radius from the occupied burrow to create a non-disturbance buffer around the burrow. The non-disturbance buffer and fence line may be reduced to 160 feet if all project-related activities that might disturb burrowing owls would be conducted during the non-breeding season (September 1st through January 31st). Signs shall be posted in English and Spanish at the fence line indicating no entry or disturbance is permitted within the fenced buffer.
 - b. Monitoring: If construction activities would occur within 500 feet of the occupied burrow during the nesting season (February 1st – August 31st), the Designated Biologist or Biological Monitor shall monitor to determine if these activities have the potential to adversely affect nesting efforts, and shall implement measures to minimize or avoid such disturbance.
3. Passive Relocation of Burrowing Owls. If pre-construction surveys indicate the presence of burrowing owls within the Project Disturbance Area (the Project Disturbance Area means all lands disturbed in the construction and operation of the PEP project), the project owner shall prepare and implement a Burrowing Owl Relocation and Mitigation Plan in addition to the avoidance measures described above. The final Burrowing Owl Relocation and Mitigation Plan shall be approved by the CPM, in consultation with USFWS and CDFW, and shall:
 - a. Identify and describe suitable relocation sites on the project site or within one mile of the Project Disturbance Area, and describe measures to ensure that burrow installation or improvements would not affect sensitive species habitat or existing burrowing owl colonies in the relocation area;
 - b. Provide guidelines for creation or enhancement of at least two natural or artificial burrows per relocated owl, including a discussion of timing of burrow improvements, specific location of burrow installation, and burrow design. Design of the artificial burrows shall be consistent with CDFW guidelines (CDFW 1995) and shall be approved by the CPM in consultation with CDFW and USFWS;
 - c. Passive relocation sites shall be in areas of suitable habitat for burrowing owl nesting, and be characterized by minimal human disturbance and access. Relative cover of non-native plants within

the proposed relocation sites shall not exceed the relative cover of non-native plants in the adjacent habitats; and

- d. Provide detailed methods and guidance for passive relocation of burrowing owls occurring within the Project Disturbance Area.

4. Acquire Compensatory Mitigation Lands for Burrowing Owls. The following measures for compensatory mitigation shall apply only if burrowing owls are detected within the Project Disturbance Area. The project owner shall acquire, in fee or in easement, 19.5 acres of land for each burrowing owl that is displaced by construction of the project. This compensation acreage of 19.5 acres per single bird or pair of nesting owls assumes that there is no evidence that the compensation lands are occupied by burrowing owls. If burrowing owls are observed to occupy the compensation lands, then only 9.75 acres per single bird or pair is required per CDFW (1995) guidelines. If the compensation lands are contiguous to currently occupied habitat, then the replacement ratio will be 13.0 acres per pair or single bird. The project owner shall provide funding for the enhancement and long-term management of these compensation lands. The acquisition and management of the compensation lands may be delegated by written agreement to CDFW or to a third party, such as a non-governmental organization dedicated to habitat conservation, subject to approval by the CPM, in consultation with CDFW and USFWS, prior to land acquisition or management activities. Additional funds shall be based on the adjusted market value of compensation lands at the time of construction to acquire and manage habitat. In lieu of acquiring lands itself, the project owner may satisfy the requirements of this condition by depositing funds into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described in section 3.i. of Condition of Certification **BIO-20:**

- a. Criteria for Burrowing Owl Mitigation Lands. The terms and conditions of this acquisition or easement shall be as described in paragraph 1 of **BIO-20** (Mohave ground squirrel Compensatory Mitigation), with the additional criteria to include: 1) the mitigation land must provide suitable habitat for burrowing owls; and 2) the acquisition lands must either currently support burrowing owls or be within dispersal distance from areas occupied by burrowing owls (generally approximately five miles). The burrowing owl mitigation

lands may be included with the Mohave ground squirrel mitigation lands ONLY if these two burrowing owl criteria are met. If the burrowing owl mitigation land is separate from the acquisition required for Mohave ground squirrel compensation lands, the project owner shall fulfill the requirements described below in this condition.

- b. Security. If burrowing owl mitigation land is separate from the acreage required for Mohave ground squirrel compensation lands, the project owner or an approved third party shall complete acquisition of the proposed compensation lands prior to initiating ground-disturbing project activities. Alternatively, financial assurance can be provided by the project owner to the CPM, with copies of the document(s) to CDFW and the USFWS, to guarantee that an adequate level of funding is available to implement the mitigation measure described in this condition. These funds shall be used solely for implementation of the measures associated with the project. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account, or another form of security ("Security") prior to initiating ground-disturbing project activities. Prior to submittal to the CPM, the Security shall be approved by the CPM, in consultation with CDFW and the USFWS, to ensure funding. The estimated costs of enhancement and endowment (see subsection on Mohave ground squirrel, for a discussion of the assumptions used in calculating the Security, which are based on an estimate of \$15,169 per acre to fund acquisition, enhancement, and long-term management). The final amount due will be determined by the PAR analysis conducted pursuant to condition of Certification **BIO-17**.

Verification: If pre-construction surveys detect burrowing owls within 500 feet of proposed construction activities, the Designated Biologist shall provide to the CPM, CDFW, and USFWS documentation indicating that non-disturbance buffer fencing has been installed at least 10 days prior to the start of any construction-related ground disturbance activities. The project owner shall report monthly to the CPM, CDFW, and USFWS for the duration of construction on the implementation of burrowing owl avoidance and minimization measures.

Within 30 days after completion of construction the project owner shall provide to the CPM, CDFW, and USFWS a written construction termination report identifying how mitigation measures described in the plan have been completed.

If pre-construction surveys detect burrowing owls within the Project Disturbance Area, the project owner shall notify the CPM, CDFW, and USFWS no less than 10 days of completing the surveys that a relocation of owls is necessary. The project owner shall do all of the following if relocation of one or more burrowing owls is required:

- a. Within 30 days of completion of the burrowing owl pre-construction surveys, submit to the CPM, CDFW, and USFWS a Burrowing Owl Relocation and Mitigation Plan;
- b. No less than 90 days prior to acquisition of the burrowing owl compensation lands, the project owner, or an approved third party, shall submit a formal acquisition proposal to the CPM, CDFW, and USFWS describing the parcel intended for purchase. At the same time the project owner shall submit a PAR or PAR-like analysis for the parcels for review and approval by the CPM, CDFW, and USFWS;
- c. Within 90 days of the land or easement purchase, as determined by the date on the title, the project owner shall provide the CPM with a management plan for review and approval, in consultation with CDFW and USFWS, for the compensation lands and associated fund;
- d. No later than 30 days prior to the start of construction-related ground disturbing activities, the project owner shall provide written verification of Security in accordance with this condition of certification;
- e. No later than 18 months after the start of construction-related ground disturbance activities, the project owner shall provide written verification to the CPM, CDFW, and USFWS that the compensation lands or conservation easements have been acquired and recorded in favor of the approved recipient; and
- f. On January 31st of each year following construction for a period of five years, the Designated Biologist shall provide a report to the CPM, USFWS, and CDFW that describes the results of monitoring and management of the burrowing owl relocation area. The annual report shall provide an assessment of the status of the relocation area with respect to burrow function and weed infestation, and shall include recommendations for actions the following year for maintaining the burrows as functional burrowing owl nesting sites and minimizing the occurrence of weeds.

MOHAVE GROUND SQUIRREL CLEARANCE SURVEYS

- BIO-19** The project owner shall undertake appropriate measures to manage construction at the plant site and linear facilities in a manner to avoid or minimize impacts to Mohave ground squirrel. These measures include, but are not limited to, the following:

1. Clearance Survey. After the installation of the desert tortoise exclusion fence and prior to any ground disturbance, the Designated Biologist(s) shall examine the area to be disturbed for Mohave ground squirrels and their burrows. The survey shall provide 100 percent coverage of the project limits. Potentially occupied burrows, as determined by a permitted Mohave ground squirrel biologist authorized by the CDFW, shall be fully excavated by hand by the Designated Biologist(s).
2. Translocation Plan. The project owner shall develop and implement a Mohave Ground Squirrel Translocation Plan to address the handling and disposition of any Mohave ground squirrels encountered during the clearance surveys. The Translocation Plan shall be approved by Energy Commission staff in consultation with CDFW. The Translocation Plan shall designate a translocation site as close as possible to the project, and which provides suitable conditions for long-term survival of the relocated Mohave ground squirrel. The plan shall include but not be limited to the following components:
 - a. Identify the appropriate time when translocation may occur
 - b. Methods of capture, handling, and safe transfer
 - c. Methods of health assessment
 - d. Identify the proposed translocation site
 - e. Identify monitoring and post translocation survivorship
 - f. Identify remedial actions
 - g. Reporting procedures to document translocation success
3. Records of Capture. If Mohave ground squirrels are captured via trapping or burrow excavation, the Designated Biologist shall maintain a record of each Mohave ground squirrel handled, including: a) the locations (Global Positioning System [GPS] coordinates and maps) and time of capture and/or observation as well as release; b) sex; c) approximate age (adult/juvenile); d) weight; e) general condition and health noting all visible conditions including gait and behavior, diarrhea, emaciation, salivation, hair loss, ectoparasites, and injuries; and f) ambient temperature when handled and released. Any Mohave

ground squirrels observed within the project area or adjacent habitat shall be reported to the CDFW and CPM by written and electronic correspondence within 24-hours.

Verification: No less than 60 days prior to any site mobilization, the project owner shall provide the CPM and CDFW a draft Mohave Ground Squirrel Translocation Plan. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of a Mohave Ground Squirrel Translocation Plan that has been approved by Energy Commission staff in consultation with CDFW. The CPM will determine the plan's acceptability within 15 days of receipt of the final plan. All modifications to the approved Translocation Plan must be made only after approval of the Energy Commission staff in consultation with CDFW. The project owner shall notify the CPM no fewer than five working days before implementing any CPM-approved modifications to the Translocation Plan.

Within 30 days of completion of Mohave ground squirrel clearance surveys the Designated Biologist shall submit a report to the CPM and CDFW describing how mitigation measures described above have been satisfied. The report shall include the Mohave ground squirrel survey results, capture and release locations of any relocated squirrels, and any other information needed to demonstrate compliance with the measures described above.

Within 30 days after initiation of translocation activities, the Designated Biologist shall provide to the CPM for review and approval a written report identifying which items of the Translocation Plan have been completed, and a summary of all modifications to measures made during implementation.

MOHAVE GROUND SQUIRREL HABITAT COMPENSATORY MITIGATION

BIO-20 The project owner shall provide compensatory mitigation acreage of 216 acres of Mohave ground squirrel habitat lands, adjusted to reflect the final project footprint, as specified in this condition. In addition, the project owner shall provide funding for initial improvement and long-term maintenance, enhancement, and management of the acquired lands for protection and enhancement of Mohave ground squirrel populations, and comply with other related requirements of this condition.

This mitigation ratio is based on a 2:1 ratio for the power plant site and a 3:1 ratio for the transmission line route. Costs of these requirements are estimated to be \$2,860,080.00. See Biological Resources Table 3 for a complete breakdown of costs and acreage. All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions

and may change the funding needed to implement the required mitigation obligation based on changing land costs or management fees. Regardless of the estimates, the project owner is responsible for providing adequate funding to implement the required mitigation.

In lieu of acquiring lands itself, the project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is \$3,016,483.20. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 216 acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in Biological Resources Table 3. Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

COMPENSATORY MITIGATION LAND ACQUISITION

1. Method of Acquisition. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction shall be complete only upon completion of all terms and conditions described in this condition of certification:
 - a. The project owner shall acquire lands and transfer title and/or conservation easement to a state or federal land management agency or to a third-party non-profit land management organization, as approved by the CPM in consultation with CDFW; or
 - b. The project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in Biological Resources Table 3

(adjusted to reflect the final project footprint and any applicable REAT adjustments to costs).

2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition shall:
 - a. Be in the western Mojave Desert;
 - b. Provide moderate to good quality habitat for Mohave ground squirrel with capacity to improve in quality and value for this species;
 - c. Be a contiguous block of land (preferably) or located so they result in a contiguous block of protected habitat;
 - d. Be adjacent to larger blocks of lands that are already protected, or be in a location approved by the CDFW, such that there is connectivity between the acquired lands and the protected lands;
 - e. Be connected to lands for which there is reasonable evidence (for example, recent [<15 years] CNDDDB occurrences on or immediately adjacent to the proposed lands) suggesting current occupation by Mohave ground squirrel, ideally with populations that are stable, recovering, or likely to recover;
 - f. Not have a history of intensive recreational use, grazing, or other disturbance that might make habitat recovery and restoration infeasible;
 - g. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; and
 - h. Not be encumbered by easements or uses that would preclude fencing of the site, or preclude or unacceptably constrain management of the site, for the primary benefit of the species and their habitat for which mitigation lands were secured.
3. 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 Mohave ground squirrel in relation to the

criteria listed above and must be approved by the CPM. The CPM will share the proposal with and consult with CDFW before deciding whether to approve or disapprove the proposed acquisition.

4. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM, in consultation with CDFW, approved the proposed compensation lands:
 - a. Preliminary Report: The project owner, or 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM in consultation with CDFW. For conveyances to the State, approval may also be required from the California Department of General Services, the Fish and Game Commission, 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 in consultation with CDFW. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to another public agency approved by the CPM in consultation with CDFW. 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 approved non-profit organization holds a conservation easement, CDFW shall be named a third party beneficiary. 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, in consultation with CDFW, of the terms of any transfer of fee title or conservation easement to the compensation lands.
 - c. 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, in consultation with CDFW, before it can be used to establish funding levels or management activities for the compensation lands.

5. Compensation Lands Acquisition Costs: The project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include, but shall not be limited to, the items listed below. Management costs including site cleanup measures are described separately in the following section.
 - a. Level 1 Environmental Site Assessment;
 - b. Appraisal;
 - c. Title and document review costs;
 - d. Expenses incurred from other state, federal, or local agency reviews;
 - e. Closing and escrow costs;
 - f. Overhead costs related to providing compensation lands to CDFW or an approved third party;
 - g. Biological survey(s) to determine mitigation value of the land; and
 - h. Agency costs to accept the land (e.g., writing and recording of conservation easements and/or title transfer).

COMPENSATORY MITIGATION LAND IMPROVEMENT

1. Land Improvement Requirements: The project owner shall fund activities that the CPM, in consultation with the CDFW, 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 surveys of boundaries and property lines, installation of signs, trash removal and other site cleanup measures, construction and repair of fences, invasive plant removal, removal of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at \$250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to Gov. Code § 65965), if it meets the approval of the CPM in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for desert tortoise. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.
2. Long-term Management Plan: The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM, in consultation with CDFW.
3. Long-Term Maintenance and Management Funding: The project owner shall provide money to establish an account with a non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the project owner shall provide initial payment of \$313,200.00 calculated at \$1,450 an acre for each compensation acre, as shown in Biological Resources Table 3 (above) into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made

based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis once the analysis is completed and approved. If the approved analysis indicates less than \$1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with the project owner and CDFW before deciding whether to approve an entity to hold the project's long-term maintenance and management funds on any lands. The CPM, in consultation with the project owner and CDFW, may designate another state agency or non-profit organization to hold the 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, leave the money in the REAT Account, or designate another entity such as NFWF to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

- i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.
- ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM, in consultation with CDFW, or the approved third-party, long-term maintenance and management fee manager to ensure the continued viability of the

species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.

- iii. Pooling Funds. A CPM-approved, non-profit organization, qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.
- iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFW or an approved third party for reasonable expenses incurred during title, easement, and documentation review, expenses incurred from other State or State-approved federal agency reviews, and overhead related to providing compensation lands.

COMPENSATORY MITIGATION LAND SECURITY

- 1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of desert tortoise compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, of the form of the Security.

The security amount shall be based on the estimates provided in Biological Resources Table 3. This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The project owner shall provide verification that financial assurances have been established to the CPM with copies of the document(s) to CDFW, 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 ground-disturbing activities described in section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of \$3,016,483.20 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition (below). The Security is calculated in part from the items that follow but adjusted as specified below (consult Biological Resources Table 3 for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition:

- i. Land acquisition costs for compensation land, calculated at \$10,000/acre;
- ii. Site assessments, appraisals, biological surveys, transaction closing and escrow costs, calculated as \$18,000 total per parcel (presuming 60 acres per parcel);
- iii. Initial site clean-up, restoration, or enhancement, calculated at \$250/acre;
- iv. Third-party and agency administrative transaction costs and overhead, calculated as percentages of land cost;
- v. Long-term management and maintenance fund, calculated at \$1,450 per acre; and
- vi. NFWF fees to establish a project-specific account, manage the sub-account for acquisition and initial site work, and manage the sub-account for long term management and maintenance.

2. The project owner may elect to comply with some or all of the requirements in this condition by providing funds to implement the requirements into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs of implementing the requirement (as set forth in the Security section of this condition, paragraph 3 above). If the actual cost of the acquisition, initial protection and habitat improvements, long-term funding or other cost is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, the long-term funding requirements as established in an approved PAR or PAR-like analysis, or the other actual costs that are estimated in the table. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall be returned to the project owner.
3. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF such as a non-governmental organization supportive of desert habitat conservation by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM, in consultation with CDFW, prior to land acquisition, enhancement, or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the start of project related ground disturbance.
4. The project owner may request the CPM to provide it with all available information about any funds held by the Energy Commission, CDFW, or NFWF as project security, or funds held in a NFWF sub-account for this project or other project-specific account held by a third party. The CPM shall also fully cooperate with any independent audit that the project owner may choose to perform on any of these funds.

Verification: The project owner shall provide the CPM with written notice of intent to start ground disturbance at least 30 days prior to the start of ground-disturbing activities on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the project owner shall provide verification to the CPM and CDFW that an approved Security has been established in

accordance with this condition of certification no later than 30 days prior to beginning project ground-disturbing activities. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account, or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, of the form of the Security. The project owner, or an approved third party, shall complete and provide written verification to the CPM and CDFW of the compensation lands acquisition and transfer within 18 months of the start of project ground-disturbing activities.

No later than 12 months after the start of any phase of ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcels intended for purchase, and shall obtain approval from the CPM, in consultation with CDFW, prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM and CDFW of such completion no later than 18 months after the start of project related ground-disturbance activities. If NFWF or another approved third party is being used for all or part of the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFW to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed and written verification provided to the CPM no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM and CDFW with a management plan for the compensation lands associated with any phase of construction within 180 days of the land or easement purchase, as determined by the date on the title. The CPM, in consultation with CDFW, shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM and CDFW an analysis based on aerial photography with the final accounting of the amount of habitat disturbed during project construction. If this analysis shows that more lands were disturbed than were anticipated in this condition, the project owner shall provide the Energy Commission with additional compensation lands and funding commensurate with the added impacts and applicable mitigation ratios set forth in this condition. A final analysis of all project related ground disturbance may not result in a reduction of compensation requirements if the deadlines established under this condition for transfer of compensation lands and funding have passed prior to completion of the analysis.

AMERICAN BADGER AND DESERT KIT FOX IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-21 Prior to ground disturbance the owner shall conduct pre-construction surveys for American badgers and desert kit fox. These surveys may be conducted concurrent with the desert tortoise surveys. Surveys shall be conducted as described below:

- 1 Biological Monitors shall perform pre-construction surveys for badger and kit fox dens in the project area, including areas within 250 feet of all project facilities, utility corridors, and access roads. If dens are detected, each den shall be classified as inactive, potentially active, or definitely active;
- 2 Inactive dens that would be directly impacted by construction activities shall be excavated by hand and backfilled to prevent reuse by badgers or kit fox. Potentially active dens that would be directly impacted by construction activities shall be monitored by the Biological Monitor for three consecutive nights using a tracking medium (such as diatomaceous earth or fire clay) and/or infrared camera stations at the entrance. If no tracks are observed in the tracking medium or no photos of the target species are captured after three nights, the den shall be excavated and backfilled by hand;
- 3 If present, occupied badger dens shall be flagged and ground-disturbing activities avoided within 50 feet of the occupied den.

Maternity dens shall be avoided during the pup-rearing season (February 15th through July 1st) and a minimum 200-foot buffer established. Buffers may be modified with the concurrence of CDFW and CPM. Maternity dens shall be flagged for avoidance, identified on construction maps, and a biological monitor shall be present during construction; and

- 4 If avoidance of a non-maternity den is not feasible, badgers shall be relocated by slowly excavating the burrow (either by hand or mechanized equipment under the direct supervision of the biologist, removing no more than 4 inches at a time) before or after the rearing season (February 15th through July 1st). Any relocation of badgers shall occur only after consultation with the CDFW and CPM. A written report documenting the badger removal shall be provided to the CPM within 30 days of relocation.

Verification: The project owner shall submit a report to the CPM and CDFW within 30 days of completion of badger and kit fox surveys. The report shall describe survey methods, results, mitigation measures implemented, and the results of the mitigation.

BAT AVOIDANCE AND MINIMIZATION MEASURES

BIO-22 Prior to ground disturbance the project owner shall conduct a survey for roosting bats within 200 feet of project activities within 15 days prior to any grading of rocky outcrops or removal of trees (particularly trees 12 inches in diameter or greater at 4.5 feet above grade with loose bark or other cavities).

The project owner shall also conduct surveys for roosting bats during the maternity season (March 1st to July 31st) within 300 feet of project activities. Trees and rocky outcrops shall be surveyed by a qualified bat biologist. Surveys shall include a minimum of one day and one evening. The biologist shall be approved by the Designated Biologist. If active maternity roosts or hibernacula are found, the rock outcrop or tree occupied by the roost shall be avoided (i.e., not removed) by the project, if feasible. If avoidance of the maternity roost is not feasible, the bat biologist shall survey (through the use of radio telemetry or other CDFW/CPM-approved methods) for nearby alternative maternity colony sites. If the bat biologist determines, in consultation with and with the approval of the CDFW and CPM that there are alternative roost sites used by the maternity colony and young are not present, then no further action is required. However, if there are no alternative roost sites used by the maternity colony, provision of substitute roosting bat habitat is required. If

active maternity roosts are absent, but a hibernaculum (i.e., a non-maternity roost) is present, then exclusion of bats prior to demolition of roosts is required.

1. Provision of substitute roosting bat habitat. If a maternity roost will be impacted by the project, and no alternative maternity roosts are in use near the site, substitute roosting habitat for the maternity colony shall be provided on, or in close proximity to, the project site no less than three months prior to the eviction of the colony. Alternative roost sites will be constructed in accordance with the specific bats' requirements in coordination with CDFW and the CPM. Alternative roost sites must be of comparable size and proximal in location to the impacted colony. The CDFW shall also be notified of any hibernacula or active nurseries within the construction zone.
2. Exclude bats prior to demolition of roosts. If non-breeding bat hibernacula are found in trees scheduled to be removed or in crevices in rock outcrops within the grading footprint, the individuals shall be safely evicted under the direction of the qualified bat biologist by opening the roosting area to allow airflow through the cavity or other means determined appropriate by the bat biologist (e.g., installation of one-way doors). In situations requiring one-way doors, a minimum of one week shall pass after doors are installed and temperatures should be sufficiently warm for bats to exit the roost. This action should allow all bats to leave during the course of one week. Roosts that need to be removed in situations where the use of one-way doors is not necessary in the judgment of the qualified bat biologist, roosts shall first be disturbed by various means at the direction of the bat biologist at dusk to allow bats to escape during the darker hours, and the roost tree shall be removed or the grading shall occur the next day (i.e., there shall be no less or more than one night between initial disturbance and the grading or tree removal).

If an active maternity roost is located in an area to be impacted by the project and alternative roosting habitat is available, the demolition of the roost site must commence before maternity colonies form (i.e., prior to March 1st) or after young are flying (i.e., after July 31st) using the exclusion techniques described above.

Verification: The project owner shall submit a report to the CPM and CDFW within 30 days of completion of roosting bat surveys and any subsequent mitigation. The

report shall describe survey methods, results, mitigation measures implemented, and the results of the mitigation.

STREAMBED IMPACT MINIMIZATION AND COMPENSATION MEASURES

BIO-23 The project owner shall implement Best Management Practices and other measures described below to protect jurisdictional waters of the state occurring along the linear alignments. The project owner shall implement the following measures to minimize impacts to waters of the state:

1. Best Management Practices: The applicant shall comply with the following conditions:
 - a. Prior to any activities that cross over or have the potential to impact any jurisdictional drainage, the owner shall provide a detailed map to the CDFW and CPM in a GIS format that identifies all potential crossings of jurisdictional habitats including bridges and culverts. The maps shall identify the type of crossing proposed by the owner such as bridges, culverts, or other mechanisms and the best management practices that would be employed;
 - b. Precautions to minimize turbidity/siltation shall be taken into account during project planning and shall be installed prior to construction. Precautions may also include placement of silt fencing, weed-free straw bales or sand bags, so that silt or other deleterious materials are not allowed to pass to downstream reaches. The method used to prevent siltation shall be monitored and cleaned/repaired weekly;
 - c. The project owner shall not operate vehicles or equipment in ponded or flowing water except as described in this condition. Diversion of any stream is not authorized. Bridging of Little Rock Wash is not authorized in this condition;
 - d. Dewatering is not authorized in this condition;
 - e. At the completion of construction all temporary bridges, culverts, or other structures shall be removed unless authorized by the CDFW and CPM;
 - f. When any activity requires moving of equipment across a flowing stream, such operations shall be conducted without substantially

increasing stream turbidity. The project owner shall bridge by the use of railroad flat cars or other bridging material all ponded or flowing streams if vehicles where high flow levels occur;

- g. Where drainages support sheet flow in direct response to rainfall for periods of less than 48 hours, construction of bridges is not required. Vehicle use in these areas shall not result in silt/mud/turbid water reaching downstream areas;
- h. Vehicles driven across ephemeral drainages when water is present shall be completely clean of petroleum residue and water levels shall be below the vehicles' axels;
- i. Any equipment or vehicles driven and/or operated within or adjacent to the stream/lake shall be checked and maintained daily, to prevent leaks of materials that if introduced to water could be deleterious to aquatic life;
- j. 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 biological monitor shall be present during the installation of all bridges, culverts, and BMPs;
- k. Installation of bridges or culverts shall be done in a manner that shall prevent pollution and/or siltation and which shall provide flows to downstream reaches. Flows to downstream reaches shall be provided during all times.
- l. The project owner shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter a lake or flowing stream or be placed in locations that may be subjected to high storm flows;
- m. If turbidity/siltation levels resulting from project-related activities constitute a threat to aquatic life, activities associated with the turbidity/siltation shall be halted until effective CPM-approved control devices are installed, or abatement procedures are initiated;
- n. The project owner shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these

laws, and it shall be the responsibility of the project owner to ensure compliance;

- o. If a stream's low-flow channel bed or banks, or lake bed or banks have been altered, these shall be returned as nearly as possible to their original configuration and width, without creating future erosion problems. The gradient of the streambed shall be returned to pre-project grade unless such operation is part of a restoration project, in which case the change in grade must be approved by the department prior to project commencement;
- p. No debris, soil, silt, sand, bark, slash, sawdust, rubbish, construction waste, cement or concrete or washings thereof, asphalt, paint, oil or other petroleum products, or any other substances which could be hazardous to aquatic life, or other organic or earthen material from any logging, construction, or other associated project-related activity shall be allowed to contaminate the soil and/or enter into or be placed where it may be washed by rainfall or runoff into waters of the State. Any of these materials, placed within, or placed where they may enter, a stream or lake by the owner or any party working under contract or with the permission of the owner, shall be removed immediately;
- q. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any stream or lake;
- r. Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to the stream or lake shall be positioned over drip pans. Stationary heavy equipment shall have suitable containment to handle a catastrophic spill or leak. Clean up equipment such as an extra boom, absorbent pads, and skimmers shall be on site prior to the start of dredging;
- s. No equipment maintenance shall be done within or near any stream channel where petroleum products or other pollutants from the equipment may enter these areas under any flow; and
- t. The cleanup of all spills shall begin immediately. The CDFW and CPM shall be notified immediately by the owner of any spills and shall be consulted regarding clean-up procedures.

2. Non-native Vegetation Removal. The owner shall remove any non-native vegetation (tree tobacco, castor bean, etc.) from any drainage that requires the placement of a bridge, culvert, or other structure. Removal shall be done at least twice annually (spring and summer) during implementation of the PEP project. The removal of riparian vegetation is not authorized under this condition. Should the removal of riparian vegetation become necessary, temporary impacts will be mitigated at a ratio of 2:1 and permanent impacts will be mitigated at a ratio of 5:1;

3. Reporting of Special-Status Species: If any special-status species are observed on or in proximity to the project site, or during project surveys, the project owner shall submit California Natural Diversity Data Base (CNDDB) forms and maps to the CNDDB within five working days of the sightings and provide the regional CDFW office with copies of the CNDDB forms and survey maps. The CNDDB form is available online at:

<https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=25739&inline>.

This information shall be mailed within five days to: California Department of Fish and Wildlife, Natural Diversity Data Base, 1416 9th Street, Suite 1266, Sacramento CA 95814, (916)322-2493. A copy of this information shall also be mailed within five days to CDFW and the CPM;

4. Notification: The project owner shall notify the CPM and CDFW, in writing, at least five days prior to initiation of project activities in jurisdictional areas and at least five days prior to completion of project activities in jurisdictional areas. The project owner shall notify the CPM and CDFW of any change of conditions to the project, the jurisdictional impacts, or the mitigation efforts, if the conditions at the site of the proposed project change in a manner which changes risk to biological resources that may be substantially adversely affected by the proposed project. The notifying report shall be provided to the CPM and CDFW no later than seven days after the change of conditions is identified. As used here, change of condition refers to the process, procedures, and methods of operation of a project, the biological and physical characteristics of a project area, or the laws or regulations pertinent to the project as described below. A copy of the notifying change of conditions report shall be included in the annual reports:

- a. Biological Conditions: A change in biological conditions includes, but is not limited to, the following: 1) the presence of biological resources within or adjacent to the project area, whether native or non-native, not previously known to occur in the area; or 2) the presence of biological resources within or adjacent to the project area, whether native or non-native, the status of which has changed to endangered, rare, or threatened, as defined in section California Code of Regulations, title 14, section 15380;
 - b. Physical Conditions: A change in physical conditions includes, but is not limited to, the following: 1) a change in the morphology of a river, stream, or lake, such as the lowering of a bed or scouring of a bank, or changes in stream form and configuration caused by storm events; 2) the movement of a river or stream channel to a different location; 3) a reduction of or other change in vegetation on the bed, channel, or bank of a drainage, or 4) changes to the hydrologic regime such as fluctuations in the timing or volume of water flows in a river or stream; or
 - c. Legal Conditions: a change in legal conditions includes, but is not limited to, a change in Regulations, Statutory Law, a Judicial or Court decision, or the listing of a species, the status of which has changed to endangered, rare, or threatened, as defined in section 15380 of Title 14 of the California Code of Regulations.
5. Code of Regulations: The project owner shall provide a copy of the Energy Commission Decision to all contractors, subcontractors, and the applicant's project supervisors. Copies shall be readily available at work sites at all times during periods of active work and must be presented to any CDFW personnel or personnel from another agency upon demand. The CPM reserves the right to issue a stop work order or allow CDFW to issue a stop work order after giving notice to the project owner and the CPM if the CPM, in consultation with CDFW, determines that the project owner has breached any of the terms or conditions or for other reasons including, but not limited to, the following:
- a. The information provided by the applicant regarding streambed conditions is incomplete or inaccurate;
 - b. New information becomes available that was not known to it in preparing the terms and conditions;

- c. The project or project activities as described in the Final Staff Assessment have changed; or
- d. The conditions affecting biological resources changed or the CPM, in consultation with CDFW, determines that project activities will result in a substantial adverse effect on the environment.

Verification: No fewer than 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall implement the mitigation measures described above. No fewer than 30 days prior to the start of work potentially affecting waters of the state, the project owner shall provide written verification (i.e., through incorporation into the BRMIMP) to the CPM that the above best management practices will be implemented and provide a discussion of work in waters of the state in Compliance Reports for the duration of the project. Compliance Reports shall be submitted every six months.

WILLOW FLYCATCHER MONITORING

BIO-24 The project owner shall prepare and implement a Willow Flycatcher Monitoring Plan to monitor willow flycatcher collisions with project transmission lines. Transmission line project-related Willow Flycatcher deaths or injuries shall be reported to the CPM, CDFW, and USFWS.

The CPM, in consultation with CDFW and USFWS, shall determine if the transmission line project-related willow flycatcher deaths or injuries are in excess of the take estimate of willow flycatcher identified in the Incidental Take Permit or Consistency Determination issued by CDFW, and if so, whether this difference warrants imposing additional mitigation pursuant to Condition of Certification **BIO-26**.

The plan shall be approved by the CPM in consultation with CDFW and USFWS, and shall be incorporated into the project's BRMIMP and implemented. The Willow Flycatcher Monitoring Plan shall be based upon recent avian monitoring studies conducted at energy facilities or other applicable literature, and shall include detailed specifications on data and carcass collection protocol and a rationale justifying the proposed schedule of carcass searches. The plan shall also include seasonal trials to assess bias from carcass removal by scavengers as well as searcher bias and proposed disposition of dead or injured birds.

Verification: No more than 60 days prior to ground disturbance the project owner shall submit to the CPM, USFWS, and CDFW a Willow Flycatcher Monitoring Plan. Modifications to the plan shall be made only after approval from the CPM. For one year following the beginning of power plant operation, the Designated Biologist shall submit

quarterly reports to the CPM, CDFW, and USFWS describing the methods, dates, durations, and results of willow flycatcher monitoring. The quarterly reports shall provide a detailed description of any transmission line project-related willow flycatcher deaths or injuries detected during the monitoring study, or at any other time. Following the completion of the fourth quarter of monitoring, the Designated Biologist shall prepare an Annual Report that summarizes the year's data, analyzes any transmission line project-related willow flycatcher fatalities or injuries detected, and provides recommendations for future monitoring. The Annual Report shall be provided to the CPM, CDFW, and USFWS. Quarterly reporting shall continue until the CPM, in consultation with CDFW and USFWS, determines whether more years of monitoring are needed.

CLOSURE PLAN MEASURES

- BIO-25** The project owner shall implement and incorporate into the facility closure plan measures to address the local biological resources related to facility closure. A funding mechanism shall be developed in consultation with the Energy Commission staff to ensure sufficient funds are available for revegetation, reclamation, and decommissioning if the project site will not be re-powered or developed. The facility closure plan shall address biological resources-related mitigation measures. In addition to these measures, the plan shall include the following:
1. Removal of transmission conductors when they are no longer used and useful;
 2. Removal of all above-ground and subsurface power plant site facilities and related facilities;
 3. Methods for restoring wildlife habitat and promoting the re-establishment of native plant and wildlife species;
 4. Revegetation of the project site and other disturbed areas utilizing appropriate methods for establishing native vegetation if the site will not be repowered or developed; and
 5. A cost estimate to complete closure-related activities.

In addition, the project owner shall secure funding to ensure implementation of the plan and provide to the CPM written evidence of the dedicated funding mechanism(s).

Verification: At least 12 months prior to commencement of planned closure activities, the project owner shall address all biological resources-related issues associated with facility closure and provide final measures in a Biological Resources

Element. The draft planned permanent or unplanned closure measures shall be submitted to the CPM for comment by staff, CDFW, and USFWS. After revision, final measures shall comprise the Biological Resources Element, which shall include the items listed above as well as written evidence of the dedicated funding mechanism(s) for these measures. The final Biological Resources Element shall become part of the facility closure plan, which is submitted to the CPM within 90 days of the permanent closure or another period of time agreed to by the CPM.

In the event of an unplanned permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail within 24 hours, and shall take all necessary steps to implement the on-site contingency plan (see the conditions of certification in the Compliance section of this Decision).

Upon facility closure, the project owner shall implement measures in the Biological Resources Element and provide written status updates on all closure activities to the CPM at a frequency determined by the CPM.

WILLOW FLYCATCHER MITIGATION

BIO-26 Prior to construction of the transmission line, the project owner shall provide to the CPM a copy of the Incidental Take Permit (ITP) per section 2081 (b) of the California Endangered Species Act or Consistency Determination (CD) per section 2080.1 of the California Endangered Species Act issued by the California Department of Fish and Wildlife (CDFW). The project owner shall secure compensatory lands to mitigate for the potential take of willow flycatcher and Southwestern willow flycatcher over the life of the project. The estimated take of the species will be determined through the ITP or CD issued by CDFW. Based on the mitigation ratios adopted for the Desert Renewable Energy Conservation Plan (Draft DRECP and EIS/EIR, Appendix H, Table H-7), the take of each bird death determined in the ITP/CD will require five acres of compensatory nesting habitat. All compensatory mitigation land needs to be within suitable breeding habitat within the California range of the willow flycatcher. The terms and conditions contained in the ITP or CD shall be incorporated into the project's Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and implemented by the project owner.

Verification: No less than 30 days prior to initial ground disturbance for the construction of the transmission line, the project owner shall provide to the CPM a copy of the ITP or CD issued by CDFW. Concurrently, the project owner shall provide to the CPM for approval a copy of the revised BRMIMP that shall include the terms and

conditions contained in the ITP or CD that must be implemented by the project owner. The CPM must approve the revised BRMIMP before construction activities can begin.

REVISED CONDITIONS FOR PARTIAL UNDERGROUND TRANSMISSION LINE ALTERNATIVE ROUTE 4

If the project owner opts to construct and operate Transmission Line Alternative Route 4, the following Revised Conditions of Certification **BIO-14**, **BIO-17**, and **BIO-20** reflect the reduced acreages subject to project impacts. The following **Biological Resources Tables 4 and 5** shall apply to these Revised Conditions:

Biological Resources Table 4
Swainson's Hawk Compensation Cost Estimate¹

	Task	Cost per area	Cost
1.	Land Acquisition 70 acres at 2:1 ratio 140 acres	\$10,000 per acre ²	\$1,400,000.00
2.	Level 1 Environmental Site Assessment	\$3000 per parcel ³	\$6,990.00
3.	Appraisal	\$5000 per parcel	\$11,650.00
4.	Initial site work - clean-up, enhancement, restoration	\$250 per acre ⁴	\$35,000.00
5.	Closing and Escrow Costs – 1 transaction includes landowner to 3 rd party and 3 rd party to agency	\$5000 per transaction	\$15,000.00
6.	Biological survey for determining mitigation value of land (habitat based with species specific augmentation)	\$5000 per parcel	\$11,650.00
7.	3 rd party administrative costs - includes staff time to work with agencies and landowners; develop management plan; oversee land transaction; organizational reporting and due diligence; review of acquisition documents; assembling acres to acquire....	10% of land acquisition cost (#1)	\$140,000.00
8.	Agency costs to review and determine accepting land donation - includes 2 physical inspections; review and approval of the Level 1 ESA assessment; review of all title documents; drafting deed and deed restrictions; issue escrow instructions; mapping the parcels....	15% of land acquisition costs (#1) × 1.17 (17% of the 15% for overhead)	\$210,000.00
SUBTOTAL - Acquisition & Initial Site Work			\$1,830,290.00
9.	Long-term Management and Maintenance (LTMM) Fund - includes land management; enforcement and defense of easement or title [short and long term]; monitoring....	\$1450 per acre ⁵	\$203,000.00
SUBTOTAL - Acquisition, Initial Site Work, & LTMM			\$2,033,290.00
NFWF Fees			
10.	Establish the project specific account	n/a (presumes establishment of Mohave ground squirrel account for project)	

	Task	Cost per area	Cost
11.	NFWF management fee for acquisition & initial site work	3% of SUBTOTAL	\$60,998.70
12.	NFWF Management fee for LTMM Fund	1% of LTMM Fund	\$2,030.00
13.	Call for and Process Pre-Proposal Modified RFP	n/a (presumes establishment of Mohave ground squirrel account for project)	
<i>TOTAL for deposit in REAT-NFWF Project Specific Account</i>			\$2,096,318.70

1. Estimates prepared in consultation with CDFW. All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.
2. Based on mean of data provided by CDFW for land acquisition in Los Angeles County. If the agencies, developer, or 3rd party has better, credible information on land costs in the specific area where project-specific mitigation lands are likely to be purchased, that data overrides this general estimate. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.
3. For the purposes of determining costs, an average parcel is 60 acres (based on input from DFG).
4. Based on information from CDFW.
5. Estimate for purposes of calculating general costs. The actual long term management and maintenance costs will be determined using a Property Assessment Report (PAR) tailored to the specific acquisition.

Biological Resources Table 5

Mohave Ground Squirrel Compensation Cost Estimate¹

	Task	Cost per area	Cost
1.	Land Acquisition (total of 140 acres) 2:1 ratio on power plant site Compensatory mitigation is not required for the transmission line right-of-way	\$10,000 per acre ²	\$1,400,000.00
2.	Level 1 Environmental Site Assessment	\$3000 per parcel ³	\$6,990.00
3.	Appraisal	\$5000 per parcel	\$11,650.00
4.	Initial site work - clean-up, enhancement , restoration	\$250 per acre ⁴	\$35,000.00
5.	Closing and Escrow Costs – 1 transaction includes landowner to 3 rd party and 3 rd party to agency	\$5000 per transaction	\$15,000.00
6.	Biological survey for determining mitigation value of land (habitat based with species specific	\$5000 per parcel	\$11,650.00

	augmentation)		
7.	3 rd party administrative costs - includes staff time to work with agencies and landowners; develop management plan; oversee land transaction; organizational reporting and due diligence; review of acquisition documents; assembling acres to acquire....	10% of land acquisition cost (#1)	\$140,000.00
8.	Agency costs to review and determine accepting land donation - includes 2 physical inspections; review and approval of the Level 1 ESA assessment; review of all title documents; drafting deed and deed restrictions; issue escrow instructions; mapping the parcels....	15% of land acquisition costs (#1) × 1.17 (17% of the 15% for overhead)	\$210,000.00
	<i>SUBTOTAL - Acquisition & Initial Site Work</i>		\$1,830,290.00
9.	Long-term Management and Maintenance (LTMM) Fund - includes land management; enforcement and defense of easement or title [short and long term]; monitoring....	\$1450 per acre ⁵	\$203,000.00
	<i>SUBTOTAL - Acquisition, Initial Site Work, & LTMM</i>		\$2,033,290.00
	<i>NFWF Fees</i>		
10.	Establish the project specific account	\$12,000	\$12,000.00
11.	NFWF management fee for acquisition & initial site work	3% of SUBTOTAL	\$60,998.70
12.	NFWF Management fee for LTMM Fund	1% of LTMM Fund	\$2,030.00
13.	Call for and Process Pre-Proposal Modified RFP	\$30,000	\$30,000.00
	<i>TOTAL for deposit in REAT-NFWF Project Specific Account</i>		\$2,138,318.70

1. Estimates prepared in consultation with CDFW. All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

2. Based on mean of data provided by CDFW for land acquisition in Los Angeles County. If the agencies, developer, or 3rd party has better, credible information on land costs in the specific area where project-specific mitigation lands are likely to be purchased, that data overrides this general estimate. Note: regardless of the estimates, the developer is responsible for providing adequate funding to implement the required mitigation.

3. For the purposes of determining costs, an average parcel is 60 acres (based on input from CDFW).
4. Based on information from CDFW.
5. Estimate for purposes of calculating general costs. The actual long term management and maintenance costs will be determined using a Property Assessment Report (PAR) tailored to the specific acquisition

RAVEN FEE, MONITORING, MANAGEMENT, AND CONTROL PLAN

ALTERNATIVE BIO-14 The project owner shall design and implement a Raven Monitoring, Management, and Control Plan (Raven Plan) that is consistent with the most current USFWS-approved raven management guidelines and that meets the approval of the USFWS, CDFW, and the CPM. Any subsequent modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFW. The Raven Plan shall include, but not be limited to, a program to monitor increased raven presence in the project vicinity and to implement raven control measures as needed based on that monitoring. The purpose of the plan is to avoid any project-related increases in raven numbers during construction, operation, and decommissioning. The threshold for implementation of raven control measures shall be any increases in raven numbers from baseline conditions, as detected by monitoring to be proposed in the Raven Plan. Regardless of raven monitoring results, the project owner shall be responsible for all other aspects of the Raven Plan, including avoidance and minimization of project-related trash, water sources, or perch/roost sites that could contribute to increased raven numbers. In addition, to off-set the cumulative contributions of the project to desert tortoise from increased raven numbers, the project owner shall also contribute to the USFWS Regional Raven Management Program. The project owner shall do all of the following:

1. Prepare and Implement a Raven Management Plan that includes the following:
 - a. Identify conditions associated with the project that might provide raven subsidies or attractants;
 - b. Describe management practices to avoid or minimize conditions that might increase raven numbers and predatory activities;
 - c. Describe control practices for ravens;

- d. Address monitoring and nest removal during construction and for the life of the project; and
 - e. Discuss reporting requirements.
2. Contribute to the REAT Regional Raven Management Program. The project owner shall submit payment to the project sub-account of the REAT Account held by the National Fish and Wildlife Foundation (NFWF) to support the REAT Regional Raven Management Program. The amount shall be a one-time payment of \$105 per acre (125.5 acres) of permanent disturbance fee or \$13,177.00.

Verification: No later than 30 days prior to any construction-related ground disturbance activities, the project owner shall provide the CPM, USFWS, and CDFW with the final version of a Raven Plan. All modifications to the approved Raven Plan shall be made only with approval of the CPM in consultation with USFWS and CDFW. No later than 60 days prior to the start of construction, the project owner shall provide written verification to the CPM that NFWF has received and accepted payment into the project's sub-account of the REAT Account to support the USFWS Regional Raven Management Program. On January 31st of each year following construction, the Designated Biologist shall provide a report to the CPM that includes: a summary of the results of raven management and control activities for the year; a discussion of whether raven control and management goals for the year were met; and recommendations for raven management activities for the upcoming year.

SWAINSON'S HAWK HABITAT COMPENSATORY MITIGATION

ALTERNATIVE BIO-17 The project owner shall either assume that Swainson's hawk nest within five miles of the project site and provide compensatory mitigation as described below or complete CFDG protocol surveys within five miles of project facilities that result in permanent impacts to Swainson's hawk foraging habitat. If surveys are completed they shall include the following components:

The survey periods shall follow a specified schedule: Period I occurs from January 1st to March 31st, Period II occurs from April 1st to April 30th, Period III occurs from May 1st to May 30th, and Period IV occurs from June 1st to July 15th. No fewer than three surveys per period in at least two survey periods shall be completed immediately prior to the start of project construction. All nest sites shall be recorded and mapped using GIS and provided to the CPM and CDFW. Compensatory mitigation at a 2:1 ratio shall be required for permanent impacts. If active Swainson's hawk nests (i.e., any nest active within five years) are not detected within

five miles of the project site or linear facilities, the project owner will not be required to provide compensatory mitigation.

If the project owner assumes presence, the project owner shall provide compensatory mitigation acreage for 140 acres of Swainson's hawk habitat lands, adjusted to reflect the final project footprint, as specified in this condition. In addition, the project owner shall provide funding for initial improvement and long-term maintenance, enhancement, and management of the acquired lands for protection and enhancement Swainson's hawk populations, and comply with other related requirements of this condition.

- a. Loss of foraging habitat for Swainson's hawks shall be mitigated by providing Habitat Management (HM) lands at a ratio of 2:1 for any foraging habitat impacted within a five-mile radius of active Swainson's hawk nest(s). (CDFW considers a nest active if it was used one or more times within the last five years). Foraging habitat includes, but is not limited to: alfalfa, fallow fields, beet, tomato, onions, and other low-growing row or field crops, dry-land and irrigated pasture, and cereal grain crops (including corn after harvest). Joshua tree woodland shall be considered foraging habitat in the Antelope Valley.
- b. Lands which are currently in urban use or lands that have no existing or potential value for foraging Swainson's hawks will not require mitigation. The project owner will provide the CPM and CDFW a report of potential foraging lands impacted by the proposed project as determined by consultation with the CDFW and recent site-specific surveys conducted by a CDFW-qualified raptor biologist.

This acreage was calculated as follows: a ratio of 2:1 for the PEP power plant site (140 acres). Costs of these requirements are estimated to be \$1,327,210.00 (see Biological Resources Table 4 for a complete breakdown of costs and acreage). All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation based on changing land costs or management fees. Regardless of the estimates, the project owner is responsible for providing adequate funding to implement the required mitigation.

These impact acreages shall be adjusted to reflect the final project footprint. For purposes of this condition, the project footprint means all lands disturbed in the construction and operation of the Palmdale Energy Project.

This compensation acreage may be included (“nested”) within the acreage acquired and managed as Mohave ground squirrel habitat compensation (Condition of Certification **BIO-20**) only if:

- a. There is a minimum of 140 acres of habitat including a minimum of 76 acres of Joshua tree woodland and 64 acres of Mojave creosote bush scrub.
- b. The Mohave ground squirrel habitat compensation lands are acquired and dedicated as permanent conservation lands within 18 months of the start of project construction.

If these two criteria are not met, then the project owner shall provide the required number of acres of Swainson’s hawk habitat compensation lands, adjusted to reflect the final project footprint and additional delineation of suitable habitat, independent of any compensation land required under other conditions of certification, and shall also provide funding for the initial improvement and long-term maintenance and management of the acquired lands, and shall comply with other related requirements of this condition.

The project owner shall provide financial assurances as described below in the amount of \$2,033,290.00. In lieu of acquiring lands itself, the project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF), as described below. If the project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is \$2,096,318.70. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 140-acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in Biological Resources Table 4. Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

COMPENSATORY MITIGATION LAND ACQUISITION

1. **Method of Acquisition**. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction shall be complete only upon completion of all terms and conditions described in this condition of certification:
 - a. The project owner shall acquire lands and transfer title and/or conservation easement to a state or federal land management agency or to a third-party non-profit land management organization, as approved by the CPM in consultation with CDFW; or
 - b. The project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in Biological Resources Table 4 (adjusted to reflect final project footprint and any applicable REAT adjustments to costs).
2. **Selection Criteria for Compensation Lands**. The compensation lands selected for acquisition to meet Energy Commission and CESA requirements shall be equal to or better than the quality and function of the habitat impacted and:
 - a. Be within the Western Mojave Desert;
 - b. Provide moderate to good quality foraging habitat for Swainson's hawk with capacity to improve in quality and value for this species;
 - c. Be near lands for which there is reasonable evidence (for example, recent (<15 years) CNDDDB occurrences on or immediately adjacent to the proposed lands) suggesting current occupation by Swainson's hawk ideally with populations that are stable, recovering, or likely to recover;
 - d. Be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
 - e. Not have a history of intensive recreational use or other disturbance that might cause future erosional damage or other habitat damage, and make habitat recovery and restoration infeasible;

- f. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration that might jeopardize habitat recovery and restoration;
 - g. Not contain hazardous wastes that cannot be removed to the extent that the site could not provide suitable habitat; and
 - h. Have water and mineral rights included as part of the acquisition, unless the CPM, in consultation with CDFW, agrees in writing to the acceptability of land without these rights.
3. 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 Swainson's hawk in relation to the criteria listed above and must be approved by the CPM. The CPM will share the proposal with and consult with CDFW before deciding whether to approve or disapprove the proposed acquisition.
4. Compensation Lands Acquisition Conditions: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM, in consultation with CDFW approved the proposed compensation lands:
- a. Preliminary Report: The project owner, or 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM in consultation with CDFW. For conveyances to the State, approval may also be required from the California Department of General Services, the California Fish and Game Commission, 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 in consultation with CDFW. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation

lands (pursuant to California Government Code section 65965), or to other public agency approved by the CPM in consultation with CDFW. 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 approved non-profit organization holds a conservation easement, CDFW shall be named a third party beneficiary. 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, in consultation with CDFW, of the terms of any transfer of fee title or conservation easement to the compensation lands.

- c. 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, in consultation with CDFW, before it can be used to establish funding levels or management activities for the compensation lands.
5. Compensation Lands Acquisition Costs: The project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include, but shall not be limited to, the items listed below. Management costs including site cleanup measures are described separately in the following sections:
 - a. Level 1 Environmental Site Assessment;
 - b. Appraisal;
 - c. Title and document review costs;
 - d. Expenses incurred from other state, federal, or local agency reviews;
 - e. Closing and escrow costs;

- f. Overhead costs related to providing compensation lands to CDFW or an approved third party;
- g. Biological survey(s) to determine mitigation value of the land; and
- h. Agency costs to accept the land (e.g., writing and recording of conservation easements and title transfer).

COMPENSATORY MITIGATION LAND IMPROVEMENT

1. Land Improvement Requirements: The project owner shall fund activities that the CPM in consultation with the CDFW 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 surveys of boundaries and property lines, installation of signs, trash removal and other site cleanup measures, construction and repair of fences, invasive plant removal, removal of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at \$250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for desert tortoise. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.
2. Long-term Management Plan. The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on

the acquired compensation lands. The plan shall be submitted for approval of the CPM in consultation with CDFW.

3. Long-Term Maintenance and Management Funding. The project owner shall provide money to establish an account with a non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis is completed within the time period specified for this payment (see the verification section at the end of this condition), the project owner shall provide initial payment of \$203,000.00, calculated at \$1,450 an acre for each compensation acre, as shown in Biological Resources Table 4 (above) into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis once the analysis is completed and approved. If the approved analysis indicates less than \$1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with the project owner and CDFW before deciding whether to approve an entity to hold the project's long-term maintenance and management funds on any lands. The CPM in consultation with the project owner and CDFW may designate another state agency or non-profit organization to hold the 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, leave the money in the REAT Account, or designate another entity such as NFWF to manage the long-term

maintenance and management fee for CDFW and with CDFW supervision.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder or manager to ensure the following conditions:

- i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.
- ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM in consultation with CDFW, or the approved third-party, long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.
- iii. Pooling Funds. A CPM-approved non-profit organization, qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.
- iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFW or an approved third party for reasonable expenses 1) incurred during title, easement, and documentation review, 2) expenses incurred from other state or state-approved federal agency reviews, and 3) overhead related to providing compensation lands.

COMPENSATORY MITIGATION LAND SECURITY

1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of Swainson's hawk compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval, in consultation with CDFW, of the form of the Security.

The Security amount shall be based on the estimates provided in Biological Resources Table 4. This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The project owner shall provide verification that financial assurances have been established to the CPM with copies of the document(s) to CDFW, 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 ground-disturbing activities described in section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the Security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the project owner upon successful completion of the associated requirements in this condition.

Security, for the requirements of this condition, shall be provided in the amount of \$2,096,318.70 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition (below). The Security is calculated in part from the items that follow but are adjusted as specified below (consult Biological Resources Table 4 for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

- i. Land acquisition costs for compensation land calculated at \$10,000/acre;
 - ii. Site assessments, appraisals, biological surveys, transaction closing, and escrow costs calculated as \$18,000 total per parcel (presuming 60 acres per parcel);
 - iii. Initial site clean-up, restoration, or enhancement calculated at \$250/acre;
 - iv. Third-party and agency administrative transaction costs and overhead calculated as percentages of land cost;
 - v. Long-term management and maintenance fund calculated at \$1,450 per acre; and
 - vi. NFWF fees to establish a project-specific account, manage the sub-account for acquisition and initial site work, and manage the sub-account for long term management and maintenance.
2. The project owner may elect to comply with some or all of the requirements in this condition by providing funds to implement the requirements into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs of implementing the requirement (as set forth in the Security section of this condition, paragraph 3 above). If the actual cost of the acquisition, initial protection and habitat improvements, long-term funding or other cost is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, the long-term funding requirements as established in an approved PAR or PAR-like analysis, or the other actual costs that are estimated in the table. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall be returned to the project owner.
3. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall

be subject to approval by the CPM, in consultation with CDFW prior to land acquisition, enhancement, or management activities. Agreements to delegate land acquisition to an approved third party or to manage compensation lands shall be executed and implemented within 18 months of the Energy Commission's certification of the project.

4. The project owner may request the CPM to provide it with all available information about any funds held by the Energy Commission, CDFW, or NFWF as project security, or funds held in a NFWF sub-account for this project or other project-specific account held by a third party. The CPM shall also fully cooperate with any independent audit that the project owner may choose to perform on any of these funds.

Verification: The project owner shall provide the CPM with either the results of the nesting surveys or written verification that the project owner shall assume presence no less than 60 days prior to ground disturbance or site mobilization on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the project owner shall provide verification to the CPM and CDFW that an approved Security has been established in accordance with this condition of certification no later than 30 days prior to beginning project ground-disturbing activities. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval in consultation with CDFW of the form of the Security. The project owner or an approved third party shall complete and provide written verification to the CPM and CDFW of the compensation lands acquisition and transfer within 18 months of the start of project ground-disturbing activities.

No later than 12 months after the start of any ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcel(s) intended for purchase, and shall obtain approval from the CPM in consultation with CDFW prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands and provide written verification to the CPM and CDFW of such completion no later than 18 months after the issuance of the Energy Commission Decision.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the

required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFW to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed and written verification provided to the CPM no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner or an approved third party shall provide the CPM and CDFW with a management plan for the compensation lands associated with any phase of construction within 180 days of the land or easement purchase, as determined by the date on the title. The CPM in consultation with CDFW shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM and CDFW an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during project construction. If this analysis shows that more lands were disturbed than was anticipated in this condition, the project owner shall provide the Energy Commission with additional compensation lands and funding commensurate with the added impacts and applicable mitigation ratios set forth in this condition. A final analysis of all project related ground disturbance may not result in a reduction of compensation requirements if the deadlines established under this condition for transfer of compensation lands and funding have passed prior to completion of the analysis.

MOHAVE GROUND SQUIRREL HABITAT COMPENSATORY MITIGATION

ALTERNATIVE BIO-20 The project owner shall provide compensatory mitigation acreage of 140 acres of Mohave ground squirrel habitat lands, adjusted to reflect the final project footprint, as specified in this condition. In addition, the project owner shall provide funding for initial improvement and long-term maintenance, enhancement, and management of the acquired lands for protection and enhancement of Mohave ground squirrel populations, and comply with other related requirements of this condition.

This mitigation ratio is based on a 2:1 ratio for the power plant site. Costs of these requirements are estimated to be \$2,033,290.00 (see Biological Resources Table 5 for a complete breakdown of costs and acreage). All costs are best estimates as of fall 2010. Actual costs will be determined at the time of the transactions and may change the funding needed to implement the required mitigation obligation based on changing land costs or management fees. Regardless of the estimates, the project owner is responsible for providing adequate funding to implement the required mitigation.

In lieu of acquiring lands itself, the project owner may satisfy the requirements of this condition by depositing funds into a Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF) as described below. If the project owner elects to establish a REAT NFWF Account and have NFWF and the agencies complete the required habitat compensation, then the total estimated cost of complying with this condition is \$2,138,318.70. The amount of security or NFWF deposit shall be adjusted up or down to reflect any revised cost estimates recommended by REAT.

The actual costs to comply with this condition will vary depending on the final footprint of the project, the costs of acquiring compensation habitat, the costs of initially improving the habitat, and the actual costs of long-term management as determined by a Property Analysis Report or similar analysis (below). The 140-acre habitat requirement, and associated funding requirements based on that acreage, shall be adjusted up or down if there are changes in the final footprint of the project or the associated costs of evaluation, acquisition, management, and other factors listed in Biological Resources Table 5. Regardless of actual cost, the project owner shall be responsible for funding all requirements of this condition.

COMPENSATORY MITIGATION LAND ACQUISITION

1. Method of Acquisition. Compensation lands shall be acquired by either of the two options listed below. Regardless of the method of acquisition, the transaction shall be complete only upon completion of all terms and conditions described in this condition of certification:
 - a. The project owner shall acquire lands and transfer title and/or conservation easement to a state or federal land management agency or to a third-party non-profit land management organization, as approved by the CPM in consultation with CDFW; or

- b. The project owner shall deposit funds into a project-specific subaccount within the REAT Account established with the NFWF, in the amount as indicated in Biological Resources Table 5 (adjusted to reflect final project footprint and any applicable REAT adjustments to costs).
2. Selection Criteria for Compensation Lands. The compensation lands selected for acquisition shall:
 - a. Be in the western Mojave Desert;
 - b. Provide moderate to good quality habitat for Mohave ground squirrel with capacity to improve in quality and value for this species;
 - c. Be a contiguous block of land (preferably) or located so they result in a contiguous block of protected habitat;
 - d. Be adjacent to larger blocks of lands that are already protected, or be in a location approved by the CDFW, such that there is connectivity between the acquired lands and the protected lands;
 - e. Be connected to lands for which there is reasonable evidence (for example, recent [<15 years] CNDDDB occurrences on or immediately adjacent to the proposed lands) suggesting current occupation by Mohave ground squirrel ideally with populations that are stable, recovering, or likely to recover;
 - f. Not have a history of intensive recreational use, grazing, or other disturbance that might make habitat recovery and restoration infeasible;
 - g. Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration; and
 - h. Not be encumbered by easements or uses that would preclude fencing of the site or preclude or unacceptably constrain management of the site for the primary benefit of the species and their habitat for which mitigation lands were secured.
3. 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 Mohave ground squirrel in relation to the criteria listed above and must be approved by the CPM. The CPM will share the proposal with and consult with CDFW before deciding whether to approve or disapprove the proposed acquisition.

4. **Compensation Lands Acquisition Conditions**: The project owner shall comply with the following conditions relating to acquisition of the compensation lands after the CPM in consultation with CDFW approved the proposed compensation lands:
 - a. **Preliminary Report**: The project owner, or 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. All documents conveying or conserving compensation lands and all conditions of title are subject to review and approval by the CPM in consultation with CDFW. For conveyances to the State, approval may also be required from the California Department of General Services, the California Fish and Game Commission, 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 in consultation with CDFW. Any transfer of a conservation easement or fee title must be to CDFW, a non-profit organization qualified to hold title to and manage compensation lands (pursuant to California Government Code section 65965), or to another public agency approved by the CPM in consultation with CDFW. 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 approved non-profit organization holds a conservation easement, CDFW shall be named a third party beneficiary. 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 in consultation with CDFW of the terms of any transfer of fee title or conservation easement to the compensation lands.

- c. 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 in consultation with CDFW before it can be used to establish funding levels or management activities for the compensation lands.
5. Compensation Lands Acquisition Costs: The project owner shall pay all other costs related to acquisition of compensation lands and conservation easements. In addition to actual land costs, these acquisition costs shall include, but shall not be limited to, the items listed below. Management costs including site cleanup measures are described separately in the following section.
 - a. Level 1 Environmental Site Assessment;
 - b. Appraisal;
 - c. Title and document review costs;
 - d. Expenses incurred from other state, federal, or local agency reviews;
 - e. Closing and escrow costs;
 - f. Overhead costs related to providing compensation lands to CDFW or an approved third party;
 - g. Biological survey(s) to determine mitigation value of the land; and
 - h. Agency costs to accept the land (e.g., writing and recording of conservation easements and title transfer).

COMPENSATORY MITIGATION LAND IMPROVEMENT

1. Land Improvement Requirements: The project owner shall fund activities that the CPM in consultation with the CDFW 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 surveys of boundaries and property lines, installation of signs, trash removal and other site cleanup measures, construction and repair of fences, invasive plant removal, removal of roads, and similar measures to protect habitat and improve habitat quality on the compensation lands.

The costs of these activities are estimated at \$250 an acre, but will vary depending on the measures that are required for the compensation lands. A non-profit organization, CDFW, or another public agency may hold and expend the habitat improvement funds if it is qualified to manage the compensation lands (pursuant to California Government Code section 65965), if it meets the approval of the CPM in consultation with CDFW, and if it is authorized to participate in implementing the required activities on the compensation lands. If CDFW takes fee title to the compensation lands, the habitat improvement fund must be paid to CDFW or its designee.

COMPENSATORY MITIGATION LAND LONG-TERM MANAGEMENT

1. Long-term Management Requirements: Long-term management is required to ensure that the compensation lands are managed and maintained to protect and enhance habitat for desert tortoise. Management activities may include maintenance of signs, fences, removal of invasive weeds, monitoring, security and enforcement, and control or elimination of unauthorized use.
2. Long-term Management Plan. The project owner shall pay for the preparation of a Management Plan for the compensation lands. The Management Plan shall reflect site-specific enhancement measures on the acquired compensation lands. The plan shall be submitted for approval of the CPM in consultation with CDFW.
3. Long-Term Maintenance and Management Funding. The project owner shall provide money to establish an account with a non-wasting capital that will be used to fund the long-term maintenance and management of the compensation lands. The amount of money to be paid will be determined through an approved PAR or PAR-like analysis conducted for the compensation lands. The amount of required funding is initially estimated to be \$1,450 for every acre of compensation lands. If compensation lands will not be identified and a PAR or PAR-like analysis completed within the time period specified for this payment (see the verification section at the end of this condition), the project

owner shall provide initial payment of \$203,000.00 calculated at \$1,450 an acre for each compensation acre, as shown in Biological Resources Table 5 (above), into an account for long-term maintenance and management of compensation lands. The amount of the required initial payment or security for this item shall be adjusted for any change in the project footprint as described above. If an initial payment is made based on the estimated per-acre costs, the project owner shall deposit additional money as may be needed to provide the full amount of long-term maintenance and management funding indicated by a PAR or PAR-like analysis, once the analysis is completed and approved. If the approved analysis indicates less than \$1,450 an acre will be required for long-term maintenance and management, the excess paid will be returned to the project owner.

The project owner must obtain the CPM's approval of the entity that will receive and hold the long-term maintenance and management fund for the compensation lands. The CPM will consult with the project owner and CDFW before deciding whether to approve an entity to hold the project's long-term maintenance and management funds on any lands. The CPM in consultation with the project owner and CDFW may designate another state agency or non-profit organization to hold the 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, leave the money in the REAT Account, or designate another entity such as NFWF to manage the long-term maintenance and management fee for CDFW and with CDFW supervision.

The project owner shall ensure that an agreement is in place with the long-term maintenance and management fee holder/manager to ensure the following conditions:

- i. Interest. Interest generated from the initial capital shall be available for reinvestment into the principal and for the long-term operation, management, and protection of the approved compensation lands, including reasonable administrative overhead, biological monitoring, improvements to carrying capacity, law enforcement

measures, and any other action approved by CDFW designed to protect or improve the habitat values of the compensation lands.

- ii. Withdrawal of Principal. The long-term maintenance and management fee principal shall not be drawn upon unless such withdrawal is deemed necessary by the CPM in consultation with CDFW or the approved third-party, long-term maintenance and management fee manager to ensure the continued viability of the species on the compensation lands. If CDFW takes fee title to the compensation lands, monies received by CDFW pursuant to this provision shall be deposited in a special deposit fund established solely for the purpose to manage lands in perpetuity unless CDFW designates NFWF or another entity to manage the long-term maintenance and management fee for CDFW.
- iii. Pooling Funds. A CPM-approved, non-profit organization qualified to hold long-term maintenance and management fees solely for the purpose to manage lands in perpetuity, may pool the fund with other funds for the operation, management, and protection of the compensation lands for local populations of desert tortoise. However, for reporting purposes, the long-term maintenance and management fee fund must be tracked and reported individually to the CDFW and CPM.
- iv. Reimbursement Fund. The project owner shall provide reimbursement to CDFW or an approved third party for reasonable expenses incurred during title, easement, and documentation review, expenses incurred from other state or state-approved federal agency reviews, and overhead related to providing compensation lands.

COMPENSATORY MITIGATION LAND SECURITY

1. Compensation Mitigation Security: The project owner shall provide security sufficient for funding acquisition, improvement, and long-term management of desert tortoise compensation land. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval in consultation with CDFW of the form of the Security.

The security amount shall be based on the estimates provided in Biological Resources Table 5. This amount shall be updated and verified prior to payment and shall be adjusted to reflect actual costs or more current estimates as agreed upon by the REAT agencies.

The project owner shall provide verification that financial assurances have been established to the CPM, with copies of the document(s) to CDFW, 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 ground-disturbing activities described in section A of this condition.

In the event that the project owner defaults on the Security, the CPM may use money from the Security solely for implementation of the requirements of this condition. The CPM's use of the security to implement measures in this condition may not fully satisfy the project owner's obligations under this condition. Any amount of the Security that is not used to carry out mitigation shall be returned to the project owner upon successful completion of the associated requirements in this condition.

Security for the requirements of this condition shall be provided in the amount of \$2,138,318.70 if the project owner elects to use the REAT Account with NFWF pursuant to paragraph 4 of this condition (below). The Security is calculated in part from the items that follow, but which are adjusted as specified below (consult Biological Resources Table 5 for the complete breakdown of estimated costs). However, regardless of the amount of the security or actual cost of implementation, the project owner shall be responsible for implementing all aspects of this condition.

- i. land acquisition costs for compensation land calculated at \$10,000/acre;
- ii. Site assessments, appraisals, biological surveys, transaction closing, and escrow costs, calculated as \$18,000 total per parcel (presuming 60 acres per parcel);
- iii. Initial site clean-up, restoration, or enhancement calculated at \$250/acre;
- iv. Third-party and agency administrative transaction costs and overhead calculated as percentages of land cost;

- v. Long-term management and maintenance fund calculated at \$1,450 per acre; and
 - vi. NFWF fees to establish a project-specific account, manage the sub-account for acquisition and initial site work, and manage the sub-account for long-term management and maintenance.
2. The project owner may elect to comply with some or all of the requirements in this condition by providing funds to implement the requirements into the Renewable Energy Action Team (REAT) Account established with the National Fish and Wildlife Foundation (NFWF). To use this option, the project owner must make an initial deposit to the REAT Account in an amount equal to the estimated costs of implementing the requirement (as set forth in the Security section of this condition in paragraph 3 above). If the actual cost of the acquisition, initial protection and habitat improvements, long-term funding, or other cost is more than the estimated amount initially paid by the project owner, the project owner shall make an additional deposit into the REAT Account sufficient to cover the actual acquisition costs, the actual costs of initial protection and habitat improvement on the compensation lands, the long-term funding requirements as established in an approved PAR or PAR-like analysis, or the other actual costs that are estimated in the table. If those actual costs or PAR projections are less than the amount initially transferred by the applicant, the remaining balance shall be returned to the project owner.
 3. The responsibility for acquisition of compensation lands may be delegated to a third party other than NFWF, such as a non-governmental organization supportive of desert habitat conservation, by written agreement of the Energy Commission. Such delegation shall be subject to approval by the CPM in consultation with CDFW prior to land acquisition, enhancement, or management activities. Agreements to delegate land acquisition to an approved third party, or to manage compensation lands, shall be executed and implemented within 18 months of the start of project related ground disturbance.
 4. The project owner may request the CPM to provide it with all available information about any funds held by the Energy Commission, CDFW, or NFWF as project security, or funds held in a NFWF sub-account for this project or other project-specific account held by a third party. The

CPM shall also fully cooperate with any independent audit that the project owner may choose to perform on any of these funds.

Verification: The project owner shall provide the CPM with written notice of intent to start ground disturbance at least 30 days prior to the start of ground-disturbing activities on the project site.

If the mitigation actions required under this condition are not completed at least 30 days prior to the start of ground-disturbing activities, the project owner shall provide verification to the CPM and CDFW that an approved Security has been established in accordance with this condition of certification no later than 30 days prior to beginning project ground-disturbing activities. Financial assurance can be provided to the CPM in the form of an irrevocable letter of credit, a pledged savings account or another form of security (Security). Prior to submitting the Security to the CPM, the project owner shall obtain the CPM's approval in consultation with CDFW of the form of the Security. The project owner or an approved third party shall complete and provide written verification to the CPM and CDFW of the compensation lands acquisition and transfer within 18 months of the start of project ground-disturbing activities.

No later than 12 months after the start of any phase of ground-disturbing project activities, the project owner shall submit a formal acquisition proposal to the CPM describing the parcels intended for purchase, and shall obtain approval from the CPM in consultation with CDFW prior to the acquisition. If NFWF or another approved third party is handling the acquisition, the project owner shall fully cooperate with the third party to ensure the proposal is submitted within this time period. The project owner or an approved third party shall complete the acquisition and all required transfers of the compensation lands, and provide written verification to the CPM and CDFW of such completion, no later than 18 months after the start of project related ground disturbance activities. If NFWF or another approved third party is being used for all or part of the acquisition, the project owner shall ensure that funds needed to accomplish the acquisition are transferred in timely manner to facilitate the planned acquisition and to ensure the land can be acquired and transferred prior to the 18-month deadline.

The project owner shall complete and submit to the CPM a PAR or PAR-like analysis no later than 60 days after the CPM approves compensation lands for acquisition associated with any phase of construction. The project owner shall fully fund the required amount for long-term maintenance and management of the compensation lands for that phase of construction no later than 30 days after the CPM approves a PAR or PAR-like analysis of the anticipated long-term maintenance and management costs of the compensation lands. Written verification shall be provided to the CPM and CDFW to confirm payment of the long-term maintenance and management funds.

No later than 60 days after the CPM determines what activities are required to provide for initial protection and habitat improvement on the compensation lands for any phase of construction, the project owner shall make funding available for those activities and provide written verification to the CPM of what funds are available and how costs will be paid. Initial protection and habitat improvement activities on the compensation lands for that phase of construction shall be completed and written verification provided to the CPM no later than six months after the CPM's determination of what activities are required on the compensation lands.

The project owner, or an approved third party, shall provide the CPM and CDFW with a management plan for the compensation lands associated with any phase of construction within 180 days of the land or easement purchase as determined by the date on the title. The CPM in consultation with CDFW shall approve the management plan after its content is acceptable to the CPM.

Within 90 days after completion of all project related ground disturbance, the project owner shall provide to the CPM and CDFW an analysis, based on aerial photography, with the final accounting of the amount of habitat disturbed during project construction. If this analysis shows that more lands were disturbed than were anticipated in this condition, the project owner shall provide the Energy Commission with additional compensation lands and funding commensurate with the added impacts and applicable mitigation ratios set forth in this condition. A final analysis of all project related ground disturbance may not result in a reduction of compensation requirements if the deadlines established under this condition for transfer of compensation lands and funding have passed prior to completion of the analysis.

SOIL & WATER RESOURCES CONDITIONS OF CERTIFICATION

DRAINAGE, EROSION, AND SEDIMENTATION CONTROL PLAN

SOIL&WATER-1: Prior to site mobilization, the project owner shall obtain the Compliance Project Manager's (CPM's) approval for a site specific Drainage, Erosion, and Sediment Control Plan (DESCP) that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operation phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, and identify all monitoring and maintenance activities. The project owner shall complete all necessary engineering plans, reports, and documents necessary for the Compliance Project Manager (CPM) to conduct a review of the project and provide a written evaluation as to whether the proposed grading, drainage improvements, and flood management activities comply with all requirements presented herein. The plan shall be consistent with the grading and drainage plan condition of certification in the Facility Design section and shall contain the following elements:

Vicinity Map: A map shall be provided indicating the location of all project elements (including service utilities and the generator transmission line) with depictions of all significant geographic features to include watercourses, washes, irrigation and drainage canals, major utilities, and sensitive areas.

Site Delineation: The site and all project elements (including service utilities and the generator transmission line) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, underground utilities, roads, and drainage facilities. Adjacent property owners shall be identified on the vicinity map. All maps shall be presented at a legible scale.

Drainage: The DESCp shall include the following elements:

- a. Topography. Topography for off-site areas are required to define the existing upstream tributary areas to the site and downstream to provide enough definition to map the existing storm-water flow and flood hazard. Spot elevations shall be required where relatively flat conditions exist;

- b. Proposed Grade. Proposed grade contours shall be shown at a scale appropriate for delineation of on-site ephemeral washes, drainage ditches, and tie-ins to the existing topography;
- c. Hydrology. Existing and proposed hydrologic calculations for on-site areas and off-site areas that drain to the site; include maps showing the drainage area boundaries and sizes in acres, topography, and typical overland flow directions, and show all existing, interim, and proposed drainage infrastructure and their intended direction of flow;
- d. Hydraulics. Provide hydraulic calculations to support the selection and sizing of the on-site drainage network, diversion facilities and Best Management Practices (BMPs).

Watercourses and Critical Areas: The DESCP shall show the location of all on-site and nearby watercourses including washes, irrigation and drainage canals, and drainage ditches, and shall indicate the proximity of those features to the construction site. Maps shall identify high hazard flood-prone areas.

Clearing and Grading: The plan 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, cut/fill depths or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Existing and proposed topography tying in proposed contours with existing topography shall be illustrated. The DESCP shall include a statement of the quantities of material excavated at the site, whether such excavations or fills are temporary or permanent, and the amount of such material to be imported or exported, or a statement explaining that there would be no clearing and/or grading conducted for each element of the project. Areas of no disturbance shall be properly identified and delineated on the plan maps.

Soil Wind and Water Erosion Control: The plan shall address exposed soil treatments to be used during construction and operation of the 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 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.

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.

Best Management Practices: The DESCp shall show the location, timing, and maintenance schedule of all erosion- and sediment-control BMPs to be used prior to initial grading during project element excavation and construction, during final grading/stabilization, and after construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule shall include post-construction maintenance of treatment-control BMPs applied to disturbed areas following construction.

Erosion Control Drawings: The erosion-control drawings and narrative shall be designed, stamped, and sealed by a professional engineer or erosion-control specialist.

Agency Comments: The DESCp shall include copies of recommendations, conditions, and provisions from the County of Los Angeles, California Department of Fish and Wildlife (CDFW), and Lahontan Regional Water Quality Control Board (RWQCB).

Monitoring Plan: Monitoring activities shall include routine measurement of the volume of accumulated sediment in the on-site drainage ditches, and storm-water diversions.

Verification: The DESCp shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**, and shall be approved by the chief building official (CBO) and (CPM). In addition, the project owner shall do all of the following:

- a. No later than 60 days prior to start of site mobilization, the project owner shall submit a copy of the DESCp to the city of Palmdale, County of Los Angeles, and the RWQCB for review and comment. The CBO and CPM shall consider the comments received from the city of Palmdale, County of Los Angeles, and RWQCB in their approval of the DESCp;
- b. During construction, the project owner shall provide a monthly compliance report on the effectiveness of the drainage, erosion, and sediment control measures and the results of monitoring and maintenance activities. Reporting the effectiveness shall

- include a table listing: (1) each drainage, erosion, and sediment control measure; (2) the monitoring frequency of the drainage, erosion, and sediment control measure; and (3) the maintenance performed, if any, to that measure during the monthly reporting period;
- c. Once operational, the project owner shall provide in the annual compliance report information on the results of storm-water BMP monitoring and maintenance activities; and
 - d. Provide the CPM with two copies each of all monitoring or other reports required for compliance with Los Angeles County, CDFW, and RWQCB.

CONSTRUCTION – STORM WATER POLLUTION PREVENTION PLAN

SOIL&WATER-2: The project owner shall fulfill the requirements contained in State Water Resources Control (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities Order No. 2009-0009-DWG, as Modified by 2010-0014-DWQ, NPDES No. CAS000002 and all subsequent revisions and amendments. The project owner shall develop and implement a construction Storm Water Pollution Prevention Plan (SWPPP) for the construction of the project.

Verification: Thirty days prior to site mobilization, the project owner shall submit the construction SWPPP to the CBO and CPM for approval. A copy of the approved construction SWPPP shall be kept accessible on site at all times.

WATER SUPPLY – CONSTRUCTION WATER

SOIL&WATER-3: The project proposed use of recycled water during construction for dust control and soil compaction shall be disinfected tertiary treated recycled water supplied by the city of Palmdale. Use of this recycled water shall meet the requirements of California Code of Regulations, title 22, division 4, chapter 3, and title 17. The project owner shall provide the CPM two copies of the executed agreement between the applicant and city of Palmdale for the supply of recycled water. This agreement shall specify all terms and costs for the receipt and use of recycled water. The project shall not use recycled water from District No. 20 for project construction until this agreement is executed.

Verification: No later than 60 days prior to construction, the project owner shall submit two copies of the executed agreement for the supply and on-site use of disinfected tertiary-treated recycled water supplied by the city of Palmdale for project construction.

If construction water is provided by a pipeline connected to the Palmdale WRP, then the project owner shall submit to the CPM two copies of the Engineering Report and Cross Connection inspection report and include all comments from the Lahontan RWQCB and the California Department of Public Health (DPH) prior to the delivery of recycled water from District No. 20.

WATER SUPPLY – OPERATION WATER

SOIL&WATER-4: Recycled water from the Los Angeles County Sanitation District shall be used for all allowable project construction needs. The project's use of water for project operations shall be potable water from the Los Angeles County Department of Public Works (LACDPW) for drinking and sanitation, and tertiary-treated recycled water from the city of Palmdale for industrial use. Use of recycled water shall comply with California Code of Regulations, title 22 and title 17. The project owner shall provide the CPM a copy of an agreement demonstrating the city of Palmdale is committed to delivery of recycled water.

As a pre-requisite to construction, the project owner shall provide the CPM a copy of the valid potable water supply agreement between the project owner and District 40 demonstrating that the necessary fees are paid and District 40 is committed to delivery of potable water by the start of project construction date.

Verification: No later than 90 days prior to construction, the project owner shall provide a copy of the valid water supply agreement for potable water supply from District 40.

No later than 90 days prior to construction, the project owner shall provide a copy of the executed agreement with city of Palmdale for the recycled water supply.

No later than 60 days prior to operation, the project owner shall submit the Engineering Report and Cross Connection inspection report for the recycled water supply to the Lahontan RWQCB, California Department of Public Health (DPH), and CBO. The project owner shall submit to the CPM two copies of the Engineering Report and Cross Connection inspection report and include all comments from the Lahontan RWQCB and California DPH prior to accepting delivery of recycled water.

No later than 30 days after project construction, the project owner shall submit a report showing how much recycled water was used for construction, the type of recycled water, and what activities it was used for.

WATER METERING

SOIL&WATER-5: Prior to the connection to a potable or recycled water service, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record the volume of potable and recycled water supplied to the project. The metering devices shall be operational for the life of the project.

If recycled water is trucked to the project, the project owner shall keep daily logs of the volume of recycled water in each truckload delivered to the project.

A semi-annual summary of the project construction daily maximum, monthly average, monthly total, and annual total water use, differentiating between potable and recycled water, shall be submitted to the CPM in the annual compliance report.

An annual summary of the project operation daily maximum, monthly average, monthly total, and annual total water use, differentiating between potable and recycled water, shall be submitted to the CPM in the annual compliance report.

The daily and monthly water use shall be reported in gallons per day, and the semi-annual and annual water use shall be reported in acre-feet per year. For calculating the total water use, the term "year" begins on January 1.

Verification:

1. At least 60 days prior to use of any water source for project construction and operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the potable and recycled pipelines serving the project construction and operation. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report.
2. Beginning six months after the start of construction, the project owner shall prepare a semi-annual summary of the daily maximum, monthly average, monthly total, and annual total amount of water used for construction purposes.
3. Annually, the project owner shall prepare a summary of the daily maximum, monthly average, monthly total, and annual total water use.

HYDROSTATIC TEST WATER DISCHARGE REQUIREMENTS

SOIL&WATER-6: The project owner shall discharge all hydrostatic test water in accordance with the NPDES permit. The project owner shall comply with (LACSD) Wastewater Ordinance requirements for appropriate management of these discharges.

Verification: Prior to the discharge of hydrostatic test water into the LACSD sewer system, the project owner shall do all of the following:

1. Analyze both carbon and non-carbon steel piping test water in accordance with LACSD specified analyses prior to discharge or disposal of the test water;
2. Submit those analyses together with a tabulated summary of the analytical results and corresponding acceptable limits to the CPM for review and the LACSD for approval and a copy to the CBO. If discharge to the sewer system is approved by the LACSD, include a copy of the approval letter in the annual compliance report; and
3. If discharge of either the carbon or non-carbon steel piping test water to the sewer system is not approved by the LACSD, then submit a copy of the disposal receipt issued by a water treatment plant in the annual compliance report.

SOIL&WATER-7: Deleted.

WASTEWATER COLLECTION SYSTEM REQUIREMENTS

SOIL&WATER-8: The project owner shall recycle and reuse all process wastewater streams to the extent practicable. Prior to transport and disposal of any facility operation wastewaters that are not suitable for treatment and reuse on site, the project owner shall test and classify the stored wastewater to determine proper management and disposal requirements. The project owner shall ensure that the wastewater is transported and disposed of in accordance with the wastewater's characteristics and classification and all applicable LORS (including any California Code of Regulations, title 22, Hazardous Waste, and title 23 Waste Discharges to Land requirements).

Verification: In the annual compliance report, the project owner shall provide the CPM with a report of test results of any wastewater that is not suitable for treatment and reuse on site, the classification of this wastewater, and documentation of the proper management and disposal of this wastewater including, but not limited to, non-hazardous and hazardous waste manifest.

SEWER SERVICE CONNECTION

SOIL&WATER-9: Prior to commercial operation, the project owner shall provide the CPM and the County of Los Angeles Sanitation District No. 20 (Palmdale WRP) all information and documentation required to satisfy LACSD No. 20 Wastewater Ordinance, Master Ordinance and Rate and Mean Loadings Ordinance for the discharge of sanitary wastewater into the LACSD No. 20 sewer system. During operation, any monitoring reports provided to LACSD No. 20 shall also be provided to the CPM. The CPM shall be notified of any violations of discharge limits or amounts.

Verification: At least 60 days prior to commercial operation, the project owner shall submit the information and documentation required to satisfy the LACSD No. 20 Wastewater Ordinance, Master Ordinance, and Rate and Mean Loadings Ordinance for review and comment, and to the CPM and the CBO for review and approval.

During project operation, the project owner shall submit any wastewater quality monitoring reports required by LACSD No. 20 to the CPM in the annual compliance report. The project owner shall submit any notice of violations from LACSD No. 20 to the CPM within 10 days of receipt and fully explain the corrective actions taken in the annual compliance report.

CULTURAL RESOURCES CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance (includes “preconstruction site mobilization, “construction-related ground disturbance,” and “construction-related grading, boring, and trenching,” as defined in the General Conditions for this project), the project owner shall obtain the services of a Cultural Resources Specialist (CRS) and one or more alternate CRSs (at the project owner’s option).

The CRS shall manage all cultural resources monitoring, mitigation, curation, and reporting activities in accordance with the conditions of certification. The CRS may elect to obtain the services of Cultural Resources 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 eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to Compliance Project Manager (CPM) approval of the CRS and alternates, unless such activities are specifically approved by the CPM.

Approval of a CRS may be denied or revoked for reasons including, but not limited to, non-compliance on this or other projects licensed by the Energy Commission. After all ground disturbance is completed and the CRS has fulfilled all responsibilities specified in these cultural resources conditions, the project owner may discharge the CRS if the CPM approves. With the discharge of the CRS, these cultural resources conditions no longer apply to the activities of this power plant.

CULTURAL RESOURCES SPECIALIST

The project owner shall submit the resumes and qualifications for the CRS, CRS alternates, and all technical specialists to the CPM for review and approval. The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior’s Professional Qualifications Standards, as published in Code of Federal Regulations, title 36, part 61 (36 C.F.R., part 61). In addition, the CRS shall have the following additional qualifications:

1. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field;
2. At least three years of archaeological or historical monitoring experience, as appropriate (per nature of predominant cultural resources on the project site), resource mitigation, and field experience in California; and
3. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to implement effectively the conditions of certification.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. A B.S. or B.A. degree in anthropology, archaeology, historical archaeology or a related field, and one year experience monitoring in California; or
2. An A.S. or A.A. degree in anthropology, archaeology, historical archaeology or a related field, and four years of experience monitoring in California; or
3. Enrollment in upper-division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialist(s), e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification:

1. At least 45 days prior to the start of ground disturbance, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.
2. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If there is no alternate CRS in place to conduct the duties of the CRS, a previously approved monitor may serve in place of a CRS so that ground disturbance may continue up to a maximum of three days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.
3. At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this condition.
4. At least five days prior to additional CRMs beginning on-site duties during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to their qualifications.
5. 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.
6. At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for on-site work and is prepared to implement the cultural resources conditions.

CUL-2 Prior to the start of ground disturbance, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, confidential cultural resources reports, all supplements, and the Energy Commission's Final Staff Assessment (FSA) for the project. 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 USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') 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.

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.

Verification:

1. At least 40 days prior to the start of ground disturbance, the project owner shall provide the AFC, data responses, confidential cultural resources documents, all supplements, and the Energy Commission FSA 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.
2. At least 15 days prior to the start of ground disturbance, if there are changes to any construction-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.
3. 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.
4. Weekly during ground disturbance a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.
5. Within five 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.

CUL-3	Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall follow the content and organization of the draft model
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CRMMP, provided by the CPM, and the authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP 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 CRMMP, unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the conditions of certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. The conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources conditions of certification from the Commission Decision are contained in Appendix A";
2. A proposed general research design that includes a discussion of archaeological 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 buried archaeological deposits is avoidance. A mitigation plan shall be prepared for any CRHR-eligible (as determined by the CPM) resource, impacts to which cannot be avoided. A prescriptive treatment plan may be included in the CRMMP for limited data types;
3. Specification of the implementation sequence and the estimated time frames needed to accomplish all construction-related tasks during the ground disturbance and post ground-disturbance analysis phases of the project;
4. 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;

5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities;
6. A description of all impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas 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 construction-related effects;
7. A statement that all encountered 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 as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum;
8. A statement that the project owner will pay all curation fees for artifacts recovered and for related documentation produced during cultural resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.
9. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during ground disturbance and cannot be treated prescriptively;
10. A statement demonstrating when and how the project owner will comply with Health and Human Safety Code 7050.5(b) and Public Resources Code 5097.98(b) and (e); and
11. A description of the contents, format, and review and approval process of the final Cultural Resource Report (CRR), which shall be prepared according to ARMR guidelines.

Verification:

1. 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 CRMMP for the CRS.
2. At least 30 days prior to the start of ground disturbance, the project owner shall submit the CRMMP to the CPM for review and approval.
3. 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 as a result of the archaeological investigations (survey, testing, data recovery).
4. Within 90 days after completion of ground disturbance (including landscaping), if cultural 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 California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, to accept the cultural materials from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

CUL-4

The project owner shall submit the final Cultural Resources Report (CRR) to the CPM for approval. The final CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, Department of Parks and Recreation (DPR) forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification:

1. Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.
2. Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR 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.
3. Within 10 days after CPM approval of the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of construction-related reports.

CUL-5 Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (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 training shall be prepared by the CRS, but may be conducted by any member of the archaeological team and may be presented in the form of a video. 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:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. 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;
5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt ground disturbance in the area of a discovery to an extent

sufficient to ensure that the resource is protected from further impacts as determined by the CRS;

6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
7. An informational brochure that identifies reporting procedures in the event of a discovery;
8. An acknowledgement form signed by each worker indicating that they have received the training; and
9. 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:

1. At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.
2. 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.
3. 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-6	The project owner shall ensure that the CRS, alternate CRS, or CRMs monitor full time all construction-related ground disturbance along the linear facilities routes, at laydown areas, roads, and other ancillary areas, and on those parts of the project site that the geo-archaeological report identified as representing a terrace landform (having a high archaeological sensitivity) to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner, including the Palmdale Ditch.
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The project owner shall ensure that no damage to the Palmdale Ditch occurs during project construction. If the Palmdale Ditch is damaged in any way including, but not limited to, disturbance of the masonry of the bridge and culverts, disturbance of the earthen profile or course, or disturbance of the tunnel mouth, the project owner shall submit to the CPM a plan for the recordation of the impacted parts of the ditch or features by an architectural historian who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in 36 Code of Federal Regulations part 61. The recordation shall meet the standards of the Historic American Engineering Record.

The project owner shall ensure that no damage to the California Aqueduct, Pearblossom Pumping Plant, or other ancillary facilities of the resource (Aqueduct) occurs during project construction. If the Aqueduct would be damaged in a way that would change the eligibility of the resource including, but not limited to, damage to the following character-defining features: its design as related to topography and natural features, the trapezoidal shape, the concrete lining and the ancillary infrastructure such as pumping plants and dams, the project owner shall submit to the CPM a plan for the recordation of the impacted parts of the Aqueduct or features by an architectural historian who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in 36 Code of Federal Regulations part 61. The recordation shall meet the standards of the Historic American Engineering Record Level I. This documentation should be completed in accordance with the Guidelines for Architectural and Engineering Documentation published by the Department of the Interior-National Park Service in the Federal Register/Volume 68, No. 139/Monday, July 21, 2003/Notices, pp. 43159 to 43162.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the first paragraph of this condition for as long as the activities are ongoing. 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 both observe the location of active excavation and inspect the dumped material.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts are discovered. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these 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 has been suspended.

The CRS or alternate CRS shall report daily to the CPM on the status of the project's cultural resources-related activities, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes 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 resources monitoring and mitigation activities with Energy Commission technical staff.

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.

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 by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions. 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:

1. 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.
2. Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.
3. Immediately upon a CRM recognizing that project construction will impact the Palmdale Ditch or any associated features or the Aqueduct or any of its ancillary facilities in an unanticipated and adverse manner, the project owner shall submit to the CPM for review and approval a plan for the recordation of the impacted parts of the ditch or features, or the Aqueduct facilities or character-defining features. The plan shall be prepared by an architectural historian who meets the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. The recordation shall be conducted by such a qualified architectural historian and shall meet the standards of the Historic American Engineering Record as defined in **CUL-6** above.
4. 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.
5. Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail, or in some other form of communication acceptable to the CPM.
6. At least 24 hours prior to reducing or ending daily reporting, 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 reducing or ending daily reporting.

7. 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 of the 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.
8. Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-7 The project owner shall grant authority to halt ground disturbance to the CRS, alternate CRS, and the CRMs 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.

In the event that a cultural resource over 50 years of age is found (or if younger but determined exceptionally significant by the CPM), or if impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. If the discovery includes human remains, the project owner shall comply with the requirements of Health and Human Safety Code 7050.5(b) and (c). Monitoring and daily reporting as provided in these conditions shall continue during the project's ground-disturbing activities elsewhere. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery and all of the following have occurred:

1. 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 resources discovery occurs between 8:00 a.m. on Friday and 8:00 a.m. 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 CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made;
2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery;

3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM; and
4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of 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.

Verification:

1. 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, and CRMs have the authority to halt ground disturbance in the vicinity of a cultural resources 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 a.m. on Friday and 8:00 a.m. on Sunday morning.
2. Within 48 hours of the discovery of a resource of interest to Native Americans, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. Unless the discovery can be treated prescriptively, as specified in the CRMMP, 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 resource.

CUL-8 If fill soils must be acquired from a non-commercial borrow site or disposed of to a non-commercial disposal site, unless less-than-five-year-old surveys of these sites for archaeological resources are documented to and approved by the CPM, the CRS shall survey the borrow and/or disposal site/s for cultural resources and record on DPR 523 forms any that are identified. When the survey is completed, the CRS shall convey the results and recommendations for further action to the project owner and the CPM, who will determine what, if any, further action is required. If the CPM determines that significant archaeological resources that cannot

be avoided are present at the borrow site, other conditions shall apply. The CRS shall report on the methods and results of these surveys in the final CRR.

Verification:

1. As soon as the project owner knows that a non-commercial borrow site and/or disposal site will be used, he/she shall notify the CRS and CPM and provide documentation of previous archaeological survey, if any, dating within the past five years, for CPM approval.

In the absence of documentation of recent archaeological survey, at least 30 days prior to any soil borrow or disposal activities on the non-commercial borrow and/or disposal sites, the CRS shall survey the site/s for archaeological resources. The CRS shall notify the project owner and the CPM of the results of the cultural resources survey, with recommendations, if any, for further action.

GEOLOGY & PALEONTOLOGY CONDITIONS OF CERTIFICATION

GEO-1 A Soils Engineering Report as required by section 1803 of the California Building Code (CBC) (2013), or its successor in effect at the time construction of the project were to commence, shall specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity, liquefaction, dynamic compaction, compressible soils, and corrosive soils. In accordance with CBC, the report must also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.

Verification: The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report that addresses the potential for strong seismic shaking, liquefaction, dynamic compaction, settlement due to compressible soils, and corrosive soils, and a summary of how the results of the analyses were incorporated into the project foundation and grading plan design for review and comment by the delegate chief building official (CBO). A copy of the Soils Engineering Report, application for grading permit, and any comments by the CBO are to be provided to the CPM at least 30 days prior to grading.

GEO-2 Additional fault investigation shall be performed for the southern end of the natural-gas pipeline in conjunction with city of Palmdale approval, in accordance with city of Palmdale General Plan S1.1.7., which requires that utility locations be limited in areas with exposure to faulting and be based on the city of Palmdale General Plan faulting hazards map (Figure LU-4). If the natural-gas pipeline crosses the San Andreas fault or any of its splays (Cemetery fault), or if it would be in danger of rupture from intense ground shaking, the design shall include appropriate safety features. This shall include a mechanism, such as automatic pressure-sensitive shut-off valves, to cut gas supply in event of pipe rupture.

Verification: A fault investigation report for the southern end of the proposed natural-gas line shall be submitted to the CPM at least 60 days prior to start of pipeline construction. Recommendations for further mitigation beyond automatic shut-off valves shall be included as appropriate.

GEO-2A Additional fault investigation shall be performed for the southern end of the natural-gas pipeline and transmission line Alternative Route 4 (if selected), in conjunction with city of Palmdale approval, in accordance with city of Palmdale General Plan S1.1.7, which requires that utility locations be limited in areas with exposure to faulting, and be based on the city of

Palmdale General Plan faulting hazards map (Figure LU-4). If the natural-gas pipeline or underground transmission line cross the San Andreas fault or any of its splays (Cemetery fault), or if it would be in danger of rupture from intense ground shaking, the design shall include appropriate safety features. This shall include a mechanism such as automatic pressure-sensitive shut-off valves to cut gas supply in event of pipe rupture.

Verification: A fault investigation report for the southern end of the proposed natural-gas line and transmission line Alternative Route 4 (if selected) shall be submitted to the CPM at least 60 days prior to start of trenching. Recommendations for further mitigation beyond automatic shut-off valves shall be included as appropriate.

GEO-3 Additional fault investigation shall be performed for the southern end of electric transmission line where it crosses the Llano fault Alquist-Priolo Zone and the San Andreas Fault Alquist-Priolo zone. This investigation shall include sufficient geologic mapping and/or fault trenching to verify that towers would not be directly impacted by fault rupture.

Verification: A fault investigation report for the southern end of the proposed transmission line shall be submitted to the CPM at least 60 days prior to start of transmission line construction. Recommendations for further mitigation beyond avoiding founding transmission towers directly on fault traces shall be included as appropriate.

GEO-4 Additional geotechnical investigation shall be performed for the electric transmission line where it crosses areas of projected liquefaction hazards per the Seismic Hazard Reduction Act. This geotechnical investigation shall be prepared and provided to the city of Palmdale as per the General Plan Safety Element Policy S1.1.1.

Verification: The design-level geotechnical investigation report for the proposed transmission line shall be submitted to the CPM at least 60 days prior to start of transmission line construction.

GEO-5 Additional geologic or geotechnical investigation shall be performed along the southern alignment between the San Andreas Fault and the Vincent substation to evaluate and mitigate the risk of landslide failure affecting the transmission line towers.

Verification: The design-level engineering geological or geotechnical investigation report for the proposed transmission line shall be submitted to the CPM at least 60 days prior to start of transmission line construction.

PAL-1 The project owner shall provide the Compliance Project Manager (CPM) with the resume and qualifications of its Paleontological Resource

Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a Qualified Professional Paleontologist as defined in the Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources by the Society of Vertebrate Paleontology (SVP) (SVP, 2010). The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
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 PRMs to monitor as he or she deems necessary on the project (PRMs) shall have the equivalent or combination of the following qualifications approved by the CPM:

- BS or BA degree in Geology or Paleontology and one year of experience monitoring in California; or
- AS or AA in Geology, Paleontology, or Biology and four years of experience monitoring in California; or

- Enrollment in upper division classes pursuing a degree in the fields of Geology or Paleontology and two years of monitoring experience in California.

Verification:

- (1) 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, whose approval must be obtained prior to initiation of ground disturbing activities.
- (2) At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project. The letter shall state that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by this condition of certification. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.
- (3) Prior to the termination or release of a 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 to the PRS and the CPM for approval maps and drawings showing the footprint of the power plant, construction lay down 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 plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet range. 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 or construction field

manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

Verification:

- (1) At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.
- (2) If there are 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.
- (3) 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 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 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 monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 2010) and shall include, but not be limited, to the following:

1. Procedures for and assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping, data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the conditions of certification;
3. A thorough discussion of the anticipated 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 and a description of the sampling methodology and how much sampling is expected to take place in which geologic units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, stopping construction, resuming construction, and how notifications will 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 for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum that meets 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 will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological conditions of certification.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. 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 paleontologic resources and identify procedures they must follow to ensure there are no impacts to sensitive paleontologic resources. The WEAP shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to stop or redirect construction in the event of a discovery or unanticipated impact to 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 he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall also 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 will be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontologic resources.

Verification:

(1) At least 30 days prior to ground disturbance, the project owner shall submit to the CPM for review and comment the draft WEAP including the brochure and sticker. The submittal shall also include a draft 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.

(2) At least 15 days prior to ground disturbance, the project owner shall submit to the CPM for approval the final 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 kick-off and 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 project kick-off, a CPM-approved video or in-person training may be used for new employees. 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:

1. 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 and the trainer or type of training (in-person and/or video) offered that month. An example of a suitable WEAP certification completion form is provided below. The MCR shall also include a running total of all persons who have completed the training to date.
2. 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, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that 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 of 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:

1. 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 monthly compliance report. The letter or email shall include the

justification for the change in monitoring and be submitted to the CPM for review and approval.

2. The project owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. 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.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours when construction has been stopped because of a paleontological find.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities that will be included in each MCR. The summary will include the name(s) of 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. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. 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: 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 ten days in advance of any proposed changes in monitoring different from that identified in the PRMMP. 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 completion of the ground-disturbing activities. The PRR

shall include an analysis of the collected fossil materials and related information and submit it to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials, a map showing the location of paleontological resources encountered, and the PRS' description of the sensitivity and significance of those resources.

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.

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 as a result 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 showing fees have been paid for curation and the owner relinquishes control and ownership of all fossil material.

Certification of Completion
Worker Environmental Awareness Program
Palmdale Energy Project (08-AFC-9C)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
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25.			

Cultural Trainer: _____ Signature: _____ Date: ___/___/___

PaleoTrainer: _____ Signature: _____ Date: ___/___/___

Biological Trainer: _____ Signature: _____ Date: ___/___/___

LAND USE CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall coordinate with property owners of farmland that is actively in production within the proposed transmission line right-of-way. The purpose of this coordination is to: (1) schedule construction activities at a location and time when damage to agricultural operations would be minimized to the extent practicable; and (2) ensure that any areas damaged or disturbed by construction are restored to a condition that closely approximates conditions that existed prior to construction-related disturbance, to the extent practicable.

This includes avoiding construction during peak planting, growing, and harvest seasons, if feasible, based on transmission line outage limitations. If damage or destruction occurs, the applicant shall perform restoration activities on the disturbed area in order to return the area to a condition that closely approximates conditions that existed prior to construction-related disturbance. This could include activities such as soil preparation, regrading, and reseeding.

Verification: The project owner shall document coordination efforts with affected agricultural landowners, and shall submit this documentation to the CPM at least 30 calendar days prior to the start of construction activities on the affected agricultural parcels. In addition, the project owner shall document any plans for restoration activities prior to construction and document any actual restoration activities it conducts post completion of the restoration. The project owner shall submit the documentation of restoration plans to the CPM at least 30 calendar days prior to the start of construction activities on the affected agricultural parcels. The project owner shall submit the documentation of the actual restoration activities that occurred to the CPM no later than 30 calendar days after the completion of construction activities on the affected agricultural parcels.

LAND-2 The project owner shall ensure that the proposed transmission line and natural-gas pipeline will be constructed and operated in compliance with the city of Palmdale's Zoning Ordinance, chapter 2, article 21 (Site Plan Review). The project owner shall submit a Site Plan Review to the city of Palmdale in sufficient time for review and comment, and to the Compliance Project Manager (CPM) for review and approval prior to the start of transmission line construction. The Site Plan Review shall be in compliance with the review process set forth by chapter 2, article 21 (Site Plan Review) of the city's Zoning Ordinance in order to ensure that the physical plans for the project are compatible with neighboring

developments, are appropriate for the site, and achieve the highest level of design that is feasible for the project.

Verification: At least 90 calendar days prior to the start of construction of the transmission line and natural-gas pipeline, including any demolition, grading, trenching, or site remediation, the project owner shall submit the site plan to the city of Palmdale 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 city of Palmdale.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any revisions to the site plan received from the city of Palmdale, along with any changes to the proposed site plan, to the CPM for review and approval.

LAND-3 The project owner shall dedicate an easement within, or adjacent to, the project transmission line corridor for the Avenue S Connector Trail as required by Los Angeles County's Antelope Valley Trails Master Plan and as requested by Los Angeles County's Department of Parks and Recreation. The easement to be dedicated by the project owner shall be a minimum of a 12-foot wide trail easement from the western edge of parcel #AIN3039011005 to the eastern edge of parcel #AIN3039006021.

Verification: The project owner shall coordinate the dedication of a portion of the project transmission line corridor to the county of Los Angeles for development of the Avenue S Connector Trail easement as approved by the Compliance Project Manager (CPM) within 180 days of the start of construction. The project owner shall provide documentation to the CPM that the dedication of the trail easement has been executed based on mutually agreed upon provisions between the project owner and the Los Angeles County's Department of Parks and Recreation, while ensuring safety and security of trail users. The documentation also shall guarantee that the easement would be located in the area specified by the county (a 12-foot wide trail easement from the western edge of parcel #AIN3039011005 to the eastern edge of parcel #AIN3039006021). The project owner shall provide to the CPM updates in the Annual Compliance Report on the status of easement dedication.

LAND-4 The project owner shall enter into a Franchise Agreement with the County of Los Angeles for the following portions of the transmission line that will cross County of Los Angeles public roadways:

- Two crossings over the Sierra Highway
- Four crossings over the Angeles Forest Highway
- One crossing over Vincent View Road

VERIFICATION: At least 15 days prior to construction of any of the crossings identified above, the project owner shall provide a copy of the approved Franchise Agreement(s) with Los Angeles County to the CPM.

TRAFFIC & TRANSPORTATION CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall prepare and implement a construction traffic control plan. The traffic control plan must include, but not be limited to, the following issues:

- Schedule construction activities such that traffic will arrive and depart from the power plant site during non-peak traffic hours to the extent practicable taking into consideration Condition of Certification **AQ-SC-6**. During the months of October through March when such scheduling may not be feasible, prepare and distribute a map showing acceptable access routes to the plant site that avoid the SR-14/Avenue M interchange during peak hours, such as SR-14 to Avenue L east to Sierra Highway south on Sierra Highway to Avenue M and east to the power plant site;
- Make improvements to East Avenue M (e.g. turn and acceleration/deceleration lanes) consistent with the existing project access features to allow for safe arrival/departure to/from the project site;
- Limit heavy equipment and building materials deliveries between 9:30 a.m. and 3:30 p.m., per Palmdale General Plan Circulation Element, to minimize impacts and route truck traffic around residential development;
- Provide signing, lighting, and traffic control device placement during construction impacting regional and local roadways;
- Ensure construction traffic avoids using the SR-14 on- and off-ramps to East Avenue M and the intersection of Sierra Highway and East Avenue M during peak morning and afternoon traffic periods;
- Traffic diversion plans (in coordination with the cities of Palmdale and Lancaster) to ensure access during temporary lane/road closures;
- Ensure access for emergency vehicles to the project site;
- Ensure pedestrian and bicycle safety from construction vehicle travel routes and any construction-related temporary travel lane closures or disruptions;
- Temporary closure of travel lanes or disruptions to street segments and intersections during reconductoring activities or any other utility tie-ins;

- Establish a parking plan for workers, construction vehicles, and trucks during transmission-line and pipeline construction;
- Installation of the natural-gas pipeline and water line to occur during nonpeak hours;
- Use flagging, flag men, signage, and cover open trenches when needed; and
- All road paving activities shall comply with engineering design standards for road development pursuant to guidelines mandated by the Public Works Departments of the City of Palmdale and the County of Los Angeles as appropriate.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a traffic control plan that outlines each component above to Caltrans and the cities of Palmdale and Lancaster Planning Departments for review and comment and to the Compliance Project Manager (CPM) for review and approval. The project owner shall provide the CPM with any comments from Caltrans and the cities of Palmdale and Lancaster.

TRANS-2 The project owner shall obtain Determinations of No Hazard to Navigable Airspace from the Federal Aviation Administration (FAA) for U.S. Air Force Plant 42 regarding the project's transmission towers, HRSG structure, HRSG stack, combustion turbine enclosures, combustion turbine air inlet filters, combustion turbine oil skid and coolers, steam turbine generator step-up transformer, air-cooled condenser, steam-turbine generator enclosure, low-pressure steam turbine, steam-turbine building and construction crane that would penetrate Plant 42's airspace, unless the FAA determines that any of these structures are exempt from the requirements for obtaining a Determination of No Hazard to Navigable Airspace pursuant to Title 14, CFR, part 77, section 77.9 e (1).

Verification: At least 90 days prior to the construction, the project owner shall provide the CPM copies of the FAA Determinations of No Hazard to Navigable Airspace regarding the project structures identified above or FAA's Determination that a structure is exempt from the requirements for obtaining a Determination of No Hazard to Navigable Airspace and the project owner must comply with specific recommendations contained in the FAA determinations.

TRANS-3 The project owner shall comply with Caltrans and other relevant jurisdictions' limitations on vehicle sizes and weights used during construction and operation. In addition, the project owner or its contractor

shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: The project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-4 Pilot Notification and Awareness

The project owner shall initiate the following actions to ensure pilots are aware of the project location and potential hazards to aviation:

- (a) Submit a letter to the FAA requesting a Notice to Airmen (NOTAM) be issued advising pilots of the location of the power plant and recommending avoidance of overflight of the project site below 1,500 feet AGL. The letter shall also request that the NOTAM be maintained in active status until all navigational charts and Airport Facility Directories (AFDs) have been updated;
- (b) Submit a letter to the FAA requesting a power plant depiction symbol be placed at the power plant site location on the Los Angeles Sectional Chart with a notice to “avoid overflight below 1,500 feet AGL”;
- (c) Submit a request to and coordinate with the USAF Plant 42 Commander to add a new remark to the Automated Surface Observing System (ASOS) identifying the location of the power plant and advising pilots to avoid direct overflight below 1,500 feet AGL as they approach or depart the airport; and
- (d) Request the project owner to submit aerodrome remarks describing the location of the power plant and advising against direct overflight below 1,500 feet AGL to:
 1. FAA Airport/Facility Directory - Southwest U.S.;
 2. Jeppesen (Airway Manual Services - Western U.S. Airport Directory); and
 3. Airguide Pilot's Guide to California Airports.
- (e) Install one non-blinking red aviation obstruction light on each of the project's two 160-foot tall HRSG stacks, both ends of the 135-foot tall air cooled condenser, and at each corner of the power block area.

Verification: No later than 60 days prior to the start of construction, the project owner shall submit draft language for the letters of request to the FAA (including Southern California TRACON) and Plant 42 to the CPM for review and approval.

Within 60 days after CPM approval of draft language for the letter of request to the FAA (including Southern California TRACON), the project owner shall submit the required letters of request to the FAA and request that Southern California TRACON submit aerodrome remarks to the listed agencies. The project owner shall submit copies of these requests to the CPM. A copy of any resulting correspondence shall be submitted to the CPM within 10 days of receipt. The letters should request a response within 30 days which should include a timeline for implementing the suggested remarks in identified publications and designation on the chart mentioned above. If the FAA does not respond within 30 days, the project owner shall contact the CPM.⁷

TRANS-5 The project owner shall repair any damage to roadways affected by construction activity along with the primary roadways identified in the traffic control plan for construction-related traffic to the road's pre-project construction condition.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall photograph, videotape, or digitally record images of the roadways that will be affected by any underground utility connection construction and heavy construction traffic. The project owner shall provide the CPM, Chief Building Official (CBO) or delegate, and the cities of Palmdale and Lancaster with a copy of the images for the roadway segments under its jurisdiction. Also prior to start of construction, the project owner shall notify the cities about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction-related activities associated with other projects.

Within 30 days prior to the commencement of project operations, the project owner shall meet with the CBO and the cities of Palmdale and Lancaster to determine the actions necessary and schedule the repair of identified sections of public roadways and restore the right-of-way (ROW) to original or as near-original condition as possible. Following completion of any road improvements, the project owner shall provide to the CPM and CBO comment letters from the cities of Palmdale and Lancaster stating whether the work completed within public rights-of-way meets city standards. If the CPM and CBO

⁷ The Energy Commission does not have the authority to compel issuance of a NOTAM or require the FAA or U.S. Air Force Plant 42 to publish the location of or remarks regarding the project in any aviation chart or guide, or add that information to the U.S. Air Force Plant 42 ASOS.

determine that additional work is needed to meet city standards, the CPM will direct the project owner to complete the additional work.

TRANS-6 The project owner shall provide emergency access that complies with the city of Palmdale General Plan Circulation Element and requirements of the Los Angeles County Fire Department.

Verification: At least 90 days prior to the start of construction, the project owner shall provide plans to the Los Angeles County Fire Department and Palmdale Public Works Department for review and comment, and the CPM and CBO for review and approval, which demonstrate that emergency access will be provided in compliance with city of Palmdale and Los Angeles County Fire Department standards. The project owner shall provide the CPM with any comment letters received from the city of Palmdale and/or Los Angeles County Fire Department. Adequate emergency access shall be provided prior to the start of project operations.

TRANS-7 The project owner shall ensure that all necessary permits and/or licenses are secured from the U.S. Department of Transportation, California Highway Patrol, Caltrans, and the cities of Palmdale and Lancaster for the transport of hazardous materials.

Verification: The project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-8 – Deleted.

TRANS-9 – Deleted.

SOCIOECONOMICS CONDITIONS OF CERTIFICATION

SOCIO-1 Prior to the start of project construction, the project owner shall pay the one-time statutory school facility development fee to the Lancaster Elementary School District and the Antelope Valley Union High School District as required by Education Code section 17620.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide to the Compliance Project Manager (CPM) proof of payment to the Lancaster Elementary School District and Antelope Valley Union High School District of the statutory development fee.

NOISE AND VIBRATION CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one-half mile of the site and one-quarter mile of the linear facilities, by mail or 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 and include that telephone number in the above-mentioned notice. If the telephone is not staffed 24 hours per 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 telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: 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-mentioned notification has been performed and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and operation of the PEP, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

1. Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
2. Attempt to contact the person(s) making the noise complaint within 24 hours;
3. Conduct an investigation to determine the source of noise related to the complaint;
4. Take all feasible measures to reduce the noise at its source if the noise is project related; and
5. Submit a report documenting the complaint and the actions taken. The report shall include a complaint summary including final results of noise reduction efforts and, if obtainable, a signed statement by the

complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program and a statement signed by the project owner's project manager verifying that the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal/OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program and the project owner's/project manager's signed statement. The project owner shall make the program available to Cal/OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due solely to plant operation to exceed an average of 42 dBA L_{eq} measured at Measurement Location ML 1 near the residence identified as R2 in Noise and Vibration Figure 2 at page 4.6-6 of Exhibit 500, TN 213623 located at:

<https://efiling.energy.ca.gov/getdocument.aspx?tn=213623>.

No new pure-tone components may be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location acceptable to the CPM closer to the plant (e.g., 400 feet from the plant boundary), and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected residential locations to determine the presence of pure tones or other dominant sources of plant noise.

- A. When the project first achieves a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct a community noise survey at Measurement Location ML 1 or at closer locations acceptable to the CPM. This survey shall be performed during power plant operation and shall also include measurement of one-third octave band sound pressure levels to determine whether new pure-tone noise components have been caused by the project.
- B. If the results from the noise survey indicate that the power plant average noise level (L_{eq}) at Measurement Location ML 1 exceeds the above value, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.
- C. If the results from the 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 30 days of the project's first achieving a sustained output of 85 percent or greater of rated capacity. Within 15 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 limit 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 Following the project's first achieving a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified person in accordance with the provisions of California Code of Regulations, title 8, sections 5095–5099 and Title 29, Code of Federal Regulations, section 1910.95. 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 mitigation measures that will be employed to comply with the applicable California and Federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal/OSHA upon request.

CONSTRUCTION TIME RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times of day delineated below:

Monday through Friday: 6:00 a.m. to 6:00 p.m.

Haul trucks and other engine-powered equipment shall be equipped with mufflers that meet all applicable regulations. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

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.

STEAM BLOW RESTRICTIONS

NOISE-7 If a high-pressure steam blow is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 92 dBA measured at a distance of 50 feet. The project owner shall conduct steam blows only during the hours of 8:00 a.m. to 5:00 p.m.

Verification: At least 15 days prior to the first steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected and a description of the steam blow schedule.

NOISE COMPLAINT RESOLUTION FORM

Palmdale Energy Project (08-AFC-9C)
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 levels at 3 feet from noise source: _____ dBA Date: _____
Initial noise levels at complainant's property: _____ dBA Date: _____
Final noise levels at 3 feet from noise source: _____ dBA Date: _____
Final noise levels at complainant's property: _____ dBA Date: _____
Description of corrective measures taken:
Complainant's signature: _____ Date: _____
Approximate installed cost of corrective measures: \$ _____
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: _____

Attach additional pages and supporting documentation, as required.

VISUAL RESOURCES CONDITIONS OF CERTIFICATION

VIS-1 Deleted.

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-2 The project owner shall also color and finish the surfaces of all non-mirror project structures and buildings visible to the public to ensure that they: (1) minimize visual intrusion and contrast by blending with the landscape; (2) minimize glare; and (3) comply with local design policies and ordinances including special design standards for project development within a scenic highway view shed pursuant to the city of Palmdale General Plan's Environmental Resources Policy. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

The project owner shall submit a Surface Treatment Plan to the Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

- A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;
- B. A list of each major project structure, building, tank, pipe, and wall; transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number or according to a universal designation system;
- C. One set of color brochures or color chips showing each proposed color and finish;
- D. The construction of the transmission line and towers near Pearlblossom Highway shall implement special design standards (i.e. height limits) pursuant to the city of Palmdale General Plan's Environmental Resources;
- E. One set of 11" x 17" color photo simulations at life size scale of the proposed treatment for project structures, including structures treated during manufacture, from the Key Observation Points;
- F. A specific schedule for completing the treatment; and
- G. A procedure to ensure proper treatment maintenance for the life of the

project.

The project owner shall not request vendor treatment of any buildings or structures during their manufacture, or perform final field treatment on any buildings or structures, until the project owner has received Surface Treatment Plan approval by the CPM.

Verification: At least 90 days prior to specifying vendor color(s) and finish(es) for structures or buildings to be surface treated during manufacture, the project owner shall submit the proposed Surface Treatment Plan to the CPM for review and approval and simultaneously to the City of Palmdale Planning Department for review and comment. The project owner shall provide the CPM with the City's comments at least 30 days prior to the estimated date of providing paint specification to vendors.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the Surface Treatment Plan must be submitted to the CPM for review and approval.

Within 90 days after the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection, and shall submit one set of electronic color photographs from the Key Observation Points. The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify: a) the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

CONSTRUCTION LIGHTING

VIS-3 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night-lighting impacts, as follows:

- A. All lighting shall be of minimum necessary brightness consistent with worker safety and security;
- B. All fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and obtrusive spill light beyond the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries;
- C. Wherever feasible and safe and not needed for security, lighting shall

be kept off when not in use; and

- D. Complaints concerning adverse lighting impacts will be promptly addressed and mitigated.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection. If the CPM requires modifications to the lighting, the project owner shall implement the necessary modifications within 15 days of the CPM's request and notify the CPM that the modifications have been completed.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 10 days after completing implementation of the proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report following complaint resolution.

PERMANENT EXTERIOR LIGHTING

VIS-4 To the extent feasible, consistent with safety and security considerations and commercial availability, the project owner shall design and install all permanent exterior lighting such that a) light fixtures do not cause obtrusive spill light beyond the project site; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized, and e) lighting complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to the City of Palmdale Department of Public Works and Planning, Development Services Division for review and comment a Lighting Mitigation Plan that includes the following:

- A. A process for addressing and mitigating complaints received about potential lighting impacts;
- B. Lighting shall incorporate commercially available fixture hoods/shielding, with light directed downward or toward the area to be illuminated;
- C. Light fixtures shall not cause obtrusive spill light beyond the project boundary;
- D. All lighting shall be of minimum necessary brightness consistent with

operational safety and security; and

- E. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to determine the required documentation for the Lighting Mitigation Plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval, and simultaneously to the City of Palmdale Department of Public Works and Planning Development Services Division for review and comment, a Lighting Mitigation Plan. The project owner shall provide the City's comments to the CPM at least 10 days prior to the date lighting materials are ordered.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the Lighting Mitigation Plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been installed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint and a schedule for implementation. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

LANDSCAPING

VIS-5 The project owner shall provide landscaping within the 30-foot setback area between the fence line and East Avenue M/Site 1 Road. The landscaping should be consistent with the conceptual Joshua Tree and Native Desert Vegetation Preservation chapter 14.04 of the Palmdale Municipal Code (shown on **Visual Resources Figure 3B**). The

landscaping shall also comply with the city of Palmdale municipal code requirements stipulated in section 18-60.140 (Landscape Development). The project owner shall maintain the landscaping for the life of the project, including providing any needed irrigation, removing debris on an annual or semi-annual basis, and replacing dead or dying vegetation.

The project owner shall submit simultaneously to the City of Palmdale Planning Department for review and comment and to the CPM for review and approval, a landscaping plan whose proper implementation will satisfy these requirements.

The project owner shall not implement the plan until the project owner receives approval of the plan from the CPM. The planting must be completed by the start of commercial operation, and the planting must occur during the optimal planting season.

Verification: Prior to commercial operation and at least 90 days prior to installing the landscaping, the project owner shall submit the Landscaping Plan to the CPM for review and approval and simultaneously to City of Palmdale Planning Division for review and comment. The project owner shall provide the City's comments (if any) 30 days prior to the installation of the landscaping.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and city of Palmdale Planning Division a plan with the specified revision(s) for review and approval by the CPM before the plan is implemented.

The project owner shall simultaneously notify the CPM and city of Palmdale Planning Division within seven days after completing installation of the landscaping and is ready for inspection.

The project owner shall report landscape maintenance activities, including replacement of dead or dying vegetation, for the previous year of operation in each Annual Compliance Report.

PROJECT ALTERNATIVES CONDITIONS

There are no conditions for project alternatives.

**DEFINITIONS
AND
ACRONYMS**

APPENDIX B

Definitions and Acronyms

AAQS	Ambient Air Quality Standard
AVAQMD	Antelope Valley Air Quality Management District
AB	Assembly Bill
AB	Assembly Bill
AERMOD	AMS/EPA Regulatory Model
AFC	Application for Certification
AFY	Acre Feet per Year
APCO	Air Pollution Control Officer
AQCMM	Air Quality Construction Mitigation Manager
AQCMP	Air Quality Construction Mitigation Plan
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
BACT	Best Available Control Technology
Btu	British Thermal Unit
CA ISO	California Independent System Operator
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEPA	California Environmental Protection Agency
CCCC	California Climate Change Center
CCGT	Combined Cycle Gas Turbine
CCR	California Code of Regulations
CEC	California Energy Commission (or Energy Commission)
CEMS	Continuous Emission Monitoring System
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH ₄	Methane
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CO ₂ E	Carbon Dioxide Equivalent
CPM	(CEC) Compliance Project Manager
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources

Degrees F	Degrees Fahrenheit
DSCFM	Dry Standard Cubic Feet per Minute
EIR	Environmental Impact Report
EPS	Emission Performance Standard
ERC	Emission Reduction Credit
FDOC	Final Determination of Compliance
FSA	Final Staff Assessment
GCC	Global Climate Change
GHG	Greenhouse Gas
gr/scf	Grains per Standard Cubic Foot (7,000 grains = 1 pound)
GWh	Gigawatt-hour
GWP	Global Warming Potential
H ₂ S	Hydrogen Sulfide
HFC	Hydrofluorocarbons
HSC	Health and Safety Code
IEPR	Integrated Energy Policy Report
IPCC	Intergovernmental Panel on Climate Change
lb/mmscf	Pounds per Million Standard Cubic Feet
lbs	Pounds
LCA	Local Capacity Area
LLC	Limited Liability Company
LORS	Laws, Ordinances, Regulations and Standards
LTPP	Long-term Procurement Planning
MCR	Monthly Compliance Report
mg/m ³	Milligrams Per Cubic Meter
MMBtu/hr	Million British Thermal Units per Hour
MT	Metric tones
MTCO ₂ E	Metric Tons of CO ₂ -Equivalent
MW	Megawatts (1,000,000 Watts)
MWh	Megawatt-hour
N ₂ O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission

NO	Nitric Oxide
NO ₂	Nitrogen Dioxide
NOx	Oxides of Nitrogen or Nitrogen Oxides
NSPS	New Source Performance Standard
NSR	New Source Review
O ₂	Oxygen
O ₃	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OTC	Once-Through Cooling
PHPP	Palmdale Hydrogen Power Plant
PEP	Palmdale Energy Project
PDOC	Preliminary Determination of Compliance
PFC	Perfluorocarbons
PM	Particulate Matter
PM10	Particulate Matter less than 10 microns in diameter
PM2.5	Particulate Matter less than 2.5 microns in diameter
ppm	Parts Per Million
ppmv	Parts Per Million by Volume
ppmvd	Parts Per Million by Volume, Dry
PSA	Preliminary Staff Assessment
PSD	Prevention of Significant Deterioration
PTA	Petition to Amend
PTC	Permit to Construct
PTE	Potential to Emit
PTO	Permit to Operate
PVMRM	Plume Volume Molar Ratio Method
RECLAIM	Regional Clean Air Incentives Market
RPS	Renewables Portfolio Standard
SB	Senate Bill
scf	Standard Cubic Feet
SCGT	Simple Cycle Gas Turbine
SF ₆	Sulfur Hexafluoride
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
SO ₄	Sulfate

SOx	Oxides of Sulfur
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
tpy	Tons per year
U.S. EPA	United States Environmental Protection Agency
VMT	Vehicle Miles Traveled
VOC	Volatile Organic Compounds
WCI	Western Climate Initiative

EXHIBIT LIST

APPENDIX C



Exhibit List

Docket: 08-AFC-09C

Project Title: Palmdale Energy Project (Formerly Palmdale Hybrid Power Plant) - Compliance

Generated On: 8/22/2017 5:01:04 PM

↑ Exhibit Number	Document Title and Description	Disposition
1	TN # 204459 Palmdale Energy, LLC's Petition for Amendment	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
2	TN # 205394-1 Palmdale Energy Project Revised Petition to Amend	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
3	TN # 205394-2 Palmdale Energy Project RPTA Section 2 & 3 Figures	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
4	TN # 205394-3 Palmdale Energy Project RPTA Section 4 & 6 Figures Maps and photographs	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
5	TN # 205450 RPTA Figure 2-7b Revised Replacement figure for PEP RPTA Figure 2-7b.	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
6	TN # 205520 RPTA Appendices *** Appendices received on 07/20/15 ***	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
7	TN # 206025 Palmdale Energy LLC's Preliminary Drainage, Erosion, and Sediment Control Plan	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
8	TN # 206335 Palmdale Energy LLC's Supplemental Cumulative Air Quality Impact Analysis Report	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
9	TN # 206378 Applicant's Responses to Socioeconomic and Alternatives Inquiry responses to informal questions from Energy Commission staff about Palmdale Energy Project for Socioeconomics and Alternatives	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
10	TN # 206386 Palmdale Energy LLC's Supplemental Cumulative AQ Impact Analysis Report - AQ Modeling Files	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
11	TN # 206512 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No. 1 (1-13) - Appendices DR-2 & DR-3 The two CD's are in the Docket Unit containing air quality modeling files	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
12	TN # 206521-1 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) *** THIS DOCUMENT IS REPLACED BY TN 206523-1 ***	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.

13	TN # 206521-2 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 1)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
14	TN # 206521-3 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 2)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
15	TN # 206521-4 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 3)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
16	TN # 206521-5 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 4)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
17	TN # 206521-6 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 5)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
18	TN # 206521-7 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 7)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
19	TN # 206523-1 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) *** THIS DOCUMENT SUPPLEMENTS TN 206521-1 *** - THIS DOCUMENT IS PART OF APPENDICES FILED UNDER TN 206521-2 through TN 206521-7	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
20	TN # 206523-2 Palmdale Energy LLC's Response to City of Lancaster Data Request Set No.1 (1-13) DR-5 (Part 6) THIS DOCUMENT IS PART OF APPENDICES FILED UNDER TN 206521-2 through TN 206521-7	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
21	TN # 206651 Palmdale Energy LLC's Presentation for 11/16/15 Site Visit, Scoping Meeting & Informational Hearing	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
22	TN # 206797 Palmdale Energy LLC's Response to CEC Staff Data Request Set No.1 (1-63)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
23	TN # 206914 Palmdale Energy LLC's Response to CEC Staff Data Request Set No.2 (64)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
24	TN # 206928 Palmdale Energy LLC's Response to CEC Staff Data Request Set One (1-63) Air Quality Modeling Files CD's containing Air Modeling Files are located in the Docket Unit	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
25	TN # 207318 Palmdale Energy LLC's Supplemental Response to Data Request 32, Off-site Ammonia Consequence Analysis	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
26	TN # 208550 Palmdale Energy LLC's Supplemental Response to CEC Staff Data Request 62	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
27	TN # 210130 Palmdale Energy LLC's Preliminary Fire Protection Plan in Response to CEC Staff Data Request 61	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
28	TN # 210166 Palmdale Energy LLC's Responses to Workshop Queries (1-8) In support of the Petition to Amend	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
29	TN # 210167 Antelope Valley Air Quality Management District's Preliminary Determination of Compliance for Palmdale Energy Project	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
30	TN # 210171	Offered by Applicant (Palmdale Energy LLC); Admitted on

	Palmdale Energy LLC's Supplemental Response to California Energy Commission Staff Data Request 55 and 58	3/22/2017.
31	TN # 210183 Palmdale Energy LLC's Response to CEC Staff Data Request Set No.3 (65-68)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
32	TN # 210185 Palmdale Energy LLC's Supplemental Response to CEC Staff Data Request 46	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
33	TN # 210321 Rule 1406 PERC Data Collection Protocol for the Palmdale Energy Project Paving Emissions Reduction Credits Protocol	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
34	TN # 210363 Letter from SoCal Gas Regarding Gas Sulfur Content	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
35	TN # 210410 Palmdale Energy LLC's Response to WSQ-2 Typical Filter House Evaporative Cooler Assembly Diagram	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
36	TN # 210587 Palmdale Energy LLC's Revised Paved ERC Data Collection Protocol	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
37	TN # 210594 Palmdale Energy LLC's Revised Supplemental Response to California Energy Commission Staff Data Request 55 and 58	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
38	TN # 210610 Palmdale Energy LLC's Revised Transmission System Engineering Drawings	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
39	TN # 210662 Palmdale Energy response to Transmission system equipment rating questions Response from Thomas Johns with Summit Power to transmission staff question about Palmdale system hardware ratings	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
40	TN # 210693 Project Owner Responses to miscellaneous inquiries from air quality staff Palmdale Energy, LLC responses to Air Quality staff inquiries on March 10, 2016	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
41	TN # 210783 Palmdale Energy LLC's Revised One-Line Drawing No. A01 Revision E	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
42	TN # 210797 Palmdale Energy LLC's Revised Supplemental Response to California Energy Commission Staff Data Request 55	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
43	TN # 211045 Palmdale Energy LLC's Initial Comments on the Preliminary Staff Assessment	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
44	TN # 211168 Palmdale Energy Project Subpart TTTT Compliance Calculations	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
45	TN # 211174 Palmdale Energy LLC's Revised Emissions Offset Package	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
46	TN # 211264 Palmdale Energy LLC's Final Comments on the Preliminary Staff Assessment	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
47	TN # 211451 Antelope Valley Air Quality Management District's Preliminary Determination of Compliance - Rev A for Palmdale Energy Project	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
48	TN # 211479-1 Preliminary ERC RACT Review for the Palmdale Energy	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.

	Project	
49	TN # 211479-2 Preliminary ERC RACT Review for the Palmdale Energy Project - AVAQMD RACT Matrix Excel spreadsheet	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
50	TN # 211488 Antelope Valley Air Quality Management District Road Paving Protocol Approval for Palmdale Energy Project	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
51	TN # 211662 Palmdale Energy LLC Air Cooled Condensers Plume Analysis	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
52	TN # 212458 Antelope Valley Air Quality Management District's Final Determination of Compliance	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
53	TN # 212922 Antelope Valley Air Quality Management District's Revised Final Determination of Compliance	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
54	TN # 213215 Proposed Offsets for PEP, July 6, 2016 Proposed emission reduction credits (offsets) for Palmdale Energy Project (PEP)	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
55	TN # 214567 Palmdale Energy, LLC's Plume Vertical Velocity Assessment for the Air Cooled Condensers	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
56	TN # 215189 Palmdale Energy LLC's Opening Testimony	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
57	TN # 216277 Email from J. Cagle Regarding Air Force Plant 42	Offered by Applicant (Palmdale Energy LLC); Admitted on 3/22/2017.
58	TN # 216372 Palmdale Energy LLC's Prehearing Conference Statement	Offered by Applicant (Palmdale Energy LLC); WITHDRAWN.
500	TN # 213623 Final Staff Assessment	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
501	TN # 215118 Palmdale Energy Project Traffic and Transportation Supplemental Testimony Palmdale Energy Project (PEP), supplemental testimony, plus appendices and figure, dated December, 2016	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
502	TN # 216180 Energy Commission Staff's Response to Palmdale Energy, LLC's Opening Testimony	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
505	TN # 216354 Additional Staff Declarations Declaration of Alvin Greenberg, James Adams, Edward James Brady and Nancy Fletcher	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
506	TN # 216419 Declaration of Christopher Dennis, P.G., C. Hg.	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
507	TN # 216587 Biological Resources Supplemental Testimony, Palmdale Energy Project ***THIS DOCUMENT SUPERSEDES TN 216576***	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
508	TN # 217537 Palmdale Energy Project Compendium of Conditions, May 10, 2017 Palmdale Energy Project (PEP) Final Compendium of Conditions of Certification, dated May 10, 2017	Offered by Commission Staff (Staff); Admitted on 3/22/2017.
509	TN # 216646 Eric Knight Declaration and Resume for Bio Resources Resume and declaration	Offered by Commission Staff (Staff); Admitted on 3/22/2017.

PROOF OF SERVICE

APPENDIX D



Proof of Service List

Docket: 08-AFC-09C

Project Title: Palmdale Energy Project (Formerly Palmdale Hybrid Power Plant) - Compliance

Generated On: 8/22/2017 5:11:52 PM

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PAVING EMISSIONS REDUCTION CREDITS PROTOCOL

APPENDIX E

District Rule 1406

Paving Emissions Reduction Credits Protocol

Palmdale Energy Project

Palmdale, California

Submitted to

Antelope Valley Air Quality Management District

Submitted by

Palmdale Energy, LLC

Prepared by

Atmospheric Dynamics, Inc.



February 2016



INTRODUCTION AND PROJECT DESCRIPTION

Palmdale Energy, LLC proposes to construct, own, and operate the Palmdale Energy Project (PEP or Project). The PEP will consist of a natural gas-fired combined-cycle design to be developed on an approximately 50-acre site in the northern portions of the City of Palmdale (City). The combined-cycle equipment will utilize two (2) Siemens SCC6-5000F natural gas-fired combustion turbine generators (CTG), two heat recovery steam generators (HRSG) with supplemental duct firing, one (1) steam turbine generator (STG), one (1) auxiliary boiler, and support equipment.

The Project is designed to provide flexible capacity within the CAISO and will have a nominal electrical output of 660 megawatts (MW). Commercial operation is planned for the summer of 2019. The design and location of the proposed PEP would serve to complement electrical generation needs for flexible resource support.

The project will require a AVAQMD Regulation XIII New Source Review (NSR) permit, as specified under Rules 1300-1320. Currently, the AVAQMD air basin is federal and State attainment/unclassified for NO₂, SO₂, PM2.5, and CO. The area is in attainment for the federal PM10 standards, but nonattainment for the 8-hour ozone (O₃) standard. It is also State non-attainment for PM10 and O₃ standards. Based on the project emissions, the new facility will be a major new stationary source per AVAQMD New Source Review (NSR) Regulation XIII.

AVAQMD Regulation XIII, NSR Rule 1302, provides the requirements at which emission levels the offset calculations must be done and thresholds over which emissions must be offset. It also defines which pollutants must be offset, what ratios must be used, and the criteria of what can be used as an emission reduction credit (ERC). If a project meets the requirements of these rules, then the mitigation (i.e., ERC) can be considered to be completely effective since the program has been developed to ensure eventual attainment of the AAQS.

The purpose of this protocol is to provide the AVAQMD with sufficient information to identify the sources of Paving Emissions Reduction Credits (PERCs) in order to voluntarily pave a series of unpaved public roads in order to generate PM10 emission credits. This protocol will outline the methods for data collection and analysis in order to perform the calculations as specified in Rule 1406.

Once the data has been collected and analyzed, an application for PERCs will be submitted to the AVAQMD which will contain all information as required by District Rule 1402 (B)(1)(b).

PM10 and PM10 Precursor (SO_x) Offsets

The District is attainment for the federal PM10 standard. Therefore, there is no regulatory requirement, that the applicant is aware of, that requires the adoption of a PM10 plan, road paving rule, or any other preparatory regulatory action prior to responding to an ERC application for emission reductions resulting from the paving of an existing unpaved road. For the same reason, USEPA approval is not required for any District action involving PM10 credits (1305(B)(3)(d)). Furthermore, the District is attainment for both the federal and state PM2.5 standards, and therefore the PEP is not required to offset its PM2.5 emissions pursuant to the



District rules. Based on Rule 1302 and the California Environmental Quality Act (CEQA), the project will need to generate the following ERCs listed in Table 1.

Table 1 PM10 and SO₂ Offsets

OFFSETS/MITIGATION PROPOSED FOR PEP Emission Reduction Credits - TPY			
	PM ₁₀		SO ₂
AVAQMD Offset Trigger Thresholds	15		25
Facility PTE ¹	81.01		11.39
AVAQMD Offset Ratio	1:1		1:1
Total Offsets Required	81.01		11.39*

¹ Values derived from Section 4.1 of the AVAQMD Application Package
* While rule 1302 does not require SO₂ ERCs, SO₂ contributes to PM10 and will be mitigated under CEQA.

The PEP will propose to pave certain roads located within the air basin in order to generate PM10 PERCs, which will mitigate emissions of PM10 and SO_x and satisfy the State air quality requirements and CEQA. Thus, the total PM10 mitigation package would be for 81.01 tons per year of PM10 and 11.39 tons per year of SO₂, for a total PERC quantity of 92.4. In the current permit application package submitted to the AVAQMD and the CEC, ten (10) existing unpaved road segments were identified, totaling approximately 22 miles as listed in Table 2. From these ten (10) initial road segments, a subset of four (4) were selected for potential paving activities and are listed in Table 3. If additional roadway segments are needed, then additional roads from Table 2 will be assessed.

Table 2 Initial Road Segments

Street Segment	From	To	Jurisdiction	Street Type	Segment Length (Mi.)	ROW Req.	Segment Footprint (Acre)
Ave. B	90th Street W	30th Street W	L.A. County	County Road	Approx. 6.0	40 Ft.	29.1
Ave. S-2	96th Street E	106th Street E	L.A. County	County Road	Approx. 1.0	40 Ft.	4.85
110th Street E	Ave. L	Columbia Way / Avenue M	City of Palmdale	Secondary Arterial	Approx. 1.0	92 Ft.	11.15
40th Street W	Ave. N	Ave N-8	L.A. County	County Road	Approx. 0.5	40 Ft.	1.94
Ave. Q	90th Street E	110th Street E	City of Palmdale	Secondary Arterial	Approx. 2.0	92 Ft.	22.3
Ave. S-6	96th Street E	106th Street E	L.A. County	County Road	Approx. 1.0	40 Ft.	4.85
Ave. T-10	87th Street E	96th Street E	L.A. County	County Road	Approx. 1.0	40 Ft.	4.85



Ave. N-8	Bolz Ranch Road	30th Street W	City of Palmdale	Local Interior St.	Approx. 1.5	60 Ft.	10.91
Ave. G	90th Street E	120th Street E	L.A. County	County Road	Approx. 3.0	40 Ft.	9.70
Carson Mesa Road	El Sastre	Vincent View Road	L.A. County	County Road.	Approx. 1.85	40 Ft.	8.24

Completion of the road paving activities will be prior to the commencement of start of construction to the project. Road paving activities will not coincide with facility construction.

PM10 Source Characterization

Particulate emissions occur whenever vehicles travel on unpaved roads. Many industrial areas also have active unpaved roads. When a vehicle travels an unpaved road, the force of the wheels on the road surface causes pulverization of surface material. Particles are lifted and dropped from the rolling wheels, and the road surface is exposed to strong air currents in turbulent shear with the surface. The turbulent wake behind the vehicle continues to act on the road surface after the vehicle has passed.

The emission of concern from unpaved roads is particulate matter (PM) including PM less than 10 microns in aerodynamic diameter (PM-10) and PM less than 2.5 microns in aerodynamic diameter (PM-2.5). The quantity of dust emissions from a given segment of unpaved road varies linearly with the volume of traffic. The emissions depend on correction parameters that characterize the condition of a particular road and the associated vehicle traffic. Parameters of interest in addition to the source activity (number of vehicle passes) include the vehicle characteristics (e.g., vehicle weight), the properties of the road surface material being disturbed (e.g. silt content, moisture content), and the climatic conditions (e.g., frequency and amounts of precipitation).

Dust emissions from unpaved roads have been found to vary directly with the fraction of silt in the road surface material. Silt consists of particles less than 75 μm in diameter, and silt content can be determined by measuring the proportion of loose dry surface dust that passes through a 200-mesh screen, using the ASTM-C-136 method.

PM10 Emission Calculation Equation

The form of the AVAQMD PM10 emission calculation, which is based on Equation 1 in AP-42 (Chapter 13.2.2 Unpaved Roads) is of the form for vehicles traveling on publicly accessible roads dominated by light duty vehicles:

$$E_u = \frac{K \left(\frac{s}{12}\right)^a \left(\frac{S}{30}\right)^d}{\left(\frac{M}{0.5}\right)^c}$$

where:



E_u = the unpaved road PM10 emission factor with units of pounds per vehicle mile traveled

k = empirical constant (1.8 for PM10) for units of lbs per VMT

s = the surface material silt content in percent (default value of 6.2 for gravel roads and 11.0 for non-gravel roads)

a = empirical constant (1 for PM10)

S = the mean vehicle speed with units of miles per hour (default value 20 mph for all unpaved roads)

d = empirical constant (0.5 for PM10)

M = surface material moisture content in percent (default value 1)

c = empirical constant (0.2 for PM10)

Due to rainfall or other precipitation, the above equation can be adjusted to reflect average uncontrolled conditions (but including natural mitigation) under the simplifying assumption that annual average emissions are inversely proportional to the number of days with measurable (more than 0.254 mm [0.01 inch]) precipitation:

$$E_{ext} = E \left[\frac{365 - P}{365} \right]$$

where:

E_{ext} = annual size specific emission factor extrapolated for natural mitigation, lb/VMT

E = emission factor from Equation 1

P = number of days in a year with at least 0.01 inches of precipitation

The equations above shall be used to determine the PM10 emission factor (in terms of pounds per VMT) for each roadway segment in an unpaved and paved condition. Where allowed, non-default values shall be used to calculate PM10 emission factors as discussed below and will be obtained in accordance with Section (F) of the Rule.

The annual quantity of PM10 emissions emitted from each Roadway Segment shall be calculated by multiplying the PM10 emission factor by the annual VMT for each Roadway Segment as determined pursuant to subsection (C)(2) of the Rule. The PM10 emission reductions associated with paving an unpaved roadway segment will be calculated as the difference, in tons per year, between the emissions from the road in the unpaved condition and the emissions from the road in the paved condition. In accordance with Rule 1406, vehicle exhaust, brake wear and tire wear emissions will be ignored for purposes of this calculation.

PERC Source Generation Plan

The following subsections provide information which will be obtained and measured in order to quantify emissions of PERCs. While the AVAQMD provides for default values for vehicle speeds,



silt content and surface material moisture content, site specific conditions at each of the proposed roadway segments will be measured and quantified in accordance with Section F of the AVAQMD Rule 1406.

Determination of Vehicle Miles Traveled

Table 3 shows the proposed sub-set of road segments that are identified for determination of vehicle miles traveled (VMT). The VMT will be calculated using at least seven (7) consecutive measurement periods for each roadway segment as follows:

- Each measurement period (traffic count) shall measure vehicular traffic over a minimum of 24 hours.
 - For averaging within a traffic count, vehicular traffic shall be considered zero (0) for each hour not monitored continuously during any given 24-hour period.
- Traffic counts shall be conducted on non-holiday weekdays and weekends.
- Separate traffic counts will be made for each segment. A segment is identified as a length of road between cross streets.
- The VMT for each roadway segment shall be calculated by multiplying the time weighted average of seven (7) separate traffic counts for that roadway segment by the roadway segment's length in miles to the nearest 0.1 of a mile.

Table 3 Proposed Road Segments

Segment	From	To	Jurisdiction	Street Type	Segment Length (Miles)	ROW Req.	Segment Footprint (Acre)	Distance From PEP (Miles)	Number of Segments for each Traffic Count
Ave S-6	96 th Street E	110 th Street E	City of Palmdale	County Road	Approx. 1.0	40 ft.	4.85	10.5	5
Ave T-10	87 th Street E	96 th Street E	City of Palmdale	County Road	Approx. 1.0	40 ft.	4.85	10.8	5
Ave S-2	96 th Street E	106 th Street E	LA County	County Road	Approx. 1.0	40 ft.	4.85	10.25	5
40 th Street. W	Ave N	Ave N-6	LA County	County Road	.5	40 ft.	1.94	5.5	9

Figures 1 through 3 presents the locations and segment lengths for each of the proposed roads identified in Table 2.

Silt Content Analyses

The roadway segment surface material silt content will be determined by using collection and analysis methodologies as specified in Appendices C.1 and C.2 of USEPA AP-42 "Compilation of Air Pollutant Emission Factors" – Fifth Edition. Specifically, Appendix C.1 summarizes the



procedures for sampling while Appendix C.2 provides for the laboratory procedures to analyze the data collected in accordance with C.1.

Sampling Analysis Frequency

The overall objective in an unpaved road sampling program is to inventory the mass of particulate matter (PM) emissions from the roads. This is typically done by:

1. Collecting "representative" samples of the loose surface material from the road;
2. Analyzing the samples to determine silt fractions and moisture content; and
3. Using the results in equation (1) of AP-42, Section 13.2.2, Unpaved Roads, together with traffic data (e.g., number of vehicles traveling the road each day).

Based on the overall study area and that the average length of roadway to be sampled will be less than three (3) miles in length, we would propose that the sampling frequency of silt/moisture content be taken at 0.5 mile intervals (or portion thereof) for each major road segment. Major road segment is defined here as the length of road between intersections with other either paved or unpaved roads. Thus, for a road segment that is 0.6 miles in length, two (2) samples will be taken.

If a longer road is identified for analysis, in that it is longer than three (3) miles in length, then the composite sampling method will be used, as identified in Appendix C.1. Here, a minimum of three incremental samples will be taken with the first sample at the first 0.5-mile segment with additional increments taken from each remaining 0.5-mile length of road up to a maximum length of three (3) miles.

Sample Collection Method

Following the procedures in Appendix C.1, the following collection method will be used to obtain samples of roadway material:

1. Using string or other suitable markers, mark a 0.3 meters (m) (1 foot [ft]) wide portion across the road. The collection area will not be marked with a chalk line or in any other method likely to introduce fine material into the sample.
2. With a whisk broom and dustpan, remove the loose surface material from the hard road base. The base will not be abraded during sweeping. Sweeping will be performed slowly so that fine surface material is not injected into the air. The material will be collected only from the portion of the road over which the wheels and vehicles routinely travel (i.e., not from berms or any "mounds" along the road centerline).
3. The swept material will be periodically deposited into a clean, labeled container of suitable size, such as a metal or plastic 19 liter (L) (5 gallon [gal]) bucket, having a sealable polyethylene liner. Increment samples may be mixed within this container.
4. Record the required information on the sample collection sheet as provided in Appendix C.1 in figure C.1-2.



Sample Sizes

For unpaved roads that are uncontrolled and don't use chemical stabilizers, a sample of 10 to 50 pounds will be taken and split into smaller samples for analysis, following the procedures in Appendix C.2. For unpaved roads that do utilize some type of chemical stabilizer, a minimum of one (1) pound of material will be collected, in accordance with Appendix C.1.

Submittal to AVAQMD

The final application submittal package will contain all the information required by District Rule 1402 (B)(1)(b). This will include:

1. The name, address and telephone number of a responsible official for the applicant (the responsible official will be the addressee of all official correspondence regarding the application and PERCs);
2. The name and telephone number of a contact person for inquiries regarding the application and PERCs, if different than the responsible official;
3. Information identifying the particular new or modified facility or emissions unit requiring PM10 offsets pursuant to District Regulation XIII – *New Source Review*.
4. Information sufficient to identify the source of the proposed PERCs, and the PM10 Attainment Status Designation;
5. Information sufficient to allow the calculations specified in this rule to be performed;
6. A statement from the applicant that the unpaved road(s) will be paved according to state or local government paving standards, as applicable;
7. A letter or agreement from the appropriate state or local government stating that each Roadway Segment:
 - a) Has been inspected;
 - b) Has been described as being either gravel- or non-gravel surfaced;
 - c) Will be adopted into the state or local transportation network, if not already part of the network; and,
 - d) Will be maintained.
8. A statement from the applicant indicating that any necessary environmental review for the paving of each Roadway Segment required pursuant to the California Environmental Quality Act (CEQA) has been performed. Applicant shall provide a copy of such CEQA review upon District request.
9. Fees in accordance with District requirements.



Figure 1
West Ave N-8 from 45th St W to Tournament Dr



Figure 2
East Ave's S-2 & S-6 from 96th St E to 106th St E

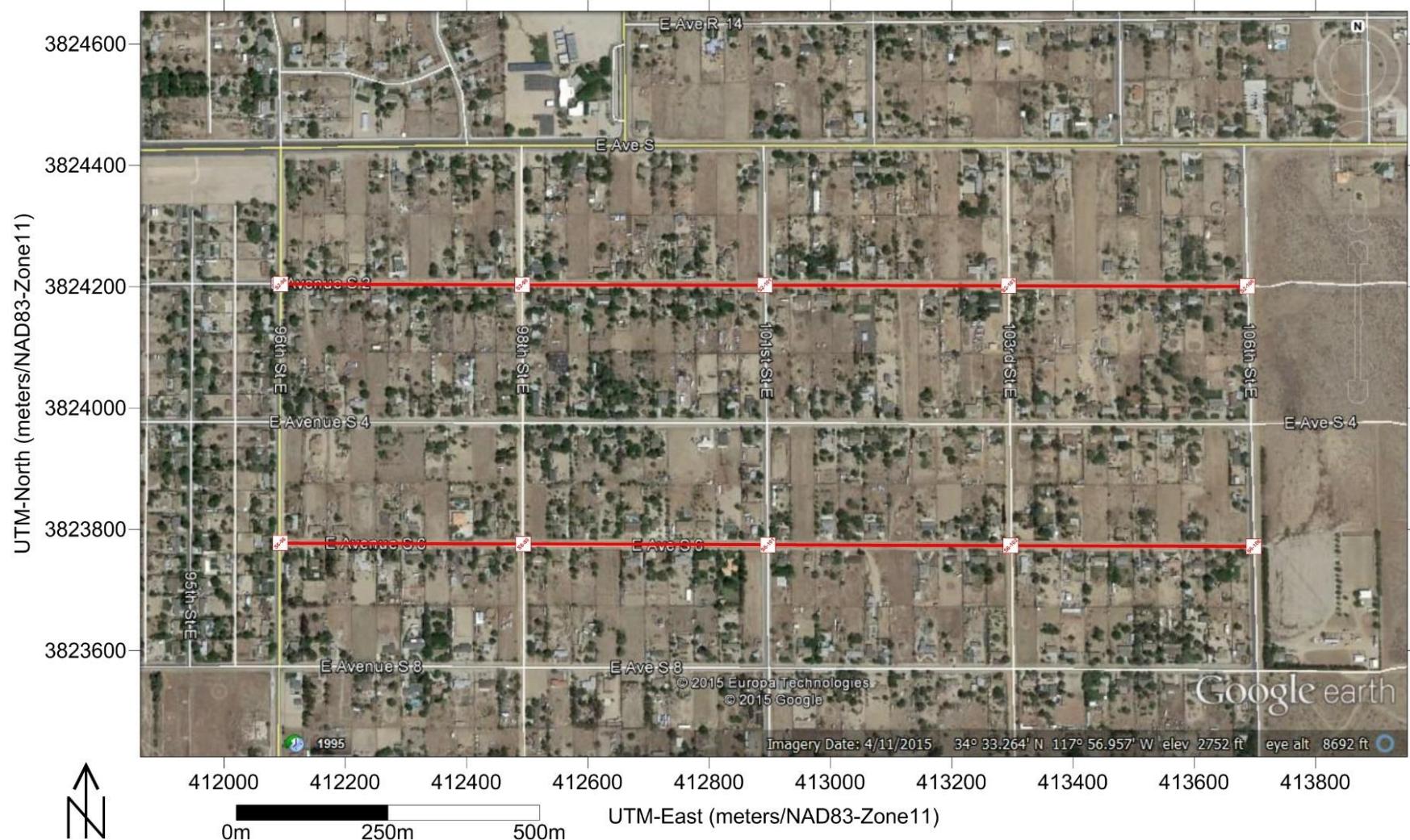


Figure 3
East Ave T-10 from 87th St E to 96th St E

