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STANTON ENERGY RELIABILITY CENTER

PRESIDING MEMBER'S PROPOSED DECISION

CALIFORNIA
ENERGY COMMISSION
Edmund G. Brown Jr, Governor

October 2018
CEC-800-2018-002-PMPD

DOCKET NUMBER 16-AFC-01

CALIFORNIA
ENERGY COMMISSION
1516 Ninth Street
Sacramento, CA 95814

16-AFC-01 (Application for Certification)

COMMISSIONERS-

JANEA A. SCOTT
Commissioner, Presiding Member

KAREN DOUGLAS
Commissioner, Associate Member

KENNETH D. CELLI
Hearing Officer

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
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The Committee hereby submits its Presiding Member's Proposed Decision for the Stanton Energy Reliability Center (Docket Number 16-AFC-01). We have prepared this document pursuant to the requirements set forth in the Commission's regulations.[1]

The Committee recommends that the Application for Certification be approved, subject to the Conditions of Certification set forth in **Appendix A**, and that the Energy Commission grant the project owner a license to construct and operate the project.

Dated: October 5, 2018, at Sacramento, California.

ORIGINAL SIGNED BY:

JANEA A. SCOTT
Commissioner and Presiding Member
Stanton Energy Reliability Center

ORIGINAL SIGNED BY:

KAREN DOUGLAS
Commissioner and Associate Member
Stanton Energy Reliability Center

[1] 20 Cal. Code Regs., § 1745.5.

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I. INTRODUCTION

SUMMARY OF THE DECISION

This Decision contains the California Energy Commission's (Energy Commission) rationale in determining that the proposed Stanton Energy Reliability Center (SERC) will, as mitigated, have no significant impacts on the environment and comply with all applicable laws, ordinances, regulations, and standards (LORS). This Decision is based exclusively upon the hearing record established during this certification proceeding and summarized in this document. The Committee[1] has independently evaluated the evidence, cited to references in the record[2] supporting our findings and conclusions, and specified the measures required to ensure that the SERC is designed, constructed, and operated in the 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 is considering this Application for Certification (AFC) under a review process established by Public Resources Code, sections 25500 and California Code of Regulations, title 20, section 1200. A license issued by the Energy Commission is in lieu of other state and local permits.

BACKGROUND

On October 26, 2016, Stanton Energy Reliability Center, LLC (Applicant), filed an AFC to construct and operate the SERC, a 98-megawatt (MW) hybrid electrical generating and battery energy storage facility at 10711 Dale Avenue, Stanton, Orange County, California.[3] At its March 8, 2017 Business Meeting, the Energy Commission determined the AFC to be complete and designated a committee of two commissioners (Committee) to conduct proceedings on the AFC.

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[1] The Energy Commission appointed a Committee consisting of Janea A. Scott, Commissioner and Presiding Member, and Karen Douglas, Commissioner and Associate Member, at its March 8, 2017 Business Meeting. (TN 216497.)

[2] The Reporter's Transcripts of the evidentiary hearings are cited as "date of hearing, RT page __: line __." For example: 10/1/16 RT 77:16. The exhibits included in the evidentiary record are cited as "Ex. number." For example: Ex. 123. A list of all exhibits is contained in **Appendix A** of this Decision.

[3] All documents filed in this AFC proceeding can be found at https://efiling.energy.ca.gov/Lists/DocketLog.aspx?docketnumber=16-AFC-01. The AFC is contained in transaction numbers (TN) TN 214206-1 through TN 214206-27 and TN 214207-1 through TN 214207-37. All exhibits received into evidence at the evidentiary hearing can be found at https://efiling.energy.ca.gov/Lists/ExhibitList.aspx?docketnumber=16-AFC-01

The SERC site is located in an industrial area that is zoned Industrial General (City of Stanton IG zoning district). The site is bordered by Dale Avenue to the east, a Union Pacific Railroad line to the south, and Pacific Street/Fern Avenue to the northwest. The site is 3.978 acres in size and is rectangular in shape -- approximately 130 feet by 1,300 feet, with the long side parallel to the Union Pacific Railroad line. The Stanton Storm Channel bisects the project site from north to south. The property east of the storm channel is 1.764 acres and is undeveloped, while the property west of the storm channel is 2.214 acres, paved, and currently used for vehicle and equipment storage.

Land uses surrounding the SERC site include the City of Stanton's industrial area to the north and south, Southern California Edison's (SCE) Barre Peaker power plant and Barre Substation to the east, and high- and medium-density residential uses to the southeast and northwest.[4]

The SERC project is comprised of two simple-cycle generating facilities consisting of two General Electric (GE) LM6000 hybrid enhanced gas turbine (Hybrid EGT™) systems. The Hybrid EGT™ combines a combustion gas turbine with an integrated battery storage component operated by a proprietary software system developed by GE based upon Wellhead's patent. The integrated system will be capable of providing synchronous condensing, greenhouse gas-free spinning reserve, high speed regulation, primary frequency response, and voltage support with the combined response of the gas turbine and battery storage system.

The SERC project will interconnect to SCE's Barre Substation via a 0.35-mile-long underground generator tie-line that runs from the SERC project site east to the substation.[5] The natural gas pipeline will connect to the site via a new pipe that will extend 2.75 miles along Dale Avenue, north to Southern California Gas' Line 1014 in La Palma Avenue.[6]

Temporary construction laydown and parking facilities (2.89 acres total) will include an approximate 0.7-acre worker parking area at the Bethel Romanian Pentecostal Church, located at 10801 Dale Avenue, about 350 feet south of the proposed project site. The construction laydown area for the gas-fired power plant will be on the western part of the site. This is also the proposed site of the battery energy storage system, which will be constructed after the gas turbines are complete.[7]

Process and potable water will be supplied by Golden State Water Company via existing water supply pipelines in Dale Avenue and Pacific Street. A will-serve

[4] Ex. 300, p. 3-1.
[5] Ex. 7, p. 2-28.
[6] Ex. 7, p. 2-14 and Ex. 92, p.2.
[7] Ex. 300, p. 3-2.

letter from Golden State Water Company shows that the water will be available for use at the maximum quantity needed, which is estimated to be 34 acre-feet per year.[8]

The Applicant filed their AFC under the Energy Commission's 12-month licensing process. If approved, construction is proposed to begin by November 2018 with pre-operational testing of the power plant estimated to begin by September 2019, and full-scale commercial operation to begin by December 2019.[9]

For more details about the SERC project, please see the **PROJECT DESCRIPTION** section of this Decision.

PROJECT CERTIFICATION PROCESS

The SERC and its related facilities are subject to Energy Commission licensing jurisdiction.[10] During certification proceedings, the Energy Commission acts as the lead state agency under the California Environmental Quality Act (CEQA).[11] The Energy Commission's regulatory process, including the evidentiary record and associated analyses, are functionally equivalent to the preparation of an Environmental Impact Report pursuant to CEQA.[12] The process is designed to be completed within a specified time period when the required information is submitted in a timely manner.

The Energy Commission's certification 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 ramifications.

The Energy Commission's process allows for and encourages public participation so that members of the public may become involved either informally or on a formal level as intervenor parties who have the opportunity to present evidence and cross-examine witnesses. The Energy Commission also has a Public Adviser who is available to assist the public with participating in all aspects of the certification proceeding.

The process begins when an Applicant submits an AFC. Energy Commission staff (Staff) reviews the data submitted as part of the AFC and makes a

[8] Ex. 300, pp. 3-3 – 3.4.
[9] Ex. 300, p. 3-11.
[10] Pub. Res. Code, § 25500 et seq.
[11] Pub. Res. Code, §§ 25519(c), 21000 et seq.
[12] Pub. Res. Code, § 21080.5.

recommendation to the Energy Commission[13] on whether the AFC contains adequate information to begin the certification process. After the Energy Commission determines an AFC contains sufficient analytical information and deems it "data adequate," it appoints a Committee of two Commissioners to conduct the formal certification process. This process includes public conferences and Evidentiary Hearings, through which the evidentiary record is developed and becomes the basis for the Presiding Member's Proposed Decision (PMPD). The PMPD determines a project's environmental impact and conformity with applicable laws, ordinances, regulations, and standards (LORS) and provides recommendations to the Energy Commission.

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

- The Committee will hold an informational hearing, a site visit, and conferences.
- Staff publishes an issues identification report.
- Individuals or groups may petition the Committee to be intervenors.
- Staff and intervenors issue data requests.
- Staff holds public workshops at which intervenors, agency representatives, and members of the public meet with Staff and the Applicant to discuss, clarify, and negotiate pertinent issues.
- Staff publishes its initial technical evaluation of the AFC in its Preliminary Staff Assessment (PSA) and makes it available for a 30-day comment period.
- Staff publishes its Final Staff Assessment (FSA) which contains Staff's conclusions about potential environmental impacts and conformity with LORS; proposed conditions of certification (COCs) or mitigation that apply to the design, construction, operation, and closure of the facility; comments made on the PSA; and Staff's responses to those comments. The FSA serves as Staff's formal testimony.

[13] The "Energy Commission" consists of the five commissioners appointed and confirmed to review, oversee, and vote on items of business for the Energy Commission. Energy Commission Staff is the professional staff, consultants, or experts of the Energy Commission's Siting, Transportation and Environmental Protection Division who review and perform the environmental, social, engineering, and safety review.

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

Throughout the licensing process, members of the Committee, and ultimately the Energy Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, 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 substantive matters with the decision-makers, their staff, or the assigned hearing officer, unless these communications are made on the public record.[14]

PROCEDURAL HISTORY

As stated above, the Energy Commission has exclusive jurisdiction to license this project. Public Resources Code, sections 25500 et seq. and Energy Commission regulations mandate a public review process and specify the occurrence of certain procedural events in which the public may participate.[15] The key procedural events that occurred in the SERC proceeding are summarized below.

On October 26, 2016, Applicant filed an AFC to construct and operate the SERC.[16] On March 8, 2017, the Energy Commission accepted the AFC as complete and assigned a Committee to conduct proceedings, thus starting the Energy Commission's formal review of the project.[17]

[14] Cal.Gov. Code §§ 11430.10-11430.80.
[15] Cal. Code Regs., tit. 20, §§ 1200, et seq.; 1701, et seq.
[16] Exs. 1 through 62.
[17] http://www.energy.ca.gov/business_meetings/2017_minutes/2017-03-08_minutes.pdf

On March 30, 2017, the Committee issued a "Notice of Public Site Visit, Environmental Scoping Meeting and Informational Hearing."[18] Spanish, Vietnamese, and Korean translations of the Notice were posted to the SERC website that same day.[19] The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the SERC. The Energy Commission's Public Adviser's Office also advertised the public hearing and site visit and distributed information to local officials and sensitive receptors surrounding the project site.[20]

On April 17, 2017, the Committee conducted a site visit of the proposed SERC site followed by a public Informational Hearing at the Stanton Community Center/City Hall, 7800 Katella Avenue in Stanton, California. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues related to development of the SERC project, described the Energy Commission's review process, and explained opportunities for public participation.[21]

On May 1, 2017, the Committee issued its initial Scheduling Order.[22] The Committee Schedule was based on both the Applicant's and Staff's proposed schedules and related discussion at the Informational Hearing. The schedule contained a list of events that must occur in order to complete the certification process.

On June 28, 2017, Robert Sarvey submitted a petition to intervene in the proceeding, [23] which the Committee granted on July 21, 2017.[24]

On August 14, 2017, Helping Hand Tools submitted a petition to intervene in the proceeding, [25] which the Committee granted on September 7, 2017.[26]

On June 22, 2018, the Clean Coalition submitted a petition to intervene[27] in the proceeding, which the Committee granted on June 28, 2018.[28] The Clean Coalition

[18] TN 202006.
[19] TN 216757, TN 216758, and TN 216774.
[20] Sensitive receptors are people or institutions with people that are particularly susceptible to illness, such as the elderly, very young children, people already weakened by illness (e.g., asthmatics), and persons engaged in strenuous exercise.
[21] TN 217307.
[22] TN 217375.
[23] TN 219965.
[24] TN 220293.
[25] TN 220740.
[26] TN 221071.
[27] TN 223912.
[28] TN 223985.

participated in the July 25, 2018 prehearing conference,[29] then withdrew their intervention on July 31, 2018,[30] prior to the evidentiary hearing.[31]

On March 29, 2018, Staff published the PSA.[32] Staff held a public workshop on the PSA on April 18, 2018.[33] The 30-day comment period for the PSA ended on April 30, 2018.[34]

The FSA was published on June 7, 2018.[35]

On June 18, 2018, the Committee filed a Notice of Prehearing Conference and Evidentiary Hearing, setting the Prehearing Conference for July 25, 2018 and the Evidentiary Hearing for August 3, 2018.[36] This Notice contained a new schedule that superseded all prior schedules. On July 23, 2018, the Committee issued a Notice of Date and Time Change of Evidentiary Hearing advising all parties and the public that the Evidentiary Hearing would be moved to August 2, 2018 and would begin at 1:30 p.m.[37]

The Committee conducted the Prehearing Conference on July 25, 2018, in Sacramento at the Energy Commission. The Committee conducted the Evidentiary Hearing on August 2, 2018 at the Stanton Community Center/City Hall in Stanton, California.[38] On September 6, 2018 the Committee ordered the record reopened to allow the parties to resubmit corrected maps.[39] The record was ordered closed on October 5, 2018.[40]

The Committee published the PMPD on [October 5, 2018], subject to a 30-day comment period. The Committee conducted a Committee Conference in Sacramento, California on [October 29, 2018].[41] The comment period closed on [November 5, 2018]. The Committee filed Errata containing recommended edits to the PMPD on [DATE].

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[29] TN 224448.
[30] TN 224324.
[31] TN 224449.
[32] TN 223086.
[33] TN 223133-1, 223133-2, 223133-3, and 223133-4.
[34] TN 223081-1, 223081-2, 223081-3, and 223081-4.
[35] Ex. 300 (TN 223726).
[36] TN 223890.
[37] TN 224252.
[38] TN 224448 and 224449.
[39] TN 224652.
[40] TN 224894
[41] Text highlighted in yellow indicates dates or actions which are still pending at the time of the publication of this Decision.

The Energy Commission considered the PMPD and Errata at its [November 7, 2018] business meeting, and [adopted, modified, rejected] the PMPD and Errata.

ENERGY COMMISSION OUTREACH

Several entities within the Energy Commission provide various notices concerning power plant siting cases. Staff provides notices of Staff 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, Evidentiary Hearings and Committee Conferences. 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 a power plant siting proceeding. Further, the Media Office provides notice of events to local and regional press through press releases.

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

PUBLIC COMMENT

Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing. Comments were received during the Evidentiary Hearings and during the PMPD Committee hearings and comment period. The significant comments are addressed throughout the remainder of this Decision, either directly or in the narratives.

Some comments which are not specific to a particular topic area are addressed here.

California Assemblyman **Patrick O'Donnell**,[42] Long Beach City Council member, **Suzie Price**,[43] **Tonya Martin**,[44] representative for state Senator **Ricardo Lara**, 33rd District, **Bill Thomas**,[45] a local resident and **Lara Laramendi**,[46] Advocacy Director for Los Angeles County Business Federation, all spoke in favor of the SERC in terms of its benefits to the community, the environment, and to the electric grid.

[42] 11/15/16 RT 10:5 – 11:20; TN 216401.
[43] 11/15/16 RT 11:25 – 14:8; 3/1/17 RT 56:8 – 58:3.
[44] 11/15/16 RT 18:6 – 18:22.
[45] 11/15/16 RT 133:23 – 134:16.
[46] 11/15/16 RT 135:13 – 138:1

II. PROJECT DESCRIPTION

INTRODUCTION

The Stanton Energy Reliability Center (SERC) project will be constructed at 10711 Dale Avenue in the city of Stanton, Orange County, California. Stanton Energy Reliability Center, LLC (Applicant) will construct, own, and operate the SERC.

This topic was uncontested. Evidence on the topic of Project Description is contained in Exhibits 1 through 27, 29, 32, 54, 55, 59, 66, 76, 88, 90, 96, 100, 103, 104, 300, 301, 302, 303, 304, 305, 306, and 307.[1]

SETTING

The approximate 3.9-acre SERC site is located in the northeastern portion of the city of Stanton, in the city's Industrial General zoning district. It is a rectangular-shaped site, approximately 1,300 feet long by 135 feet wide, and is bisected by the Orange County Flood Control District stormwater channel separating the two legal parcels, with one parcel to the west and the other parcel to the east of the channel. The SERC site bounded by Dale Avenue to the east, an electrical transmission line corridor to the north, the Union Pacific Railroad to the south, and generally by the intersection of Pacific Street and Fern Avenue to the west.

Existing land uses near the site include the Southern California Edison (SCE) Barre Peaker Power Plant and Barre Substation to the northeast, the Katella Mobile Home Estates to the east, light industrial business to the north and west, and residential housing to the northwest,

The main access to the SERC site will be from Dale Avenue with secondary access from the west from Pacific Street. (See **Project Description Figures 1** and **3** at the end of this section).[2]

Temporary worker parking will be located on an approximately 2.89-acre area at the Bethel Romanian Pentecostal Church, which is located 350 feet south of the SERC at 10801 Dale Avenue.

The construction laydown for the SERC lies on the western half of the site where the battery storage system will be located. The battery storage system will be constructed after the combustion turbine part of the Hybrid EGTs is complete.[3]

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[1] 8/2/18 RT 29:20 – 30:14.

[2] Ex. 300, p. 3-1.

[3] Ex. 300, p. 3-4.

The SERC project will require two new bridges over the Orange County Flood Control District stormwater channel that bisects the project site. One bridge will be a utility bridge to support piping, electrical conduits, and cable tray, but not foot traffic or vehicles. The second bridge will be used for foot traffic and vehicles.[4]

Project Description - Figure 1 shows the regional location project site map. **Project Description - Figure 2** shows an architectural rendering of the completed SERC. **Project Description - Figure 3** shows the proposed arrangement and layout of the SERC, including linears and parking. **Project Description - Figure 4a** and **4b** show the general arrangement of the project on the eastern and western side of the storm channel, respectively. These figures can be found at the end of this section.

THE PROPOSED PROJECT

The following are the proposed components of the SERC:

- Two natural gas fired, simple-cycle combustion turbine electric generation facilities (CTG).
- Each CTG system consists of a stationary CTG, supporting systems, and associated auxiliary equipment. The CTGs will be equipped with the following required accessories to provide safe and reliable operation:
    - Air inlet system complete with a modular filtration system
    - Inlet air fogging system
    - Weatherproof acoustic enclosures with explosion-proof lighting
    - Fuel system, including an electronically controlled fuel metering valve
    - Two lube oil systems: one synthetic for the gas turbine and one mineral for the generator
    - Stainless steel lube oil reservoirs, valve trim, and piping
    - Lube oil cooling provided by an air-cooled, fin-fan cooler
    - Electro-hydraulic start system
    - 24-volt direct current (DC) battery system
    - Generator protective relays
    - Water injection for NOx control
    - Compressor wash system
    - Fire detection and protection system
    - Turbine/generator base plate[5]
- Each CTG will be powered by a General Electric (GE) LM6000 hybrid enhanced gas turbine (Hybrid EGT) system equipped with selective catalytic

[4] *Id*.

[5] Ex. 300, pp. 3-5 – 3-6.

reduction, air emissions control equipment, and associated support equipment for nitrogen oxides (NOx), and an oxidation catalyst for carbon monoxide (CO) and volatile organic compound (VOC) control.

The Hybrid EGT combines a combustion gas turbine with an integrated battery storage component operated by a proprietary software system. The integrated system will be capable of providing synchronous condensing, spinning reserve, high speed regulation, primary frequency response, and voltage support with the combined response of the gas turbine and battery storage system.[6]

- Each CTG is rated at a nominal generating capacity of 49 megawatts (MW) at full load under average ambient conditions (98 MW total for the SERC project).
- Each CTG will be designed to burn only natural gas during operations.
- Each CTG is designed to start and ramp up to achieve full capacity within 10 minutes. This fast-start capability is designed to meet the needs of the grid, which is receiving increasing amounts of intermittent renewable resources.
- The facility is expected to have an overall annual availability of 92 to 98 percent, including scheduled and forced outages.
- Hybrid EGT operation utilizing battery storage will provide operating reserve, regulation up and down, frequency regulation, and voltage regulation.
- Each Hybrid EGT will provide ancillary services, such as spinning reserve, allowing the SERC to readily adapt to changing conditions in the energy and ancillary services markets.
- Two sets of lithium-ion batteries housed in purpose-built battery enclosures, each with a nominal capacity of 10 MW (total 20 MW) and 4.3 MWh storage (total 8.6 MWh). The battery system could be charged either by the grid or the on-site combustion turbines. The batteries enable the gas turbines to supply spinning reserve by providing approximately 10 minutes of ramping profile for the gas turbines.
- The battery storage system will be constructed after the combustion turbine part of the Hybrid EGTs is complete.

[6] Ex. 300, pp. 3-3 – 3-4.

- Each Hybrid EGT will require a 50-foot tall exhaust stack with an exhaust diffuser at the top for a combined height of 70 feet. Each exhaust stack will be housed in a 70-foot tall enclosure utilizing acoustic barriers.
- Noise from Hybrid EGT operations will be decreased by an open roofless enclosure around each package. Each enclosure will be 35 feet in height with a minimum of 24-gauge metal cladding with interior acoustic absorption treatment.
- Equipment (generators, lube oil, gas compressors, and the heating, ventilation, air-conditioning systems) will be air cooled.
- The SERC will use demineralized potable water for inlet air cooling, controlling nitrogen oxides, and power augmentation for the gas turbines.
- The product water from the demineralizer system will be stored on site in a 100,000-gallon storage tank,
- Average daily water use estimates, depending on daily temperatures and Hybrid EGT^{TM} operations, range between 151.9 gallons per minute to 186 gallons per minute, with annual water use between 13.4 to 34 acre-feet.
- Process and potable water will be supplied by Golden State Water Company via connections in Dale Avenue and Pacific Street. It will be used for fire protection and service water, potable outlets, and safety showers.
- Golden State Water Company has provided the Applicant with a will-serve letter demonstrating they have adequate supply available and are able to serve the project during both construction and operation phases.
- Interconnection to SCE's Barre Substation via a 0.35-mile-long underground generator tie-line running from the SERC site east under Dale Avenue (**Project Description Figure 1 and Figure 3** show the transmission line route);
- The SERC would consume natural gas at a maximum rate of approximately 938 million Btu[5] (MMBtu; British thermal units) per hour.[7]
- Natural gas will be delivered to the SERC via a new 2.75-mile pipeline that will extend along Dale Avenue north to Southern California Gas Company's Line

[7] Ex. 7, p. 2-35.

1014 in La Palma Avenue.[8] (**Project Description Figure 1 and Figure 3** show the gas line route).

- At the SERC, the natural gas will flow through either a 12-inch- or 16-inch pipeline.[9]
- Natural gas pipeline construction staging areas include a staging yard on a one-half acre parcel adjacent to the SERC site, which is owned by SCE. A second staging area is located on a one-half-acre area within a parking lot 700 feet south of the intersection of Crescent and Dale Avenues.[10]
- Access to the natural gas pipeline route will be along existing urban streets. The natural gas pipeline trench will be 6 feet deep, approximately 4-6 feet wide, with a minimum cover depth of 36 inches.[11]
- Estimated wastewater discharge to the sewer will range between 42.2 gallons per minute and 51.6 gallons per minute. The annual wastewater discharge to the city of Stanton sanitary sewer line will range between 1.2 to 34 gallons per minute. The sanitary sewer line is located in Pacific Street to the west of the SERC.
- Temporary construction facilities will include an approximate 2.89-acre worker parking area at the Bethel Romanian Pentecostal Church, 350 feet south of the SERC site at 10801 Dale Avenue.[12]
- The construction laydown area for the gas-fired power plant is located on the western half of the site, which will be the location of the battery storage system.[13]

MAJOR ELECTRICAL EQUIPMENT AND SYSTEMS

The electric power generated by the SERC will be transmitted to the electrical grid, with the exception of the power required for on-site auxiliaries such as pumps, fans, gas compressors, and other parasitic loads.

As stated above, electric power will be generated by two EGTs at 13.8 kV and then stepped up using a single 13.8/66-kV, oil-filled generator step-up transformer to

[8] Ex. 7, p. 2-14.

[9] Ex. 7, p. 2-14.

[10] Ex. 300, p. 3-5.

[11] Ex. 300, p. 3-5.

[12] Ex. 7, ES-2.

[13] Ex. 300, pp. 3-3 – 3-5.

support connection to the local 66-kV network at the Barre Substation. Surge arrestors will protect the transformer from any surges in the 66-kV system caused by lightning strikes or other system disturbances.

The transformer will be set on a concrete foundation that includes a secondary oil containment reservoir to contain the transformer oil in the event of a leak or spill. The high-voltage side of the generator step-up transformer will be connected to a single circuit, three-phase, 66-kV line, which will be connected to the SCE 66-kV switchyard at the Barre Substation via an approximate 0.35-mile underground generator tie-line.

A detailed discussion of the electric transmission system is provided in the **TRANSMISSION SYSTEM ENGINEERING** section.

The two EGTs will use a common 125-volt DC power supply system for control power and control computers on uninterruptible power sources, consisting of two 50-percent capacity battery banks, two 100-percent static battery chargers, a 125 VDC panel board, an inverter, and a distribution panel for essential balance of plant (BOP) and CTG equipment.[14]

Under normal operating conditions, the battery chargers will supply DC power to the DC loads. The battery chargers are fed by 480-volt alternating current (VAC) and continuously charge the battery banks while supplying power to the DC loads.

Under abnormal or emergency conditions, when power from the alternating current (AC) power supply (480-volt) system is unavailable, the batteries will supply DC power to the DC system loads. Recharging of a discharged battery occurs whenever 480-volt power becomes available from the AC power supply system.

The 125-volt DC system will also be used to provide control power to the 13.8-kV switchgear, the 4,160-volt switchgear, the 480-volt load centers, critical control circuits, the plant control system, and the emergency DC motors. The power plant battery power supply system will be separate and apart from the on-site energy storage system battery array.[15]

FUEL SYSTEM

The CTGs will be designed to burn only natural gas. The natural gas requirement during operation at annual average ambient temperature will be approximately 938.4 million British thermal units per hour (MMBtu/hr) with higher heat value (HHV) basis totals for the two CTG units. Natural gas will be delivered to the SERC

[14] Ex. 300, p. 3-6.

[15] Ex. 300, pp. 3-6 – 3-7.

either via a new 2.75-mile pipeline that will extend north along Dale Avenue to Southern California Gas Company's Line 1014 in La Palma Avenue. At the project site, the natural gas will flow through either a 12-inch- or 16-inch pipeline, turbine-meter set, gas scrubber/filtering equipment, a gas pressure control station, electric-driven booster compressors, and coalescing and final fuel filters prior to entering the combustion turbines.[16]

A minimum floating delivery pressure of 300 pounds per square-inch gauge, as measured downstream of a non-regulated meter set, is expected from Southern California Gas Company. One 100-percent-capacity, electric-driven, gas fuel compressor will be provided to boost the pressure to that required by the CTGs. The gas compressor will be located outdoors and will be housed in an acoustical enclosure to reduce the compressor noise level.[17]

INLET AIR FOGGING SYSTEM

Combustion air for each CTG will be cooled via the use of a fogging system. Fogging systems are based upon the extremely high pressurization of demineralized water being forced through nozzles to create a fine mist or fog. The fogging system will cool the inlet air to the wet bulb temperature of the inlet air. The fogging system will be in service only when the CTGs are at or near full load, and will not be placed in service for ambient dry bulb conditions below 50°F.[18]

WASTE MANAGEMENT

All waste produced at the SERC will be properly collected, treated if necessary, and disposed of in accordance with all applicable laws, ordinances, regulations, and standards (LORS).[19]

Nonhazardous Solid Wastes

The SERC will produce construction, operation, and maintenance nonhazardous solid wastes typical of power generation operations. Management of solid waste is discussed in more detail in the **WASTE MANAGEMENT** section of this Decision.[20]

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[16] Ex. 7, p. 2-14.

[17] Ex. 300, p. 3-7.

[18] Ex. 300, p. 3-7.

[19] *Id*.

[20] Ex. 300, pp. 3-7 – 3-8.

Hazardous Materials and Wastes

Hazardous and nonhazardous wastes from the SERC will be taken to southern and central California hazardous waste facilities and landfills as appropriate. See the **WASTE MANAGEMENT** and **HAZARDOUS MATERIALS MANAGEMENT** sections of this Decision for more details.[21]

EMISSION CONTROL AND MONITORING

Air emissions from the combustion of natural gas in the CTGs will be controlled to the standards of best available control technology as determined by the South Coast Air Quality Management District. To ensure that the systems perform correctly, continuous emissions monitoring for NOx and CO will be required. The **AIR QUALITY** section of this Decision includes additional information on emission controls and monitoring requirements.

FIRE PROTECTION

The SERC fire protection system will be designed to protect personnel and limit property loss and plant downtime in the event of a fire. The system will include a fire protection water system, hydrants, carbon dioxide (CO_2) fire suppression systems for the CTGs, and portable fire extinguishers. To protect the SERC, an underground fire loop water supply system will be built in accordance with:

- Federal, state and local fire codes, occupational health and safety regulations, and other jurisdictional requirements;
- California Building Code; and
- National Fire Protection Association (NFPA) standard practices.

Portable CO_2 and dry chemical extinguishers will be located throughout the power plant site, including switch-gear rooms, with size, rating, and spacing in accordance with NFPA 10. The **WORKER SAFETY/FIRE PROTECTION** section of this Decision includes additional information for fire and explosion risk and local fire protection capability.

Plant Auxiliaries

The lighting system provides personnel with illumination for operation under normal conditions and for egress or manual equipment operations under emergency conditions. Lighting plans and systems are discussed in more detail in

[21] Ex. 300, p. 3-8.

the **BIOLOGICAL RESOURCES, TRAFFIC AND TRANSPORTATION,** and **VISUAL RESOURCES** section of this Decision.

PROJECT SCHEDULE AND CONSTRUCTION

Construction of the generating facility from site preparation to commercial operation is expected to take place from November 2018 through December 2019 (approximately 14 months total). The project's construction workforce will average 48 workers over the 14-month period and reach a peak of 78 workers in month 8 (June 2019).[22] Major milestones are listed in **Project Description Table 1**.

Project Description Table 1
Major Project Milestones

Activity	Date
Begin Construction	November 2018
Startup and Testing	September 2019
Commercial Operation	December 2019

Typically, construction will be scheduled to occur Monday through Saturday between 7:00 a.m. and 8:00 p.m. Additional hours may be necessary to make up schedule deficiencies or to complete critical construction activities. During some construction periods and during the startup phase of the project, some project activities will occur 24 hours per day, 7 days per week. However, in accordance with the city of Stanton noise ordinance, noisy construction work will not take place on Sundays, federal holidays, or between 8:00 p.m. and 7:00 a.m. Monday through Saturday. Cumulative Ambient and Construction noise at off-site sensitive receptors are estimated to be 73 dBA.[23] Detailed information can be found in the **NOISE AND VIBRATION** section of this Decision.

FACILITY OPERATION

The SERC will have an operations and maintenance manager, plant technicians, and an instrument technician working periodically at the project site during the standard 5-day, 8 hour-per-day work week for the performance of preventive and corrective work orders. Otherwise, the facility will be unmanned. Project operation will take place remotely from the Applicant's control room in Sacramento, California. Plant technicians will be dispatched to the SERC by remote operators for trouble and service calls when needed.

[22] Ex. 300, p. 3-11.

[23] Ex. 300, p. 4.2-29.

The SERC is expected to have an annual plant availability of 92 to 98 percent, including scheduled outages for maintenance and forced outages. The Applicant expects to operate the SERC in a fashion similar to a peaker unit, with some amount of load-following and cycling. The facility is expected to be operated during high demand times (typically evening hours) to supplement base-load and renewable energy generation capacity. The exact operational profile of the plant, however, cannot be defined in detail because operation of the facility depends on the variable demand in the SERC service area.[24]

FACILITY CLOSURE

Closure of the SERC can be temporary or permanent. Temporary closure is defined as a shutdown for a period exceeding the time required for normal maintenance, with an intention to restart in the future. Causes for temporary closure include a disruption in the supply of natural gas or damage to the plant from earthquake, fire, storm, or other natural events. Permanent closure is defined as a cessation in operations with no intent to restart operations.

For a temporary closure where there is no release of hazardous materials, the Applicant will maintain security of the SERC facilities and will notify the Energy Commission and other responsible agencies as required by law. Where the temporary closure includes damage to the facility and there is a release or threatened release of regulated substances or other hazardous materials into the environment, procedures will be followed as set forth in a Risk Management Plan and the Hazardous Materials Business Plan to be developed as described in the **HAZARDOUS MATERIALS MANAGEMENT** section of this Decision.

If the facility is permanently closed, the closure procedure will follow a plan that will be developed as described in the **COMPLIANCE MONITORING PLAN** section of this Decision.[25]

PROJECT OBJECTIVES

The SERC's primary objective is to be a state-of-the-art energy reliability resource. It has been designed to deliver reliability services with a minimal carbon footprint and a low-emissions profile. The SERC would be one of the first commercial applications of the Hybrid EGT. Using this technology, the SERC will be able to combine dispatchable, operationally flexible, and efficient energy generation with energy storage technology to provide new local capacity and reliability services

[24] Ex. 300, pp. 3-11 – 3-12.

[25] Ex. 300, p. 3-12.

specifically in the West Los Angeles Basin local reliability area of SCE's service territory.[26]

The SERC's project objectives are as follows:

- Safely construct and operate an electrical energy reliability facility to meet SCE's need for local capacity in the West Los Angeles Basin local reliability area.
- Use Wellhead's patented EGT™ technology to provide the following:
    - Greenhouse gas-free operating reserve;
    - Flexible capacity without start time;
    - Peaking energy for local contingencies;
    - Voltage support and primary frequency response without fuel burn;
    - Superior transient response attributable to co-location of gas turbines and battery; and
    - Gas turbine management of battery state-of-charge in real time.
- Site the project as near as possible to an SCE substation with available transmission capacity to serve the West Los Angeles Basin and minimize the generation tie-line length.
- Site the project in an existing industrial area on a previously disturbed site to minimize environmental impacts.
- Site the project in a community that embraces the project and its new technology.
- Safely construct and operate an electrical energy reliability project that would satisfy the commercial obligations of both Resource Adequacy Purchase Agreements.[27] (The SERC has two Resource Adequacy Purchase Agreements with SCE that were approved by the California Public Utilities Commission in recognition of the site location to provide local reliability support to the SCE West Los Angeles Basin subarea.[28])

APPROACH TO CUMULATIVE IMPACT ANALYSIS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the

[26] Ex. 300, p. 3-2.

[27] Ex. 300, pp. 3-2 – 3-3.

[28] Ex. 7, p. ES-2.

effects of (1) past projects; (2) other current projects; and (3) probable future projects.[29]

The record contains evaluations of cumulative impacts within the analysis of each resource area. Each section of this Decision defines its own geographic scope for cumulative impact analysis based upon the potential area within which impacts from the SERC could combine with those of other projects.

The analysis evaluates the effects of the SERC in combination with past, present, and foreseeable future projects within the defined area of geographic effect. **Project Description Table 2** below contains the SERC Master List of Cumulative Projects that were in process at the time the Energy Commission staff prepared the staff assessment.[30]

[29] Cal. Code Regs., tit. 14, § 15130.

[30] Ex. 300, p. 1-12.

Executive Summary Table 2[31]
Stanton Energy Reliability Center – Master Cumulative Project List

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
1	PPD780	Construction of a 2,418 square foot fast food restaurant with drive-through	7952 Cerritos Ave. and 10511-10529 Beach Blvd., Stanton	0.39	Tentative Completion - Summer 2017
2	PPD 774	Construction of a four unit condominium project	7921 Second St., Stanton	0.58	Building Plan Check
3	PPD-783	Two new commercial office buildings	10441/10425 Magnolia, Stanton	0.74	Still in entitlement process
4	PPD 777	Construct commercial development including a retail pad building, drive-through restaurant, gas station and a drive through car wash	11382, 11430 and 11462 Beach Blvd., Stanton	0.76	Building Plan Check
5	Relocation and construction of school district central kitchen facility	Relocate District's central kitchen facility from 501 North Crescent Way to 2735 West Ball Road, Anaheim. Existing central kitchen facility to be converted into a District conference center (only interior improvements necessary). New central kitchen facility to consist of a 40,000 sq. ft., two-story facility, with parking areas and loading dock.	2735 W. Ball Rd, between S. Dale Ave. and S. Magnolia Ave, Anaheim	0.79	Unknown
6	Ball Road Townhomes-Bonanni, DEV2016-00100	Subdivide and construct a 43-unit single-family attached residential project.	2730 W Ball Rd., Anaheim	0.81	Under Review

[31] Ex. 300, pp. 1-14 – 1-26.

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
7	DEV2016-00048	Land use entitlements requested: (1) to reclassify the property from the Transition Zone to Single-Family Residential Zone and (2) a tentative parcel map to subdivide property into two parcels. Existing building on new parcel 2 would be removed.	807 S. Dale Ave., Anaheim	0.98	Approved
8	PPD 775	Construction of 11 single-family detached units	8101-8111 Catherine Ave., Stanton	1.58	Building Plan Check
9	PPD 766	Five-story mixed use development including outpatient clinic, assisted living facility and restaurant	12282 Beach Blvd., Stanton	1.59	Building Plan Check
10	Lincoln Townhomes DEV2013-00028A	Entitlements to construct a 35-unit condominium complex.	2726 W Lincoln Ave A,B,C,D, Anaheim	1.68	Under planning review.
11	PPD 779	Construction of a medical office building	12456 Beach Blvd., Stanton	1.73	Construction complete
12	PPD 776	Construction of a 25-unit development,	8081 Lampson Ave., Stanton	1.75	Building Plan Check
13	Emeritus at Fairwood Manor Expansion DEV2014-00100	Expand an existing assisted living facility.	200 N. Dale Ave., Anaheim	1.84	Under planning review.
14	Westgate	Commercial retail center, 250,000 sq. ft.	Northeast corner of Beach Blvd. and Lincoln Ave., Anaheim	1.86	Approved. Construction estimated 2018.
15	Lincoln Cottages, DEV2016-00043	Entitlements to construct a 22-unit, three-story attached single-family residential project.	3319-3321 W Lincoln Ave., Anaheim	2.05	Approved
16	Braille Institute	Demolish existing Braille Institute building and reconstruct new campus with less parking than required by zoning.	527 N. Dale Ave., Anaheim	2.23	Approved
17	Parkgate Center, DEV2015-00127	Entitlements to develop a 48-unit, three story attached and detached single family residential project.	2301-2331 W Lincoln Ave 114A, Anaheim	2.25	Approved
18	PPD 780	Construct a 4,175 square foot multi-tenant building with drive through	12950 Beach Blvd., Stanton	2.26	Building Plan Check

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
19	CUP-092-2017	Conditional Use Permit request to operate new 29,010 sq. ft. retail business.	10870 Katella Ave. Suite G, Garden Grove	2.57	Entitlements granted
20	CUP-085-2016	Conditional Use Permit (CUP) approval to operate new, approximately 44,007 sq. ft. Gold's Gym, located in the Gardenland Shopping Center.	10870 Katella Ave. Suite A, Garden Grove	2.58	In plan check
21	18-Units on Euclid, DEV2016-00027	Entitlements to construct 18-unit, 3-story condominium project.	1525 S Euclid St., Anaheim	2.66	Plan Check
22	Ball and Euclid Plaza, DEV2015-00119	Entitlements to demolish existing building and the construction of a new drive-through restaurant building within existing shopping center.	901-951 S Euclid St, Anaheim	2.75	Approved
23	Hotel Stanford	Ten-story hotel with 150 guest rooms, conference and banquet space and rooftop bar.	7860 Beach Blvd., Buena Park	2.94	Approved May 2016
24	Fairmont Private School, DEV2014-00138	Four-story student dormitory building on the existing Fairmont private school campus	2200 W Sequoia Ave., Anaheim	3.03	Approved
25	SP-022-2016, LLA-011-2016, DA-002-2016, CUP-065-2016	Approval to construct a four-story, 10-unit, work-live mixed-use development on three separate properties.	10641 Garden Grove Blvd., 10661 Garden Grove Blvd., and 10662 Pearl St., Garden Grove	3.26	Entitlements granted
26	Barton Place	A 28-acre senior residential community and 5-acre commercial/retail development.	Northeast corner of Katella Ave. and Enterprise Dr., Cypress	3.50	Construction to begin in 2018 and expected to last 34 months.
27	SP-034-2017, TT-17928-2017, DA-005-2017, CUP-097-2017	Construct two work-live units and 14 residential units.	11222 Garden Grove Blvd., Garden Grove	3.72	Entitlements granted

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
28	Beach and Orangethorpe Mixed Use Project (The Source)	Max. development allowed would be 500,000 sq. ft. retail, office, restaurant, hotel, and entertainment complex.	6940 Beach Blvd., Buena Park	3.72	Under construction; expected to last three years.
29	CUP-095-2017	Construction of 8,308 sq. ft. fire station, replace 1,000 sq. ft. community building with 2,000 sq. ft. community building, with associated site improvements at West Haven park.	12252 West St., Garden Grove	4.08	Entitlements granted
30	SP-032-2016	Construction of new approx. 3,000 sq. ft. one-story building, for operation of retail meat market on vacant 13,259 sq. ft. lot with associated improvements, including parking lot and landscaping.	10691 Westminster Ave., Garden Grove	4.14	In plan check
31	Anaheim Plaza, DEV2015-00120	580-room, 8-story hotel with 50,000 sq. ft. meeting space; 25,600 sq. ft. restaurant space; 20,188 sq. ft. concierge lounge space.	1700 S Harbor Blvd., Anaheim	4.23	Approved
32	La Palma Complex Reservoir Rehabilitation & Pump Station Replacement	Replace metal roof of 4-million-gallon reservoir with aluminum roof. Install structural support for reservoir, a hypalon liner, a surge tank, a 1000-1200 kilowatt semi-enclosed diesel generator for emergency backup power, piping and 6-ft. high fencing along front setback on West St. Replace pump station and its five pumps with new pump station with four pumps (two 250 horsepower (hp) and two 125-hp). Demolish existing 3.0 MG reservoir and existing inactive water production well.	West St and La Palma Ave, Anaheim	4.25	Unknown
33	Harbor Substation	Construction of two 45 megavolt-amp transformers and switchgear distribution system, one 180 ft. by 50 ft. single-story structure; and one 90 ft. by 50 ft. single-story structure to house two transformers. Underground 69 kilovolt (kV) and 12 kV transmission and distribution lines to be installed in the rights-of-way. Subterranean vaults (approx. 8 ft. by 20 ft.) at depths of approx. 9 ft. below grade.	Substation at 131 W Katella Ave, Anaheim; ROWs of Cerritos Ave., Katella Ave., Hast St., Zeyn Street., Disney Way, Harbor Blvd., Clementine Street., Anaheim Blvd., Manchester Ave., and	4.64	Construction expected to be completed by Fall 2019.

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
			Ninth St. Vaults at Katella Ave., Zeyn St., Anaheim Blvd., Haster St., Disney Way, Clementine St., and Manchester Ave.		
34	SP-033-2017	Site Plan approval to construct approx. 4,954 sq. ft. commercial pad building within parking lot of existing multi-tenant shopping center, Harbor Place Center.	13200-13220 Harbor Blvd., Garden Grove	4.67	Entitlements granted
35	Cambria Hotel and Suites, DEV2016-00038	Construction of 12-story, 352-room hotel, three restaurant tenant spaces and one-level of subterranean parking.	1721 S Manchester Ave., Anaheim	4.73	Approved
36	Hampton Inn and Suites	Four-story hotel with 102 rooms, pool, spa, meeting room, and fitness area.	7307 Artesia Blvd., Buena Park	4.73	Under construction
37	Buena Park Nabisco Mixed Use Project	149 residential condo/townhomes, 100-room, 4-story hotel, and auto dealership.	Northwest corner of Artesia Blvd. and Rostrada Ave., Buena Park	4.76	Hotel construction completion 2015. Construction of townhomes and auto dealership expected in 2017.
38	OnBeach Mixed Use Development	Five-story mixed-use development on approximately 2.31-acre former Anaheim General Hospital site. Includes approx. 48,000 sq. ft. medical office, restaurant, and retail uses as well as 60 senior apartments.	5742 Beach Blvd., Buena Park	4.83	Under construction
39	Industrial Building, DEV2016-00056	New 143,000 sq. ft. industrial building.	1710-1730 S Anaheim Blvd., Anaheim	4.86	Plan Check

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
40	La Palma Village, DEV2014-00095	Entitlements for mixed use project to include 162-unit attached single family residential units with ground floor commercial space.	1110 N Anaheim Blvd., Anaheim	4.91	Approved
41	GPA-001-2017, PUD-006-2017, SP-028-2017, TT-17927-2017, DA-006-2017	Entitlements for 70 single-family detached residential units and related street and open space improvements on 9.01-acre site. Project site currently contains church, school, and parking lot.	12901 Lewis St. and 12921 Lewis St., Garden Grove	5.59	Awaiting city council approval
42	Anaheim Five Coves (Northern Extension) Park Project	Develop 9-acre linear urban nature park extending from Lincoln St. to Frontera St. Project in second phase of existing 14-acre Anaheim Coves Nature Park and is a continuation of that park's 1.5-mile multi-use trail and native-plant greening effort for the area.	Lincoln Ave and S Rio Vista St , Anaheim	6.99	Construction estimated mid Sept 2017- mid March 2018.
43	Anaheim Station Improvements	Construct a second station track and platform, Americans with Disabilities Act (ADA) improvements, possible expansion of parking.	Metrolink Anaheim Canyon Station, Anaheim	9.10	Environmental study phase. Construction estimated October 2019 to October 2020.
44	Anaheim Sustainability Center	Organic waste-to-energy facility to convert organic waste to biogas. Biogas used to generate up to 9 MW of renewable electricity for onsite needs and for sale. Facility would include two anaerobic digester tanks, an administration building, a receiving/processing building with loading bays, an outdoor power generation apparatus, and 15 parking spaces.	1300 and 1322 N. Lakeview Ave., Anaheim	10.50	Mitigated Negative Declaration July 2016
n/a	Prestressed Concrete Cylinder Pipe Rehabilitation Program	Rehab pre-stressed concrete cylinder pipe portions of five subsurface water distribution pipelines nearing end of service life. The second lower feeder is closest to the city of Stanton. Maintenance and replacement of worn or outdated appurtenant structures (e.g., above-ground	Second Lower Feeder-Rolling Hills, Lomita, Torrance, Los Angeles, Carson, Long Beach, Los Alamitos, Cypress, Buena	n/a	Construction scheduled between Oct. 2017 to June 2025.

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
		air release valves, vacuum valves, manholes, and buried vault structures) to be completed. Individual projects in Metropolitan owned rights-of-way, public roads and open space.	Park, Anaheim, Placentia, Yorba Linda.		
n/a	Anaheim Resort Electric Line Extensions Project	Extend underground electric line to connect to existing substation circuit breakers. Approx. 8,000 linear ft. (lf) cable line pulled through existing ductbank, approximately. 11,000 lf installed within new ductbank. New ductbanks require trench generally excavated to depth of 4-10 ft. at width of approx. 2 ft. Install approx. 2,500-3,000 lf ductbank on Cerritos Ave. and Anaheim Blvd. for future installation of 69 kilovolt line to be installed under future project in mid-2017. Install risers and vaults max vault depth = 10 ft. x 8 ft. x 20 ft. long.	Cerritos Ave, Walnut St, Magic Way, Ninth St, Disney Way, Disneyland Dr., Lewis St, Anaheim	n/a	In construction. Construction started Feb. 2017 with completion estimated Nov. 2018.
n/a	Lincoln Avenue Widening Project (from East Street to Evergreen Street)	Widen approx. 2,700 ft. segment of Lincoln Ave. from four- to six-lane divided facility. Remove existing improvements, clearing and grubbing, excavation, place new asphalt concrete pavement, construct concrete curb and gutter, driveways, access ramps, sidewalks, bus pads, drainage system improvements, relocate existing facilities, install traffic signal at Lincoln Ave. and La Plaza intersection, traffic signal modifications, signing, striping, and landscaping.	Lincoln Ave., between East St. and Evergreen St., Anaheim	n/a	Notice of Intent
n/a	Lincoln Avenue Widening Project from West Street to Harbor Boulevard	Widen Lincoln Ave. to add one lane in each direction from West St. to Harbor Blvd., roadway improvements to include turn lane; raised medians; removal of on-street parking; reconstruct parkways with separated sidewalks; landscaping, new pavement, curbs, gutters, sidewalks, and pedestrian ramps. Reconstruct existing storm drain catch basins and connector pipes. Construct new catch basins and storm drains.	Lincoln Ave. between West St. and Harbor Blvd., Anaheim	n/a	Mitigated Negative Declaration published Dec. 2016. 10-month construction schedule estimated to start in 2018.

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
n/a	Rehabilitation of Western Regional Sewers, Project No. 3-64	Rehab and/or replace entire lengths of Orange Western Sub-Trunk, Los Alamitos Sub-trunk, Westside Relief Interceptor, and Seal Beach Blvd interceptor. Complete replacement of the Westside Pump Station wet well and replacement or rehabilitation of existing force main and odor control facilities.	Route along Los Alamitos Blvd., Denni St., and Bloomfield St. Route along Los Alamitos Blvd., Denni St., and Moody St. Route along Orange Ave. and Western Ave. Cities of Cypress, La Palma, Los Alamitos, and Seal Beach and the community of Rossmoore.	n/a	Construction Oct. 2019 to June 2026.
n/a	North Basin Monitoring Well Project	Construct and operate 14 monitoring wells at 8 locations within cities of Anaheim and Fullerton. Northern portion of Orange County Groundwater Basin (North Basin Area) impacted by volatile organic compounds (VOCs)	Various locations, Fullerton and Anaheim (north of SR-91 and south of Commonwealth Avenue)	n/a	Unknown
n/a	SR-241/SR-91 Tolled Express Lanes Connector Project	Construct 8.7-mile connector between State Route (SR) 241 and tolled lanes in median of SR-91.	Junction of SR 241 and SR 91, cities of Anaheim, Yorba Linda, and Corona	n/a	Unknown
n/a	Eastbound State Route 22 Safety Improvement Project	Convert collector-distributor road to freeway to freeway direct connector for Interstate 5 (I-5) southbound. Create new freeway to freeway connector from State Route 22 (SR) eastbound to I-5/SR-57 northbound by re-striping and widening connector to add one additional lane. Access to SR-22 eastbound from Bristol St. on ramp eliminated to accommodate I-5/SR-57 northbound connector. Install new and upgrade existing traffic control devices. Existing high occupancy vehicle lane with continuous access maintained. New changeable message sign installed east of SR-39.	East of Garden Grove Ave. to Devon Rd., cities of Orange, Santa Ana, and Garden Grove	n/a	Unknown

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
n/a	OC Streetcar	Streetcar line linking Santa Ana Regional Transportation Center with multi-modal hub at Harbor Blvd./Westminster Ave. in Garden Grove. A 4.15-mile route along Santa Ana Blvd., Fourth Street, and Pacific Electric right-of-way.	Route along Santa Ana Blvd., Fourth Street, and Pacific Electric right-of-way in the Cities of Santa Ana and Garden Grove.	n/a	Construction estimated 2018-2020.
n/a	Spectrum Paint & Powder, Inc.	Powder coat booth	1332 S. Allec St., Anaheim	n/a	SCAQMD Permit to Operate (PTO) granted
n/a	Dae Shin USA Inc. /Jae Weon Lee	5-20 million British thermal unit (MMBtu) boiler	610 N. Gilbert St., Fullerton	n/a	SCAQMD PTO granted
n/a	International Paper - Buena Park Plant	Flexographic air dry	6485 Descanso Ave., Buena Park	n/a	SCAQMD PTO granted
n/a	Ameripec Inc.	5-20 MMBtu boiler	6965 Aragon Circle., Buena Park	n/a	SCAQMD PTO granted
n/a	New Cingular Wireless PCS, AT&T Mobility	>500 horsepower (hp) emergency generator	301 N. Crescent Way, Anaheim	n/a	SCAQMD PTO granted
n/a	Damac Products, LLC.	Spray booth	14489 Industry Circle, La Mirada	n/a	SCAQMD PTO granted
n/a	Anaheim City, Convention Center	Charbroiler	800 W. Katella Ave., Anaheim	n/a	SCAQMD PTO granted
n/a	Southern California Edison Co.	Gas turbine, selective catalytic reduction (SCR), ammonia, etc.	8662 Cerritos Ave., Stanton	n/a	SCAQMD Authorization to Construct (ATC) applied
n/a	UCI Medical Center	>500 hp emergency generator	101 The City Drive, Route 104, Orange	n/a	SCAQMD PTO granted

Label ID#	Project Title	Description	Location	Distance to SERC (Miles)	Status
n/a	LA County Sanitation District NO. 2	Sewage treatment process	7400 E. Willow St., Long Beach	n/a	SCAQMD PTO granted
n/a	GKN Aerospace Transparency Sys Inc.	Drying oven, dip tank	12122 Western Ave., Garden Grove	n/a	SCAQMD PTO granted
n/a	US Foodservice	Charbroiler	15155 Northam St., La Miranda	n/a	SCAQMD PTO granted
n/a	Techno Coatings Inc.	Baghouse	1391 S. Allec St., Anaheim	n/a	SCAQMD PTO granted
n/a	CAL Aurum IND	Plating tank	15632 Container Lane, Huntington Beach	n/a	SCAQMD ATC applied
n/a	PRIMA-TEX Industries, Inc.	Screen printing press	6237 Descanso Circle, Buena Park	n/a	SCAQMD PTO granted
n/a	The Boeing Company	Cooling towers	5301 Bolsa Ave., Huntington Beach	n/a	SCAQMD PTO granted

Note: n/a not applicable or not available.

AGENCY AND PUBLIC COMMENTS

David John Shawver, Mayor, City of Stanton, spoke in favor of the project saying that the SERC energy project is just another step in Stanton's history supporting energy innovation.[32]

Steven Parker, Assistant City Manager, City of Stanton, spoke of a great working relationship with WPower and indicated that the collaboration has yielded what will be an excellent state-of the-art facility.[33]

Francisco Barajas of North Orange County Chamber of Commerce said the SERC will greatly benefit the region while remaining consistent with applicable local land, which will bring jobs to the region and have an enormous positive impact on the financial well-being of Stanton and the surrounding communities. It will bring a substantial property tax revenue to the city which will fund vital services. He noted that the SERC will provide rapid response delivery of energy and voltage support services that are essential to provide reliability support and stability to the grid, integrating intermittent renewable energy resources.[34]

Sharon Quirk-Silva, Assemblywoman, spoke in support of the project and the good jobs that it will bring to Stanton within her district.[35]

Virginia Vaughn, Mayor of the City of Buena Park, commented that Buena Park has been very engaged with WPower during the planning and permit process, including multiple meetings with the City Council and presentations with city staff. The SERC's reliability will enhance the region's energy and energy grid. It is a bridging technology needed to move rapidly from fossil fuel generation to more reliance on the clean renewable generation. The City of Buena Park and the City Council support this project.[36]

Response: We appreciate public comments and acknowledge the Applicant's community outreach efforts as well as its efforts to work closely with the communities affected by the SERC project.

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[32] 8/2/18 RT 8:9 – 10:14.

[33] 8/2/18 RT 11:22 – 12:13.

[34] 8/2/18 RT 12:16 – 14:5.

[35] 8/2/18 RT 55:20 – 57:2.

[36] 8/2/18 RT 10:16 – 11:16.

FINDINGS OF FACT

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

1. Stanton Energy Reliability Center, LLC will own and operate the Stanton Energy Reliability Center on private land in the City of Stanton, Orange County, California.

2. Construction of the Stanton Energy Reliability Center facility, from site preparation and grading to commercial operation, is expected to take place over an approximate 14-month period starting in November 2018 and lasting through December 2019.

3. The Stanton Energy Reliability Center will have a combined nominal electrical output of 98 MW from two natural gas-fired, simple-cycle combustion turbine electrical generating facilities.

4. The Stanton Energy Reliability Center will have two sets of lithium-ion batteries housed in purpose-built battery enclosures, each with a nominal capacity of 10 MW (total 20 MW) and 4.3 MWh storage (total 8.6 MWh).

5. The Stanton Energy Reliability Center will interconnect to Southern California Edison's Barre Substation via a 0.35-mile-long underground generator tie-line that would extend from the Stanton Energy Reliability Center site east under Dale Avenue to the Barre Substation.

6. The Stanton Energy Reliability Center will require approximately 938.4 million British thermal units per hour (MMBtu/hr).

7. Natural gas will be delivered via a new 2.75-mile pipeline that will extend north along Dale Avenue to Southern California Gas Company's Line 1014 in La Palma Avenue.

8. The Stanton Energy Reliability Center is expected to use between 13.4- to 34-acre feet of water per year. Water will be supplied by Golden State Water Company via connections in Dale Avenue and Pacific Street.

9. The Stanton Energy Reliability Center's estimated annual wastewater discharge to the City of Stanton's sanitary sewer line is expected to range between 1.2 to 34 gallons per minute. The sanitary sewer line will connect at Pacific Street to the west of the project

10. The Stanton Energy Reliability Center's fire protection system will include a fire protection water system, hydrants, carbon dioxide fire suppression systems for the combustion turbine generators, and portable fire extinguishers.

11. A fire-loop water supply and pumping system, designed according to National Fire Protection Association standards, will provide fire-fighting water to fire hydrants, hose stations, and water spray and sprinkler systems within the project site.

12. The construction laydown area for the Stanton Energy Reliability Center will be on the western half of the site which will later become the location of the battery storage system.

13. A 2.89-acre worker parking area will be at the Bethel Romanian Pentecostal Church located at 10801 Dale Avenue, approximately 350 feet south of the Stanton Energy Reliability Center site.

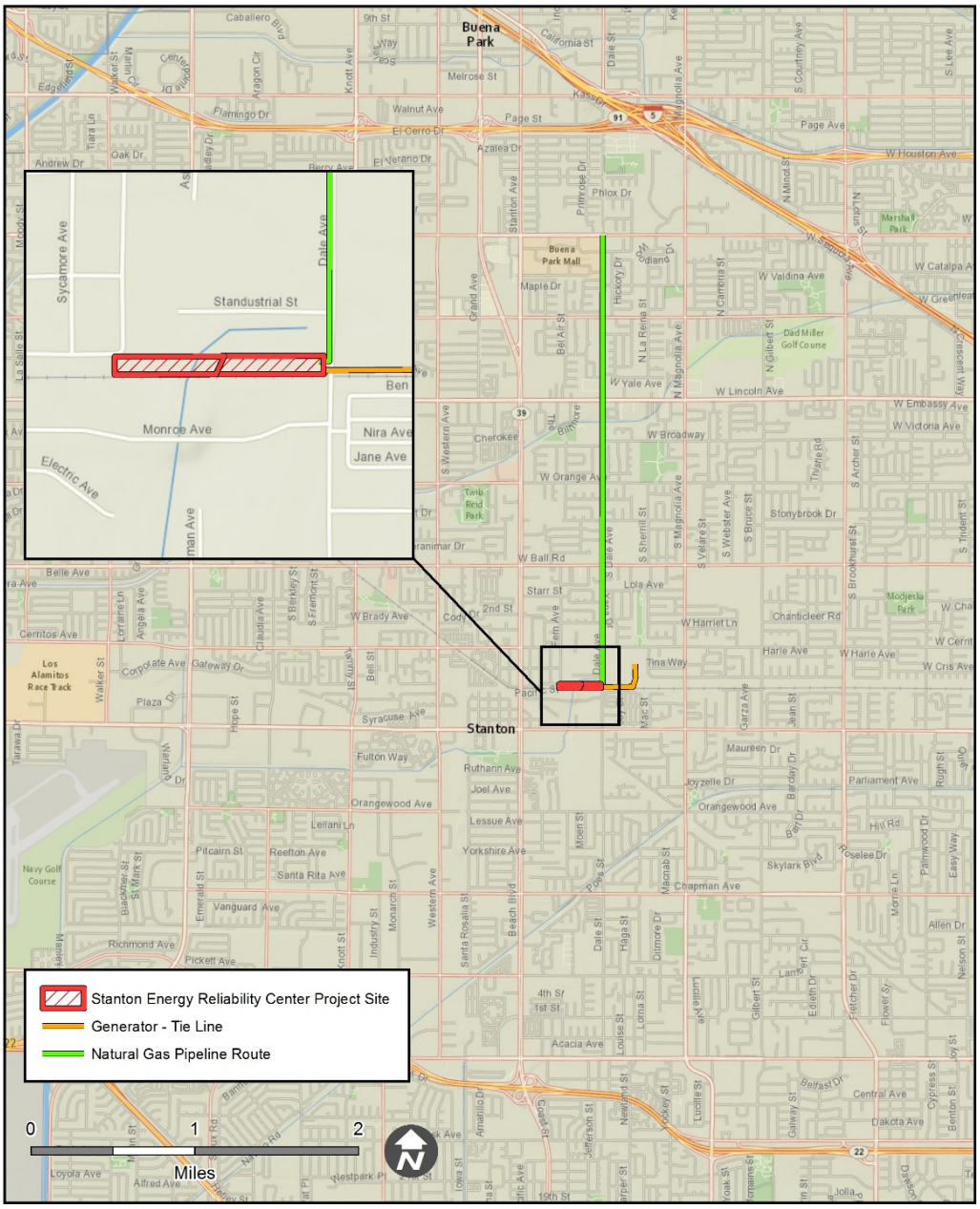
14. The Stanton Energy Reliability Center's construction workforce will average 48 workers over the 14-month construction period and reach a peak of 78 workers in the eighth month (approximately June 2019).

15. The Stanton Energy Reliability Center and its objectives are adequately described by the relevant documents contained in the evidentiary record.

CONCLUSIONS OF LAW

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

PROJECT DESCRIPTION - FIGURE 1
Stanton Energy Reliability Center - Project Location



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: CH2M, California Energy Commission, National Geographic World Map

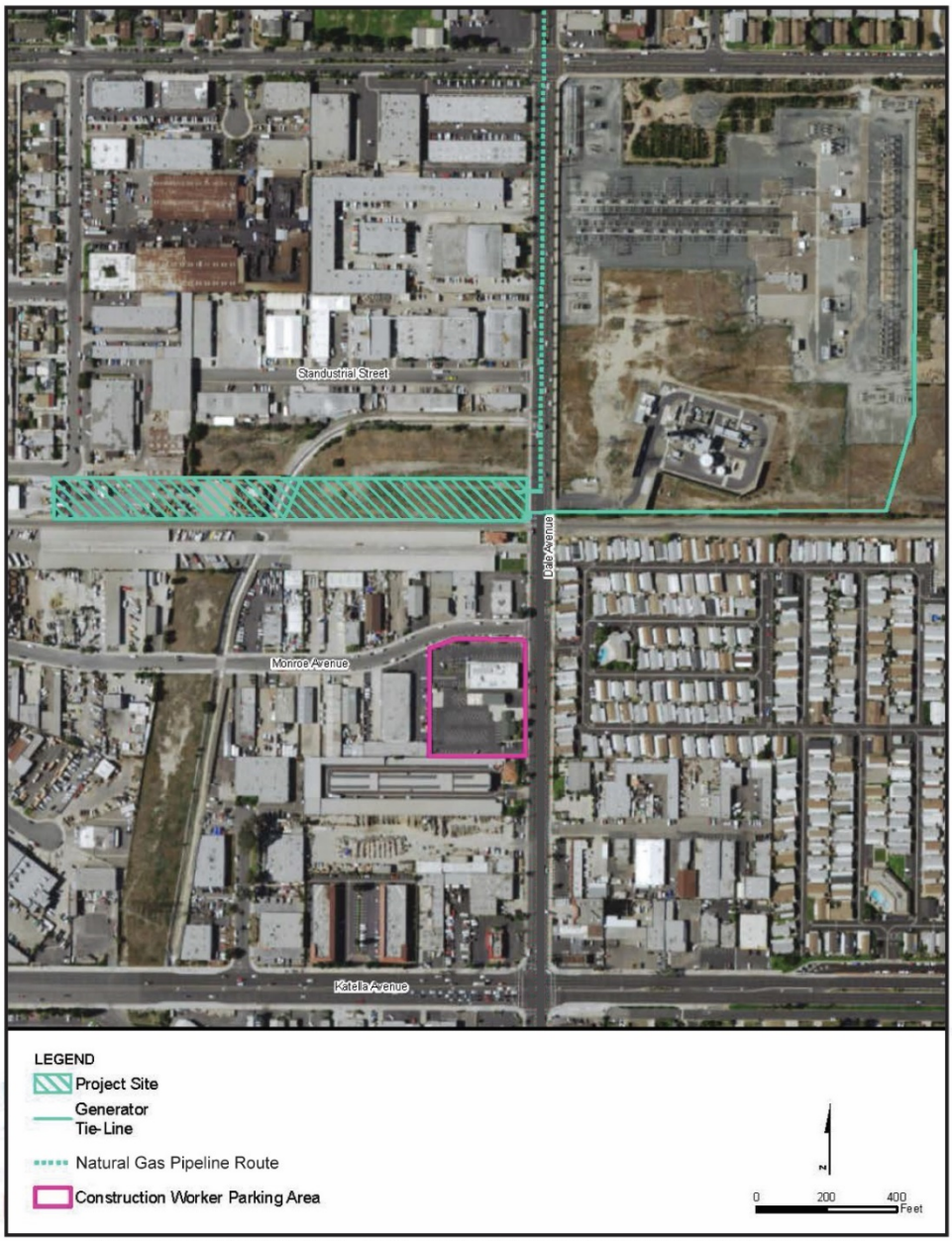
PROJECT DESCRIPTION

Ex. 300, p. 3-14. (Note: the southern gas line alternative was removed from consideration by the Applicant (see Ex. 92).

PROJECT DESCRIPTION - FIGURE 2
Stanton Energy Reliability Center - Architectural Rendering

Ex. 300, p. 3-15.

PROJECT DESCRIPTION - FIGURE 3
Stanton Energy Reliability Center - Construction Worker Parking Area



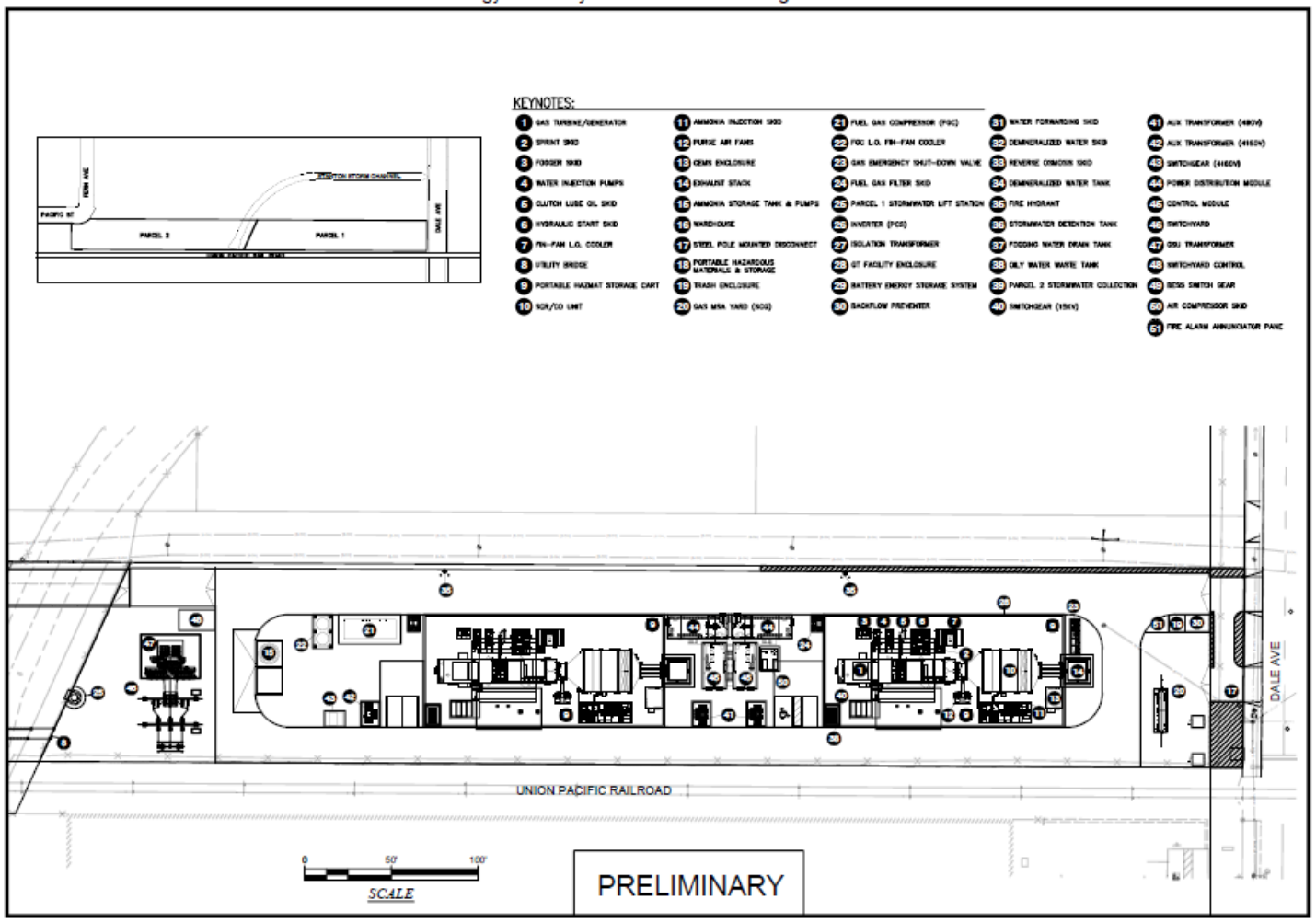
CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMETAL PROTECTION DIVISION
SOURCE: AFC Figure 2.1-5

PROJECT DESCRIPTION

Ex. 300, p. 3-16. (Note: the southern gas line alternative was removed from consideration by the Applicant (see Ex. 92).

PROJECT DESCRIPTION - FIGURE 4A

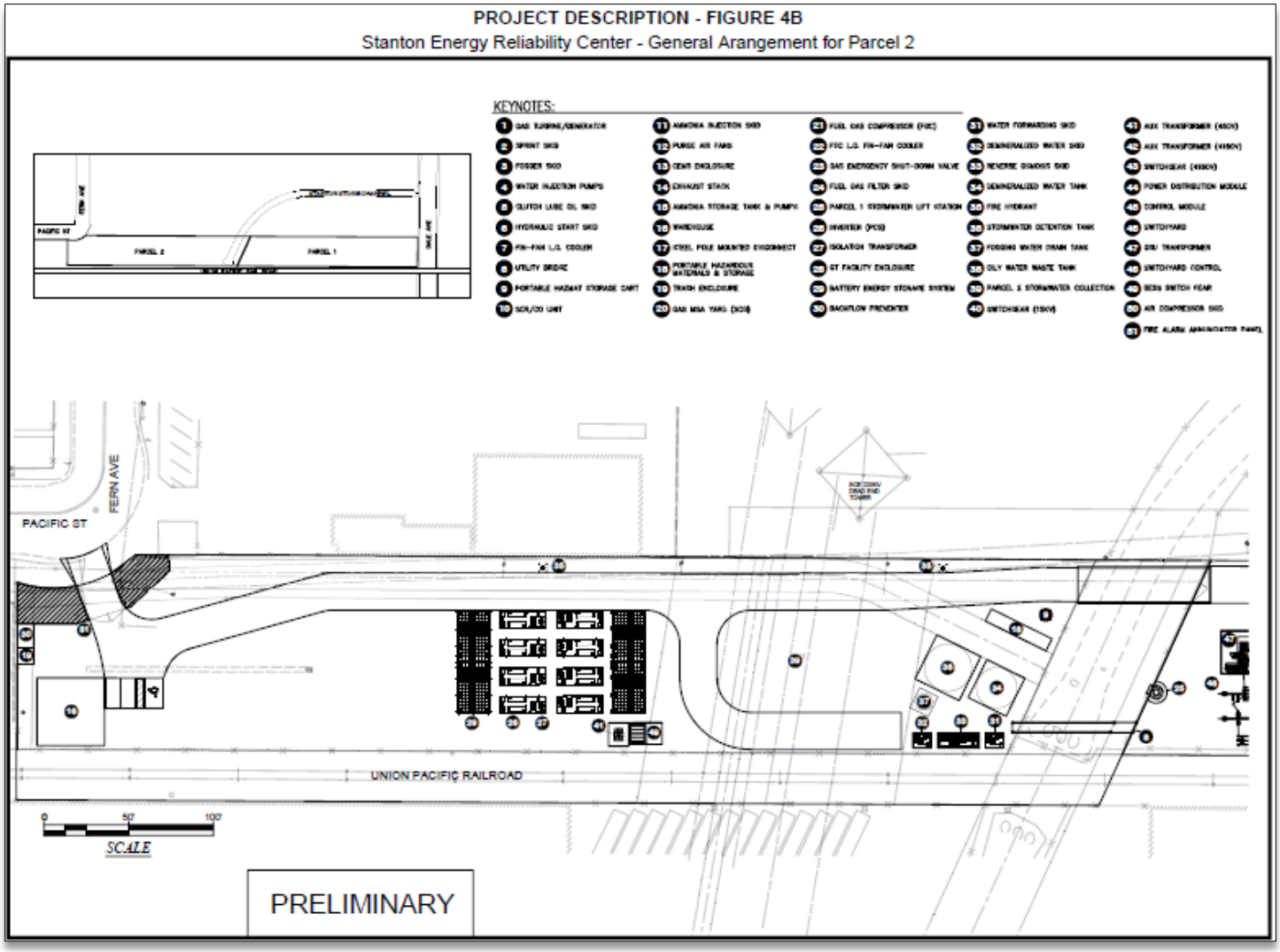
Stanton Energy Reliability Center - General Arrangement for Parcel 1



Ex. 300, p. 3-17.

PROJECT DESCRIPTION - FIGURE 4B

Stanton Energy Reliability Center - General Arangement for Parcel 2



Ex. 300, p. 3-18.

III. PROJECT ALTERNATIVES

INTRODUCTION

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

Evidence on the topic of Project Alternatives is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 10, 27, 28, 31, 100, 102, 103, 300, 302, 303, and 304.[2]

The California Public Utilities Commission (CPUC) issues decisions authorizing procurement of new electrical capacity by the state's investor-owned utilities to meet local reliability needs. In two recent CPUC decisions in its Long-term Procurement Plan (LTPP) proceeding, levels of procurement are specified for preferred resources,[3] energy storage, and natural gas fired generation. These procurement authorizations are intended to ensure local reliability following the potential retirement of once-through-cooled generation facilities in the Southern California portion of the California Independent System Operator (California ISO) balancing authority area and permanent closure of the San Onofre Nuclear Generating Station (SONGS).[4]

To evaluate the electrical system's needs, the CPUC's LTPP proceeding takes a 10-year-ahead look at system, local, and flexible resource needs. The assumptions are developed in conjunction with the Energy Commission's demand forecasting and the California ISO's transmission planning.

In February 2013, as part of its 2012 LTPP proceeding, the CPUC issued a decision[5] ordering Southern California Edison (SCE) to procure between 1,400 and 1,800 MW of electrical capacity in the West Los Angeles Basin to meet the identified long-term, local-capacity requirements (LCR) by 2021. The authorization for new capacity was ordered to maintain reliability after the potential retirement of approximately 7,000 MW of once-through-cooled capacity in the West Los Angeles Basin and Big Creek/Ventura local

[1] Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e).
[2] 8/2/18 RT pp. 29:20 – 30:14.
[3] CPUC Decisions D.13-02-015 and D.14-03-004. Preferred resources would be energy efficiency, demand response, and utility-scale and distributed renewable generation (Ex. 300, p. 6-3).
[4] Ex. 300, p. 6-3.
[5] CPUC Decision D.13-02-015, referred to as the "Track 1 Decision" (Ex. 300, p. 6-4).

areas. In March 2014, the CPUC issued a subsequent decision[6] ordering SCE to procure an additional 500 to 700 MW by 2021 to meet local-capacity needs stemming from the retirement of the San Onofre Nuclear Station.[7]

Using hybrid enhanced gas turbine (EGT) technology, the SERC would combine dispatchable, operationally flexible and efficient energy generation with state-of-the-art energy storage technology to meet the need for new local capacity and reliability services, specifically in the West Los Angeles Basin local reliability area of SCE's service territory. To achieve the SERC's primary objective, the Applicant participated in SCE's 2013 Local Capacity Requirements Request for Offers by submitting several project proposals. SCE, with the assistance of an independent evaluator and the CPUC's Procurement Review Group, considered over 100 proposals in this procurement and selected the SERC. SCE and the Applicant entered into a Resource Adequacy Purchase Agreement (RAPA) for two simple-cycle combustion turbines with a total expected contract capacity of 98 MW, which the CPUC approved in November 2015. SCE and the Applicant entered into a second RAPA pursuant to SCE's 2014 Energy Storage Request for Offers, which the CPUC approved in September 2016. That contract is for 1.3 MW of lithium-ion battery storage capable of providing its contract capacity for a four-hour period, or 5.2 megawatt-hours (MWh).[8]

SETTING AND PROJECT DESCRIPTION

The SERC includes a battery energy storage system of two lithium-ion batteries, each with a nominal capacity of 10 MW (total 20 MW) and 4.3 megawatt-hours (MWh) storage (total 8.6 MWh).[9] The SERC has a contract for 1.3 MW of battery storage capable of providing its contract capacity for a four-hour period (1.3 MW x 4 hours = 5.2 MWh). [10] Staff estimated that the SERC's battery storage system would have the flexibility to discharge within a range of varying energy to power ratios for varying periods (e.g., 20 MW for 30 minutes or 2.5 MW for four hours, both totaling 10 MWh).[11]

For detailed information regarding the setting and project description, including location of the facility and the proposed equipment of the SERC project, please refer to the **PROJECT DESCRIPTION** section of this Decision.[12]

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[6] CPUC Decision D.14-03-004, referred to as the "Track 4 Decision" (Ex. 300, p. 6-4).
[7] Ex. 300, p. 6-4.
[8] Ex. 300, p. 6-4.
[9] Ex. 88, pdf p. 94.
[10] Ex. 300, p. 6-4.
[11] Ex. 300, p. 6-9.
[12] Ex. 300, p. 6-4.

PROJECT OBJECTIVES

The Applicant identifies the SERC's primary objective to be a state-of-the-art energy reliability resource. The Applicant designed the SERC to deliver reliability services with a minimal carbon footprint and a low emissions profile using the EGT technology, which combines a combustion gas turbine with an integrated battery storage component operated by a proprietary software system.[13]

In addition to the primary objective, per the Applicant, these are the SERC's basic project objectives:

- Safely construct and operate an electrical energy reliability facility to meet SCE's need for local capacity in the West Los Angeles sub-area of the Los Angeles Basin local reliability area of its service territory;
- Use Wellhead's patent pending EGT technology to provide the following:
    - Greenhouse gas free operating reserve;
    - Flexible capacity without start time;
    - Peaking energy for local contingencies;
    - Voltage support and primary frequency response without fuel burn; and
    - Superior transient response attributable to co-location of gas turbines and battery/gas turbine management of battery state-of-charge in real time;
- Site the project as near as possible to an SCE substation with available transmission capacity to serve the West LA Basin and minimize the generation tie-line length;
- Site the project in an existing industrial area on a previously disturbed site to minimize environmental impacts;
- Site the project in a community that embraces the project and its new technology; and
- Safely construct and operate an electrical energy reliability project that would satisfy the commercial obligations of both Resource Adequacy Purchase Agreements.[14]

ENVIRONMENTAL ANALYSIS

CEQA requires that we consider a reasonable range of alternatives that could feasibly accomplish most of the basic project objectives while avoiding or substantially lessening one or more of the significant effects. The alternative, or range of alternatives including the "No Project" alternative, is governed by the "rule of reason," and need not include those alternatives whose effects cannot be reasonably ascertained and whose

[13] Ex. 300, p. 6-3.

[14] Ex. 7, pp. 1-1 and 1-2, Ex. 300.

implementation is remote and speculative. Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project."[15]

The record contains the rationale for eliminating certain alternative sites, because either the lot sizes were too small for the SERC project or the project was unacceptable to the local jurisdiction.[16]

Alternative locations were eliminated from consideration because either the lot size was too small, the alternative was unacceptable to the local jurisdiction, the alternative would not avoid significant environmental effects, or the alternative would cause significant effects that would not be caused by the SERC. In addition to the SERC, further environmental analysis was conducted for the following three alternative sites.[17]

Alternative Sites

Alternative Site 1: Warner Site

The Warner Site is a rectangular parcel encompassing approximately 4.5 acres at 1312 East Warner Avenue within the city of Santa Ana, California. The Warner Site is located approximately 10 miles southeast of the SERC site. It is bounded by East Warner Avenue to the north, Orange County Fire Station No. 79 property to the east, the existing SCE Johanna Substation to the south, and Beeson Lane to the west. The site is within a large industrial area with residential areas to the west.[18]

An asphaltic concrete contractor is currently using the Warner Site. An existing warehouse building is located in the northwestern corner of the property and is used for equipment maintenance and storage. The remainder of the property is used for truck parking and stockpiling of materials for use in the making of asphaltic concrete. The current zoning and General Plan designation are consistent with industrial uses. The site is adjacent to the Johanna Substation and was selected for evaluation because of SCE's need for generation at the Johanna Substation.

The natural gas pipeline would extend easterly along Warner Avenue and interconnect to an existing natural gas pipeline on the eastern side of South Grand Avenue. The generation tie-line would be constructed underground directly into the adjacent Johanna Substation. Water would be provided to the site by the City of Santa Ana Municipal Utility via an existing water pipeline located in Warner Avenue.

[15] Cal. Code Regs., tit. 14, § 15126.6.
[16] Ex. 300, pp. 6-5 – 6-8.
[17] Ex. 300, pp. 6-5 – 6-8.
[18] Ex. 300, pp. 6-6 – 6-7.

The Warner Site is located within the John Wayne Airport flight path (conventional west arrival pattern) and located within a notification area and airport obstruction imaginary surface area for the primary runway, thereby creating potential issues with thermal plumes from the plant. In addition, contaminated soils and groundwater are potentially present beneath the Warner Site along with known California Department of Toxic Substances Control issues at the site immediately to the north.[19]

As discussed in the **SOIL & WATER RESOURCES** section of this Decision, Phase I and II Environmental Site Assessments were conducted for the SERC site, which found there are no soil or groundwater conditions that could make the SERC site unsuitable for construction of the SERC.[20]

As discussed in the **TRAFFIC & TRANSPORTATION** section of this Decision, the Los Alamitos Army Airfield (LAAA) is located approximately 2.9 miles from the SERC site. Due to the remote chance of a low-altitude overflight to or from the LAAA coinciding with both operation of the SERC and the rare weather conditions (cool temperatures and calm winds) that would create a worst-case plume (exceeding the 10.6 meter/second peak velocity threshold at altitudes up to 450 feet above ground level), potential impacts to aviation related to flights to or from the LAAA are found to be less than significant.[21]

The Warner Site was eliminated from further detailed consideration because it would not avoid significant environmental effects of the project and could cause significant effects that would not be caused by the project.

Alternative Site 2: Birch Street Site

The Birch Street Site is approximately 7.8 acres in size and is located at 2620 Birch Street in Santa Ana, California. This site is located approximately nine miles southeast of the SERC site and approximately one mile west of the Warner Site. It is bounded on the north by a restaurant depot and parking area for food trucks, on the east by Birch Street, on the south by a plant nursery, and on the west by an abandoned rail spur and industrial uses. The zoning and General Plan designation are consistent with industrial uses. The area is generally dominated by industrial uses with the closest residential areas approximately 0.25 mile to the west and to the south of the site.

The parcel is currently developed with a large unoccupied building that would need to be demolished. A preliminary records search has revealed that the property was once used by BASF for the making of high-quality recording tape and was subject to groundwater cleanup.

[19] Ex. 300, p. 6-7.
[20] Ex. 300, p. 4.10-18.
[21] Ex. 300, pp. 4.11-18 – 4.11-19.

The natural gas pipeline for the Birch Street Site would extend northward along Birch Street, continue easterly along Warner Avenue and connect to an existing natural gas pipeline on the eastern side of South Grand Avenue 1.45 miles away. The generator tie-line would be constructed underground, would likely have the same route as the natural gas pipeline on Warner Avenue, and then connect to the Johanna Substation 1.33 miles away. The City of Santa Ana Municipal Utility would provide water to the site via an existing water pipeline located in Birch Street.[22]

The Birch Street Site was eliminated from further detailed consideration because the site is located within the John Wayne Airport flight path (conventional west arrival pattern) and located within the FAR Part 77 notification area and airport obstruction imaginary surface area for the primary runway, thereby creating potential issues with thermal plumes from the plant.

Similar to the Warner Site discussed above, when comparing the SERC site and the Birch Street Site, there would be fewer potentially significant thermal plume related impacts at the SERC site. Thus, the Birch Street Site was eliminated from further detailed consideration because it would not avoid significant environmental effects of the project and could cause significant effects that would not be caused by the project.

Alternative Site 3: Carson Site

The Carson Site is located at 18937 Main Street in Carson, California. It is approximately 4.6 acres and is zoned Heavy Manufacturing. The site is bounded on the north by Griffith Street, on the east by Main Street, on the south by an existing trucking facility, and on the west by Broadway Street. The site was historically used for manufacturing wood-based products between approximately 1940 and 1980.[23]

Contaminated soils and groundwater are potentially present beneath the Carson Site and the Goodyear Blimp operates less than 1,000 feet away.[24]

As discussed in the **SOIL & WATER RESOURCES** section of this Decision, Phase I and II Environmental Site Assessments were conducted for the SERC site, which found there are no soil or groundwater conditions that could make the SERC site unsuitable for construction of the SERC.[25]

[22] Ex. 300, p. 6-7.
[23] Ex. 300, p. 6-8.
[24] Ex. 300, p. 6-8.
[25] Ex. 300, p. 4.10-18.

The SERC site is located approximately 17 miles southeast of the Goodyear Blimp operations and would not cause any thermal plume impacts to Blimp operations in comparison to the Carson Site.

The Carson Site was eliminated from further detailed consideration because it would not avoid significant environmental effects of the project and could cause significant effects that would not be caused by the project.

Generation Technology Alternatives

In evaluating generating technology alternatives, the Energy Commission must consider both state policy on how to best meet electrical demand and the ability of alternative technologies to achieve project objectives and contribute to maintaining system reliability.

Of the preferred resources discussed in the Final Staff Assessment (Exhibit 300), Staff testified that energy storage was the only reasonably feasible preferred resource to carry forward for detailed consideration as a project alternative. Energy efficiency and demand response programs are included in planning assumptions when determining new capacity needs and are not achievable alternatives by the Applicant. Distributed solar (constituting the majority of distributed renewables) is not dispatchable, and thus lacks the most significant operating characteristic of natural gas fired generation of the SERC. Utility scale renewable generation such as wind and solar require significantly more land than the SERC and are intermittent generation resources. The evidence shows that the 4.5-acre SERC site is only capable of producing "perhaps 0.65 MW of Solar PV production under the best of conditions."[26] One MW of production requires roughly 6.9 acres.[27] Energy efficiency, demand response programs, and distributed solar and wind would not meet the primary objective of Stanton to provide local reliability.[28]

BATTERY ENERGY STORAGE ALTERNATIVE

The Battery Energy Storage Alternative would consist of a battery charging and storage system that would expand the proposed battery energy storage five times. Specifically, four additional 20 MW battery energy storage units would replace the two generators on Parcel 1 for a total power rating of 100 MW. Staff testified that under this alternative, the 100 MW charging and storage units would be able to provide 50 MWh of energy. For

[26] Ex. 101, p. 14; Ex. 97, p. v, Table ES-1.
[27] *Id*.
[28] Ex. 300, p. 6-5 (See the "Meeting California's Energy Needs" subsection of the Introduction section of the Final Staff Assessment for detailed information about the energy planning and procurement process and the roles of these preferred resources Ex. 300, pp. 2-6 – 2-9. Also see the Power Plant Efficiency section of this Staff assessment for evaluation of the project alternatives that could reduce wasteful, inefficient, or unnecessary energy consumption (Ex. 300, pp. 5.3-5 – 5.3-7).

example, depending on design and intended purpose, a system of this energy storage capacity could be capable of delivering 100 MW for half an hour (100 MW x 0.5 hours = 50 MWh) or 12.5 MW for four hours (12.5 MW x 4 hours = 50 MWh).[29]

Energy recovery from battery energy storage does not involve on-site combustion of fossil fuels, and this alternative would not require the on-site fuel system equipment that would support the SERC project design as proposed. The battery charging and storage system under this alternative would store energy from the electric grid (generally when supplies are high and/or when prices are relatively low) and discharge electricity to the grid during periods of high demand. These operations could be accomplished to the extent allowed to do so under a contract to provide local resource adequacy services to SCE and the California ISO.[30]

The (generation) sources of energy from the transmission grid would vary depending on the grid system's supply portfolio and the daily and seasonal time profile of electricity demand across the western United States, and thus would evolve over time. Potential generation sources would also depend on the contract provisions for the hours in the day when the batteries were allowed to be charged and discharge electricity to the grid. The probable sources of energy used to recharge the batteries would tend towards surplus electricity (i.e., excess solar and wind generation). [31]

Battery energy storage can provide reliability services, including frequency regulation, transmission congestion relief, electric supply reserve capacity, voltage support, and load shifting. Battery storage can also provide operational flexibility, having the capability to discharge electricity back to the grid virtually instantaneously. [32]

Potential to Attain the Project Objectives

The first project objective is to provide a state-of-the-art energy reliability resource and to construct and operate an electrical energy reliability facility to meet SCE's need for local capacity in the West LA Basin local reliability area of its service territory. Staff's Battery Energy Storage Alternative could contribute to meeting the local capacity need (i.e., the underlying project purpose) and would reduce or avoid some environmental impacts associated with operation of two turbine generators. Although this alternative could contribute to meeting the local capacity requirement need (i.e., the underlying project purpose) and would further reduce some less than significant environmental impacts associated with a natural gas fired project, this alternative would not provide an equivalent

[29] Ex.300, p. 6-9.
[30] Ex.300, p. 6-9.
[31] Ex.300, pp. 6-9 – 6-10.
[32] Ex.300, p. 6-9.

level of long-term local reliability (i.e., greater than 50 MWh of energy) that the SERC project would.[33]

Environmental Analysis

The battery energy storage alternative would not involve on-site use of fossil fuels for power generation. The Staff testified that given the likely sources to charge the batteries would tend towards surplus electricity (i.e., excess solar and wind generation) rather than fossil fuel-based sources depending upon the time at which the batteries are being recharged, the increased air emissions and associated air quality and public health impacts during operational activities would be less for this alternative than the SERC project.[34]

The battery energy storage alternative would present a nearly identical hazardous materials risk profile as would the SERC project, although the risks and hazards would be presented by different project components. Staff's assumptions for the hazardous materials profile only holds true if the conceptual design is generally based on the expansion of the proposed battery energy storage system at the SERC, which uses a series of many individual lithium-ion batteries. [35]

Staff testified that operating equipment for the battery energy storage alternative would generally be quieter than combustion turbine units due to several factors such as fewer large mechanical and rotating components and the absence of high-pressure fluids. However, there is no evidence of any measurement of the noise produced by large-scale battery installation or operation in the record. Nevertheless, Staff testified that project operations noise would be less than the SERC project. Although noise impacts associated with construction and operation of this alternative would likely be less than the SERC, mitigation measures may still be required to reduce potential noise impacts to less than significant levels.

Staff was unable to testify as to the comparative scale of expenditures for equipment and labor necessary to construct and operate this alternative. However, the Applicant provided some evidence on the costs of battery storage.[36]

The Applicant's cost analysis showing a battery energy storage system stand-alone cost with a net present value of $231M. This is substantially higher than the SERC's net present value of $171M. According to the Applicant's testimony, this large increment renders a battery energy storage alternative commercially infeasible. Finally, the

[33] Ex.300, p. 6-10.
[34] Ex. 300, p. 6-11.
[35] Ex. 300, p. 6-11.
[36] Ex. 102.

Applicant points out that the cost of charging a battery energy storage system could exceed the revenues received from discharging energy to the grid, which presents an "inferior commercial risk."[37]

In addition, according to the Applicant's testimony, a battery energy storage alternative lacks robust voltage support and *duration,* which are key characteristics of the SERC and are necessary project objectives. The SERC voltage regulation capability of a 0.80 power factor is far superior to a battery storage energy alternative's voltage regulation of a 0.95 power factor, and after four hours the battery energy storage is completely discharged. The Applicant argues that a battery energy storage system is not a good *duration* replacement for SONGS and is, therefore, technologically inferior when considering the purpose and characteristics of the SERC.[38]

The courts have allowed a lesser level of specificity in an alternatives analysis than that required of the SERC project, which is the subject of the application.[39] Given the record before us, we find that the battery energy storage system alternative is, at best, an equivalent technology, because both a battery energy storage alternative and the SERC would have no significant impacts. However, the SERC would be superior in this case because it attains all of the project objectives including long-term local reliability, which is the primary objective of the project.

NO PROJECT ALTERNATIVE

The SERC project site is in an area designated Industrial that is partly paved and used for vehicle storage and partly consists of disturbed area that is currently vacant. The site is zoned Industrial General (IG). There are no schools, parks or recreational areas, or other sensitive land uses immediately adjacent to the site.

Under the No Project Alternative, the Energy Commission would not issue a license to the Applicant to construct and operate the SERC project. Staff assumes that the existing uses would continue at the site and the estimated fiscal benefits of the project would not be realized. No other use is predicted to occur at the site in the foreseeable future if the SERC project is not built. However, additional capacity would need to be obtained elsewhere in the West Los Angeles Basin to meet the identified long-term local capacity requirements by 2021. It is uncertain what potential environmental impacts this additional capacity would entail. Therefore, the No Project Alternative is characterized by the

[37] Ex. 101, p. 15.
[38] Ex. 101, p. 15.
[39] *Al Larson Boat Shop, Inc. v. Board of Harbor Commissioners* (2d Dist. 1993) 18 Cal. App. 4th 729, 745-746.

continuation of existing conditions at the SERC site. The No Project Alternative would avoid all of the potential impacts at the project site.

If the SERC project were not constructed, the Applicant's basic project objectives would not be met, and the grid reliability and environmental and policy benefits from this highly dispatchable and flexible project would not be realized. The SERC's wide range of operational capabilities offers flexible capacity to support electrical system stability and reliability during periods of rapidly diminishing wind or solar output and in response to other instances of grid instability. Enhanced stability of the electrical grid would also allow for further integration of renewable resources, providing the state with a path forward toward achieving the 50 percent Renewables Portfolio Standard mandate set forth in Senate Bill 350. Further, the No Project Alternative would not contribute to meeting California's environmental policy goals of encouraging development and deployment of preferred resources such as the energy storage features of the SERC.

The No Project Alternative could avoid several environmental impacts relating to construction and operation of the SERC project. However, greater air pollution could result in the state if older less-efficient plants with higher air emissions continue to generate power instead of being replaced with cleaner, more flexible, and more efficient plants such as the SERC project. Moreover, the No Project Alternative would not attain the project's basic objectives and would not provide electrical system benefits including support for the integration of renewable energy and the deployment of energy storage features. Therefore, the No Project Alternative would not be the environmentally superior alternative. Additionally, the estimated fiscal benefits of the SERC project would not occur under the No Project Alternative.[40]

AGENCY AND PUBLIC COMMENT

On June 22, 2018, the Clean Coalition (CC) petitioned to Intervene[41] and the intervention was granted on June 28, 2018.[42] The CC participated in the July 25, 2018 Prehearing Conference[43] and filed testimony,[44] but withdrew their intervention on July 31, 2018,[45] prior to the Evidentiary Hearing.[46]

The CC argued that the Energy Commission failed to fully evaluate a reasonable range of feasible alternatives to the SERC because it failed to:

[40] Ex. 300, p. 6-13.
[41] TN 223912.
[42] TN 223985.
[43] TN 224448.
[44] TNs 224025, 224026, 224174, 224026.
[45] TN 224324.
[46] TN 224449.

1. Evaluate the potential for Dispatchable Demand Response (DDR) to meet the local reliability needs, rather than dismissing DDR without substantial evidence to support such a dismissal;

2. Evaluate dispatchable solar plus storage alternatives, which are cost-effective and feasible; and

3. Evaluate a multi-site Battery Energy Storage Alternative of adequate size to meet the local reliability needs, rather than using artificial geographic constraints to contrive an inadequate alternative.[47]

In its letter requesting withdrawal, the CC requested that its submissions be treated as a public comment.[48]

RESPONSE: Thanks to the participation of the CC, the record is now replete with analyses of the three alternatives that the CC proposed. Substantial evidence in the record makes clear that the CC misunderstood that the SERC was not a peaker power plant, but is instead designed to provide GHG-free spinning reserves. Applicant's evidence established that a demand response alternative cannot provide both voltage support and duration of more than several hours a day. The SERC can run for days if required by CAISO. The CC's solar plus storage alternative also mistakenly assumes that the SERC is designed to be a peaker plant. The Applicant's expert testified,

> "Clean Coalition is proposing an energy facility with an absolute and forced production of energy; the Solar PV component, whether ground mounted or rooftop Solar PV, is going to produce energy every day.[49] All of Clean Coalition's cited referenced solar plus storage projects are energy projects…. This is contrary to the SERC project, which is a reliability and capacity facility with minimal expected energy production, with any minimal energy production dedicated to serving local contingencies and LCR in the West LA basin. Being a reliability and capacity facility is consistent with the SERC project objectives. Being an energy facility is not consistent with SERC project objectives."

The Applicant also established that the SERC site would be too small to accommodate the land area needed for the CC's proposed solar plus storage alternative. As to battery energy storage, the Applicant again established that this alternative would not meet most of the SERC's project objectives.[50]

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[47] TN 224025; 7/25/18 RT 25:14 – 31:16.
[48] TN 224324.
[49] Ex. 101, p. 8.
[50] Ex. 101, pp. 2-19.

Therefore, we have found that the analysis of alternatives in the record is adequate and that the range of alternatives analyzed is reasonable.

FINDINGS OF FACT

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

1. The evidence shows consideration of a reasonable range of alternatives to the Stanton Energy Reliability Center project, including three alternative site locations, a battery energy storage alternative, and a no-project alternative.
2. The three alternative site locations were eliminated from further detailed consideration because none of them avoided significant environmental effects of the Stanton Energy Reliability Center and could cause significant effects that would not be caused by the Stanton Energy Reliability Center.
3. The 100-percent battery energy storage alternative would not meet the primary objective of the Stanton Energy Reliability Center, which is to provide reliable energy.
4. The battery energy storage alternative is at best an equivalent, but more likely an inferior, alternative to the Stanton Energy Reliability Center.
5. Due to the intermittent nature of wind and solar alternative technologies, distributed and utility-scale wind and solar alternative technologies do not meet the primary objective of the Stanton Energy Reliability Center, which is to provide reliable energy.
6. None of the alternative site locations analyzed were capable of meeting the stated project objectives without causing potential significant environmental effects that would not be caused by the Stanton Energy Reliability Center.
7. The “no project” alternative would not meet most of the basic objectives and would not provide electrical system benefits including support for the integration of renewable energy.

CONCLUSIONS OF LAW

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

IV. COMPLIANCE MONITORING PLAN

THE COMPLIANCE PLAN AND CONDITIONS OF CERTIFICATION

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

The Compliance Monitoring Plan is the administrative mechanism used to ensure that the Stanton Energy Reliability Center (SERC) is constructed and operated according to the conditions of certification. It describes the respective duties and expectations of the project owner and the Energy Commission Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.[1]

Compliance with the conditions of certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Compliance Monitoring Plan also contains requirements governing the future planned closure, as well as the unexpected temporary and unexpected permanent closure, of the project.[2]

The Compliance Monitoring Plan Elements

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;
- 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; and
- the requirements for facility closure.[3]

The second element of the Compliance Monitoring Plan contains the specific conditions of certification. These are also found in **Appendix A** following the discussion of each

[1] Ex. 300 pp. 7-1 – 7-9.
[2] Ex. 300, p. 7-3.
[3] Ex. 300, p. 7-1.

individual topic area in this Decision. The individual conditions contain the measures required to mitigate potentially adverse impacts associated with the construction, operation, and closure of the SERC to levels of insignificance. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied.[4]

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.

AGENCY AND PUBLIC COMMENT

No agency or public comments were received on the topic of the Compliance Monitoring Plan.

FINDINGS OF FACT

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

1. Requirements contained in the Compliance Monitoring Plan and in the specific conditions of certification are intended to be implemented in conjunction with one another.
2. We adopt the Compliance Monitoring Plan and conditions of certification contained in **Appendix A** as part of 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 specific conditions of certification contained in this Decision ensure that the Stanton Energy Reliability Center will be designed, constructed, operated, and closed in conformity with all applicable laws, ordinances, regulations, and standards.

[4] Ex. 300, pp. 7-10 – 7-25.

V. ENGINEERING ASSESSMENT

The broad engineering assessment of the proposed Stanton Energy Reliability Center (SERC) consists of separate analyses that examine the project's facility design and engineering elements, power plant efficiency, and power plant reliability. These analyses include the on-site generating equipment and the project-related linear facilities.

A. FACILITY DESIGN

INTRODUCTION

The California Energy Commission must determine whether the SERC would be designed, sited, and operated to ensure safe and reliable operation.[1] This section assesses the civil, electrical, mechanical, and structural engineering elements related to project design and construction of the SERC.

Evidence on the topic of Facility Design is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 9, 31, 32, 47, 104, and 300.[2]

SETTING AND PROJECT DESCRIPTION

The SERC will be located in the city of Stanton in an area that is zoned Industrial General (City of Stanton IG zoning district).

The SERC consists of two 48-megawatt General Electric (GE) LM6000PC natural gas fired combustion turbine generators (CTG) in a simple-cycle configuration; two (10-MW and 4.3-MWh each) battery energy storage systems, and synchronous condensing support.

For more information on the site and its related project description please see the **PROJECT DESCRIPTION** section of this Decision.[3]

ASSESSMENT OF IMPACTS AND DISCUSSION OF MITIGATION

The purpose of this facility design analysis is to ensure that the SERC power plant and linear facilities are described with sufficient detail to ensure it can be designed and constructed in accordance with applicable engineering codes, is consistent with applicable laws, ordinances, regulations, and standards (LORS), and ensures public health and safety.[4] In general, this analysis also evaluates the Applicant's proposed design criteria, describes the design review and construction inspection process, and establishes conditions of certification. These conditions allow both

[1] Pub. Res. Code § 25520(b); Cal. Code Regs, tit. 20, §§ 17411741(b)(3); 1745.5(b)(15).
[2] 8/2/18 RT pp. 29:20 – 30:14.
[3] Ex. 300, p. 5.1-3.
[4] Ex. 300, p. 5.1-1.

the California Energy Commission, the compliance project manager (CPM) and the project owner to adopt a compliance monitoring program that will verify compliance with these LORS.[5]

SITE PREPARATION AND DEVELOPMENT

The SERC will utilize the use of accepted industry standards, design practices, and construction methods in preparing and developing the site and will comply with all applicable site preparation LORS. To ensure compliance, we impose the conditions of certification listed below and in the **GEOLOGY AND PALEONTOLOGY** section of this document.[6]

MAJOR STRUCTURES, SYSTEMS, AND EQUIPMENT

Major structures, systems, and equipment are defined as structures (and their associated components or equipment) that are necessary for power production, are costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS.[7]

The SERC project will be designed and constructed to the 2016 California Building Standards Code (CBSC), also known as California Code of Regulations Title 24. If the initial designs are submitted to the chief building official (CBO) for review and approval after the update to the 2016 CBSC takes effect, the designs shall comply with the updated CBSC.[8]

Pursuant to CBSC, certain structures in a power plant may be required to undergo dynamic lateral force (structural) analysis, while others may be designed using the simpler static analysis procedure. In order to ensure that structures are analyzed according to their appropriate lateral force procedure, we have included Condition of Certification **STRUC-1**, which, in part, requires the project CBO to review and approve the proposed lateral force procedures before construction begins.[9],[10]

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[5] Ex. 300, p. 5.1-3.

[6] Ex. 300, p. 5.1-3.

[7] Ex. 300, 5.1-3.

[8] Ex. 300, p. 5.1-3.

[9] Note that analysis and proposed conditions of certification for all transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the **TRANSMISSION SYSTEM ENGINEERING** section of this Decision

[10] Ex. 300, p. 5.1-4.

PROJECT QUALITY PROCEDURES

A quality assurance/quality control program will be implemented to ensure that the SERC project's systems and components are designed, fabricated, stored, transported, installed, and tested in accordance with all appropriate power plant technical codes and standards[11]. Compliance with design requirements will be verified through specific inspections and audits.

COMPLIANCE MONITORING

The CBO[12] is authorized and directed to enforce all provisions of the California Building Code ("CBC" and part of California Building Standards Code). The Energy Commission serves as the building official, and has the responsibility to enforce the CBC for all of the energy facilities it certifies. In addition, the Energy Commission has the power to interpret the CBC and adopt and enforce both rules and supplemental regulations that clarify application of the CBC's provisions.[13]

The Energy Commission's design review and construction inspection process conforms to CBC requirements and ensures that all facility design conditions of certification are met.

The Energy Commission appoints delegate CBOs to perform design review and construction inspections on behalf of the Energy Commission. These delegate CBOs may include the local building official and/or independent consultants hired to provide technical expertise that is not provided by the local official alone. When an entity has been assigned CBO duties, Staff will enter into an agreement with that entity to outline both its roles and responsibilities and those of its subcontractors and delegates.[14] The project owner shall pay the cost of these reviews and inspections.

The record contains proposed conditions of certification designed to ensure protection of public health and safety and compliance with engineering design LORS. Some of these conditions address the roles, responsibilities, and minimum qualifications of the engineers who will design and build the proposed project (Conditions of Certification **GEN-1** through **GEN-8,** in **Appendix A**).

While the Energy Commission and delegate CBO have the authority to allow some flexibility in scheduling construction activities, Conditions of Certification **GEN-1** through **GEN-8** are written so that no element of construction, which could be difficult to reverse or correct, can proceed without prior CBO approval. Elements of construction that are not difficult to reverse may proceed without approval of the

[11] Ex. 7, pp. 2-31 – 2-36; EX. 32.
[12] 2016 CBC, division II, section 104.
[13] Ex. 300, p. 5.1-4.
[14] Ex. 300, p. 5.1-4.

plans. The SERC owner bears the responsibility to fully modify construction elements in order to comply with all design changes resulting from the CBO's subsequent plan review and approval process.[15]

FACILITY CLOSURE

Facility closure is defined in the **COMPLIANCE MONITORING PLAN** section of this Decision, as a facility shutdown with no intent to restart operation. In order to ensure that facility closure would be completed in a manner that is safe, environmentally sound, and protects the public health and safety, the project owner must submit a closure plan to the Energy Commission for review and approval prior to the commencement of closing the facility. This is required in Condition of Certification **COM-15** (Facility Closure Planning).[16]

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

The conditions of certification enable both the Energy Commission compliance project manager (CPM) and the Applicant to adopt a compliance monitoring program that will verify compliance with LORS. The LORS, below, are applicable to the SERC project. The **FACILITY DESIGN** conditions of certification are contained in **Appendix A** at the end of this Decision.[17]

Facility Design Table 1
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSIONS
FEDERAL		
Title 29 of the Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards. (29 C.F.R. § 1910.)	These regulations are intended to fulfil the purpose of the Federal Occupational Safety and Health Act of 1970: imposing safety requirements in the workplace with the purpose of assuring so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve human resources.	**Compliant**. See the **WORKER SAFETY and FIRE PROTECTION** section of this Decision. Conditions of Certification **WORKER SAFETY-1** through **-4** incorporate sufficient measures to ensure adequate enforcement of industrial safety. These sections describe the plans and procedures which will be implemented to ensure compliance with health and safety procedures and regulations, for the protection of all workers, particularly industrial workers. A Safety Monitor will report directly to the CBO and CPM and will be

[15] Ex. 300, p. 5.1-5.
[16] Ex. 300, p. 5.1-5.
[17] Ex. 300, p. 5.1-2.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSIONS
		responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification **WORKER SAFETY-3,** which implements all appropriate Cal/OSHA, Federal, and Energy Commission safety requirements.[18]
STATE		
California Building Standards Code (CBSC). Also known as Title 24, California Code of Regulations (Cal. Code Regs., tit. 24).	2013 Triennial Edition (2016 Triennial Edition effective January 1, 2017). Includes the California Building Standards Code. Encompasses the California Building Code, California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and other applicable codes and standards in effect when the design and construction of the project actually begin.	**Compliant.** Condition of Certification **GEN-1** requires and ensures compliance with the most current CBSC.[19]
LOCAL		
Stanton Municipal Code, titles 13, 16 (Division I and II) and 20	City of Stanton Municipal Code regarding public utilities, building and construction regulations and zoning ordinances.	**Compliant.** The Facility Design conditions of certification require the project to comply with the city of Stanton building and engineering regulations and ordinances to ensure that the project will be built to applicable engineering codes and ensure public health and safety. See also, Condition of Certification **MECH-1** which require and ensure compliance with engineering LORS[20].
STANDARDS		
American National Standards Institute (ANSI)	Professional industry standards for welding, boilers, and other activities, machinery, and items involved with the Project.	**Compliant.** Condition of Certification **GEN-1**, **GEN-6**, **MECH-1** and **MECH-2** requires

[18] Ex. 300, p. 4.14-5.

[19] Ex. 300, pp. 5.1-5; 5.1-6.

[20] Ex. 300, pp. 5.1-17 – 5.1-18.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSIONS
American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)		and ensure compliance with these LORS.[21]

The evidence indicates that the design, construction, and eventual closure of the SERC project and its linear facilities will comply with applicable LORS. The **FACILITY DESIGN** conditions of certification ensure compliance with these LORS.

AGENCY AND PUBLIC COMMENT

We have received no public comment on the SERC's Facility Design.

FINDINGS OF FACT

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

1. The **FACILITY DESIGN** evidence provides a preliminary engineering design and description of the Stanton Energy Reliability Center.
2. The **FACILITY DESIGN** evidence addresses consistency with applicable engineering laws, ordinances, regulations, and standards, but does not discuss the project's potential environmental impacts, which are covered in the Environmental Assessment sections of this Decision.
3. The **FACILITY DESIGN** evidence establishes that the project will be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards.
4. The **FACILITY DESIGN** conditions of certification require the project owner to comply with the most current version of the California Building Standards Code and other applicable laws, ordinances, regulations, and standards in effect at the time that design approval and construction begin.
5. The **FACILITY DESIGN** conditions of certification require that qualified engineering personnel perform design review, plan checking, and field inspections of the project.

[21] Ex. 300, pp. 5.1-12- 5.1-13; 5.1-6; 5.1-18- 5.1-19.

6. The **FACILITY DESIGN** conditions of certification ensure that the project is designed and constructed in accordance with applicable law and in a manner that protects public health and safety.

7. The General Conditions, included in the **COMPLIANCE MONITORING PLAN** section of this Decision, delineate the requirements for closure and decommissioning of the project.

CONCLUSIONS OF LAW

1. The **FACILITY DESIGN** conditions of certification in **Appendix A** ensure that the Stanton Energy Reliability Center will be designed and constructed in conformance with the applicable laws, ordinances, regulations, and standards related to the engineering elements summarized in this section of the Decision.

B. POWER PLANT EFFICIENCY

INTRODUCTION

This section analyzes whether the Stanton Energy Reliability Center (SERC) would result in inefficient and unnecessary consumption of energy resources.

Evidence on the topic of Power Plant Efficiency is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 9, 27, 28, 31, 32, 55, 100, 101, 102, 103, 300, 301, 302, 303, and 304.[1]

SETTING AND PROJECT DESCRIPTION

The SERC will consist of two 48-megawatt General Electric (GE) LM6000PC natural-gas-fired combustion turbine generators (CTG) in a simple-cycle configuration with spray intercooled technology; two 10-MW, 4.3-MWh each battery energy storage systems; and synchronous condensing capability. The energy storage system can be operated in conjunction with the CTGs or separately.

For additional project details, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

CEQA guidelines require that the analysis does "…describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy."[2]

We evaluate alternatives to the SERC project that could reduce wasteful, inefficient, or unnecessary energy consumption. Project fuel efficiency, and therefore its rate of energy consumption, is determined by both the configuration of the power-producing system and the type of equipment used to generate its power.[3]

Impact Assessment and Mitigation

The SERC will have natural gas delivered to the project site via a new 2.75-mile long natural-gas pipeline that would extend from the site along Dale Avenue to the existing Southern California Gas Company (SoCalGas) natural-gas transmission Line 1014 at La Palma Avenue.[4] The SERC would consume natural gas at a

[1] 8/2/18 RT pp. 29:20 – 30:14.
[2] California Code of Regulations, title 14, §1126.4(a)(1).
[3] Ex. 300, p. 5.3-2.
[4] Ex. 7, §§ 1.0, 1.1, 1.2, 2.1.2; Ex. 88; Ex. 300, p. 5.3-2.

maximum rate of approximately 938 million Btu (mmBtu) per hour. Energy Commission staff (Staff) testified that this rate of consumption will not impact energy supplies.[5]

Fuel consumption is one of the most important economic factors in selecting a turbine generator. Fuel typically accounts for over two-thirds of the total operating costs of a natural-gas-fired power plant. Under a competitive power market system where operating costs are critical in determining the competitiveness and profitability of a power plant, the plant owner is thus strongly motivated to purchase fuel-efficient machinery.[6]

Each of the SERC's two GE LM6000PC SPRINT CTGs is nominally rated at 51 MW gross with a 41 percent ISO-rated efficiency. This efficiency level is comparable to the average fuel efficiency of a typical modern simple-cycle power plant.[7]

There are alternative simple-cycle, natural-gas turbines that can meet the SERC's generating capacity and peaking/load following project objectives. They are the Pratt & Whitney FT4000 SwiftPac 60 and the Siemens SGT-800; both are aeroderivative gas turbines adapted from aircraft engines.[8]

The Pratt & Whitney FT4000 SwiftPac 60 gas turbine is nominally rated at 52 MW gross and a fuel efficiency of 41 percent at ISO conditions[9] in a simple-cycle configuration. The Siemens SGT-800 gas turbine is nominally rated at 53 MW gross and 39 percent efficiency at ISO conditions in a simple-cycle mode.

The rated thermal efficiencies among these three gas turbines vary only slightly, and actual performance may also vary based on project site conditions such as annual range of ambient temperature and humidity. Therefore, any differences in actual operating efficiency between these turbines may be insignificant.[10] We find that in terms of thermal efficiency, the GE LM6000PC SPRNT is an appropriate CTG for the project.

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[5] Ex. 300 5.3-3.

[6] Ex. 300, p. 5.3-6.

[7] Ex. 300, p. 5.3-3.

[8] Ex. 300, p. 5.3-6.

[9] ISO (International Organization for Standardization): In this case, ISO Standard 27.040 for measurement of gas turbine capacity. These standard conditions are 15°C (59°F), 60 percent relative humidity, and one atmosphere of pressure. (Ex. 300, p.5.3-6.)

[10] Ex. 300, p. 5.3-7.

Inlet Air Cooling

A gas turbine's power output decreases as ambient air temperatures rise. Cooling the air as it enters the turbine increases its power output and cycle efficiency. Therefore, alternative gas turbine inlet air cooling methods are usually evaluated as a part of the equipment selection process for a power plant. The two most common techniques are chillers and evaporative coolers or foggers, which increase power output by cooling gas turbine inlet air. A mechanical chiller offers greater gross power output than the evaporative cooler on hot humid days; however, it consumes electricity to operate its refrigeration process, slightly reducing the turbine's overall net power output and efficiency. An absorption chiller uses less electricity, but necessitates the use of a substantial amount of ammonia. An evaporative cooler or fogger boosts power output most efficiently on dry days; it uses less electricity than a chiller, possibly producing a slightly higher operating efficiency, but uses more water from the direct evaporative cooling. The evidence shows that the overall efficiency differences between these alternatives are relatively minor.[11]

The SERC will use an inlet air evaporative fogging system for the project's CTGs. The climate in the project area is mild, with occasionally high summer temperatures and relative humidity ranging from low to moderate. The evidence indicates that the evaporative fogging system would operate well in the city of Stanton's climate. Based on the uncontested evidence, we find that the proposed evaporative system will efficiently cool the gas turbine inlet air.

Based upon the record, we find that the simple cycle LM6000PC CTGs and inlet air evaporative system chosen for the SERC represent a sufficiently efficient combination of technology to satisfy the objective of efficient power production with operational flexibility as identified in the project objectives (see **PROJECT DESCRIPTION**).[12]

Alternative Generating Technologies

Alternative technologies, including solar, coal, oil, nuclear, biomass, hydroelectric, wind, geothermal technologies, and 100 percent battery energy storage, were evaluated as alternative generating technologies for the SERC.

- Due to regulatory prohibitions, nuclear technology was rejected.

[11] Ex. 300, p. 5.3-7.

[12] Ex. 300, p. 5.3-7.

- Biomass, hydroelectric, geothermal, wind, and solar technologies were ruled out due to the lack of adequate space on the project site and/or the unavailability of these energy resources in the project area.
- Coal and oil are highly polluting and would be difficult to permit.
- Battery storage can provide operational flexibility, having the capability to discharge electricity back to the grid virtually instantaneously. A 100-MW battery storage system (the maximum MW that could appropriately fit on the site) could potentially replace the SERC's simple-cycle units and battery storage system, but the system would need to be fully fed from the electric transmission grid, which would potentially need to be supplemented by natural-gas-fired units co-located at the project site. This would ensure that the facility is reliable enough to generate electricity whenever it's needed to provide fill-in energy, for example, due to unavailability of solar energy (evenings and night) or wind. For a more detailed description and evaluation of this alternative technology and a comparison of its potential environmental impacts to those associated with the proposed project, see the **PROJECT ALTERNATIVES** section of this Decision.

The evidence shows that there are no generating technologies that could significantly reduce the SERC's energy consumption. Therefore, we find that the Applicant's selection of a natural-gas-burning technology is reasonable.[13]

Effect on Energy Supplies and Resources

Natural gas for the SERC will be supplied from an existing SoCalGas natural-gas transmission pipeline. The SoCalGas natural-gas system is connected to natural-gas resources spanning the Rocky Mountains, Canada, and the southwest. This represents a resource of considerable capacity.[14]

Natural-gas demand is both instantaneous and long-term (e.g., annual), and the partial closure and potential long-term de-rate of the SoCalGas's Aliso Canyon natural-gas storage facility, located north/northwest of the San Fernando Valley near Los Angeles, may impact instantaneous natural-gas deliveries to the power plants it serves, including the SERC.

In response to the partial closure of Aliso Canyon, the California Public Utilities Commission issued Resolution E-4791 authorizing expedited procurement of energy storage resources to ensure electric reliability in the Los Angeles Basin. The SERC's 20-MW battery energy storage system can deliver electricity directly

[13] Ex. 300, p. 5.3-5.

[14] Ex. 300, p. 5.3-4.

to and from the electricity grid. The uncontested evidence asserts that the storage and the phase-out of older, less-efficient power plants will help alleviate the impact of any fuel shortfall from Aliso Canyon.[15]

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects; (2) other current projects; and (3) probable future projects.[16]

No nearby projects have been identified that when combined with the SERC could create cumulative impacts on natural-gas resources. We have also found that if SoCalGas's Aliso Canyon natural-gas storage facility remains partially closed, it will not significantly affect the delivery of natural gas to SERC. The evidence shows that the SoCalGas system is adequate to supply the project without creating a significant cumulative impact.[17]

In conclusion, the SERC will generate 98 MW (net output) of electricity at an overall project fuel efficiency of 41 percent at full load. While it will consume substantial amounts of energy, it will do so in a sufficiently efficient manner to satisfy the objectives of producing peak-load electricity and ancillary load-following services. It will not create significant adverse effects on energy supplies or resources, will not require additional sources of energy supply, and will not consume energy in a wasteful or inefficient manner. The battery energy storage system and synchronous condenser will not impact the project's overall thermal efficiency.[18]

We therefore conclude that the project will not present significant direct, indirect, or cumulative adverse impacts upon energy resources.[19] We find that no mitigation or conditions of certification are needed regarding the efficiency of this project.

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

No federal, state or local/county laws, ordinances, regulations, or standards (LORS) apply to the efficiency of this project.

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[15] Ex. 300, p. 5.3-4.

[16] Title 14, Cal. Code Regs, §§ 15065(a)(3); 15130.

[17] Ex. 300, p. 5.3-7.

[18] Ex. 300, p. 5.3-4.

[19] Ex. 300, p. 5.3-8.

AGENCY AND PUBLIC COMMENT

Please see the Agency and Public Comment subsection of the **PROJECT ALTERNATIVES** section of this Decision.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The Stanton Energy Reliability Center is designed as both a 98 MW simple-cycle, natural-gas-fired power plant and a 20 MW energy storage system.
2. The Stanton Energy Reliability Center will provide synchronous condensing capability.
3. The Stanton Energy Reliability Center will generate electricity at a full-load efficiency of approximately 41 percent.
4. This efficiency level of 41 percent is comparable with the average fuel efficiency of a modern simple-cycle plant.
5. The record contains a comparative analysis of alternative fuel sources and generation technologies.
6. The project will not require the development of new fuel supply resources.
7. The Stanton Energy Reliability Center will not or consume energy in a wasteful or inefficient manner.
8. No federal, state, or local laws, ordinances, regulations, or standards have been established to regulate the efficiency of gas-fired power plants.
9. No conditions of certification are required for this topic.

CONCLUSION OF LAW

1. The Stanton Energy Reliability Center 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

This section discusses whether the Stanton Energy Reliability Center (SERC) would be designed, sited, and operated to ensure safe and reliable operation.[1]

Evidence on Power Plant Efficiency is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 9, 27, 28, 31, 32, 55, 100, 101, 102, 103, 300, 301, 302, 303, and 304.[2]

PROJECT DESCRIPTION AND SETTING

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

The SERC will be both a simple-cycle power plant and a battery energy storage system. Each one of the project's two simple-cycle combustion turbine generators (CTGs) will be a modern GE LM6000PC SPRINT (spray intercooling) gas turbine. This type of turbine generator has been in commercial operation for years and has exhibited high reliability. The evidence indicates that the SERC's CTGs are expected to outperform the existing fleet of various, mostly older, CTGs.[3]

For general project description, including the location of the facility, please refer to the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The Energy Commission must determine whether the SERC would be designed, sited, and operated to ensure safe and reliable operation.[4] However, there are no specific laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation.[5]

In recent years, the means of ensuring system reliability have shifted from the California Independent System Operator's (California ISO) "Reliability Must Run" Power Purchase Agreement to the California Public Utilities Commission's (CPUC) Resource Adequacy (RA) program. Nearly all RA programs have "Participating Generator Agreements" (PGA), which allow the California ISO to invoke

[1] Pub. Res. Code § 25520(b); Cal. Code Regs, tit. 20, §§ 1741(b)(3); 1745.5(b)(15).
[2] 8/2/18 RT pp. 29:20 – 30:14.
[3] Ex. 300, p. 5.4-8.
[4] Pub. Res. Code § 25520(b); Cal. Code Regs, tit. 20, §§ 17411741(b)(3); 1745.5(b)(15).
[5] Ex. 300, p. 5.4-1.

"command and control" authority on PGA resources and force resources to conform to the California ISO Tariff. These agreements ensure an adequate supply of reliable power.[6]

The California ISO also requires that power plants selling ancillary services[7] fulfill certain requirements, including filing periodic reports on power plant reliability, reporting all outages and their causes, and scheduling all planned maintenance outages with the California ISO. These mechanisms ensure adequate power plant reliability and support the expectation that new power plants will operate in an equivalent manner to the industry's current level of reliability.

Delivering acceptable reliability entails: (1) adequate levels of equipment availability; (2) plant maintainability with scheduled maintenance outage; (3) fuel and water availability; and (4) resistance to natural hazards.[8]

In reviewing a new power plant's potential effect on system reliability, we examine whether the power plant will be built and operated at the typical level of reliability reflected in the power generation industry because, if it compares favorably to "typical industry norms," it is not likely to degrade the overall reliability of the electricity system it serves.[9]

Equipment Availability

The project's equipment availability will be ensured by implementing appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The project owner will use a QA/QC program typical in the power industry. Equipment will be purchased from qualified suppliers and the project owner will perform receipt inspections, test components, and administer independent testing contracts. [10] The conditions of certification in the **FACILITY DESIGN** section of this Decision incorporate these requirements.

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[6] Ex. 300, p. 5.4-2.

[7] Power plants provide not only energy, but various products necessary to ensure continued service and keep the transmission grid stable during periods of high electricity demand and in the face of major component failure. This includes frequency regulation, operating reserves, voltage support, inertia, and others. Ex. 300, p. 4.1-108.

[8] Ex. 300, p. 5.4-2.

[9] Ex. 300, p.5.4-1.

[10] Ex. 300, p. 5.4-3.

Equipment Redundancy

The Applicant plans to provide an appropriate redundancy of function for the SERC. For example, the lube oil system in the CTG will include redundant pumps, compressors, filters, and coolers, and redundant microprocessors and sensors will be installed in the turbine's control system. Also, the battery energy storage system will include redundant battery banks, inverters, and transformers. Because the project consists of two CTGs operating in parallel as independent power trains, it will be inherently reliable – a single equipment failure cannot disable more than one train, allowing the other train to continue to operate. We find that the SERC's proposed equipment redundancy is sufficient for its reliable operation.[11]

Battery Energy Storage System

The battery energy storage system will provide approximately 10 minutes of grid support during the ramping of the gas turbines from cold condition to full load, allowing instantaneous and continuous response to the electricity grid. This represents an advantage in response time to the grid reliability over projects without this feature.

The batteries will be charged either by the grid or by the CTGs. They could operate without initiating a start of the CTGs or could operate in conjunction with a CTG start. However, the battery system and CTGs cannot both provide full output simultaneously to the grid. In the event the battery system becomes unavailable, the CTGs would continue to be available and project availability factor would not be adversely affected.[12]

Batteries are a proven technology. They have no moving parts and, thus, are not prone to mechanical failure. The potential for failure of battery systems is limited to electrical-related issues (i.e., short-circuiting and overheating).

The battery system will include redundant battery banks, inverters, and transformers. The equipment is also subject to commercial guarantees for both output and availability provided by the equipment vendor. The QA/QC program will include performing receipt inspections, testing of components, and administration of independent testing contracts. Finally, the SERC will operate only up to 12.3 percent of the time, so there will be ample opportunity to conduct maintenance, including battery replacement, during planned off-line periods. We find that the

[11] Ex. 300, p. 5.4-3.

[12] Ex. 300, p. 5.4-3.

battery energy storage system will be able to demonstrate adequate operational reliability.[13]

Synchronous Condenser

The GE LM6000 equipment package has the ability to operate the generators as synchronous condensers.[14] When the synchronous condenser is engaged, the generator continues to spin with input power from the grid or battery storage systems. In periods of electrical grid instability (e.g., high or low voltage or frequency) or when the grid is loaded with high inductive loads, this action allows the generator to sync up to the grid to provide grid voltage and frequency support in the form of reactive power instead of real power when generating.

In this project, fuel would be burned to bring the generator up to speed to synchronize to the grid within 3-6 minutes of startup. Immediately after this synchronization occurs, the fuel supply would be cut off and the high-pressure sections of the turbine and compressor would shut down. However, since the generator rotor is connected to the low-pressure turbine and compressor spools, power input would be required, not only to spin the generator, but also the attached unfired low-pressure combustion turbine and compressor spools. Roughly 10 MW of power input would be needed for this, either from the grid or the batteries, which is about 20 times that for a fully disengaged generator. In most synchronous generator applications, the generator is decoupled from the prime mover/engine, and so, the entire turbine and compressor can be shut down. The record indicates that the SERC would provide synchronous condensing only when there is an unexpected fault in the transmission grid.[15]

Plant Maintainability

Equipment manufacturers provide maintenance recommendations for their products, and power plant owners develop their plant's maintenance program based on those recommendations. Such a program encompasses both preventive and predictive maintenance techniques. The project owner will develop its maintenance program in the same way. Additionally, because the SERC is expected to operate only up to 12.3 percent of the time, there will be ample opportunity to conduct maintenance during planned off-line periods, thus having no effect on its projected operating plan. The uncontroverted evidence shows that

[13] Ex. 300, p. 5.4-4.
[14] Ex. 88.
[15] Ex. 300, p. 5.4-4.

the SERC will be adequately maintained to ensure an acceptable level of reliability.[16]

Fuel and Water Availability

The long-term availability of fuel and water for cooling or process use is necessary to ensure power plant reliability. The SERC will use natural gas supplied by Southern California Gas Company (SoCalGas) and will connect to a new gas metering station adjacent to the power block.[17] Gas supplies will be acquired from gas providers in supply regions accessible through the SoCalGas' natural gas transmission system. This represents a resource of considerable capacity and offers access to adequate annual supplies of natural gas. However, the record indicates that the closure and potential long-term, de-rate of SoCalGas' Aliso Canyon Natural Gas Storage Facility may impact instantaneous natural gas deliveries to the power plants it serves, including the proposed SERC.[18]

Dispatch orders generally call up for the most efficiently-generated energy first; especially when peaking capacity is required (the proposed project would consist of peaking CTG units). As a result, the older, less-efficient plants are being displaced by modern and more efficient gas-fired power generation. The electric grid system's reliance on new and more efficient generation in the region rather than on the existing aging and less efficient plants would result in decreases in natural gas consumption per MW of generation and would help alleviate the potential effect of the partial closure of Aliso Canyon. The expected start date of commercial operation for the SERC is the 4th quarter of 2019.[19]

In response to the partial closure of Aliso Canyon, the CPUC issued Resolution E-4791, authorizing expedited procurement of storage resources to ensure electric reliability in the Los Angeles Basin. In April 2017, GE completed construction of a hybrid battery energy storage gas-turbine facility for Southern California Edison at the Center facility site in Norwalk, California. The facility combines one of the two 50-MW GE LM6000 CTGs with a 10-MW, 2.8-MWh battery energy storage system. Alamitos Energy Center has obtained a permit to install 300 MW of battery energy storage and is currently installing 100 MW of the 300 MW, which is scheduled to be on line in 2021. No construction schedule or start date has been planned for the remaining 200 MW. The SERC would include two 10-MW, 4.3-MWh each,

[16] Ex. 300, p. 5.4-5.
[17] Ex. 7, § 2.1.7; Ex. 9.
[18] Ex. 300, p. 5.4-5.
[19] Ex. 300, p. 5.4-6.

battery energy storage systems. These projects are within the Aliso Canyon's gas delivery area. Their battery storage systems can deliver electricity directly to, and draw electricity directly from, the electricity grid, mostly from renewable generation resources such as wind and photovoltaic. Therefore, these measures help alleviate the impact of any fuel shortfall from Aliso Canyon.[20]

Based on the evidence, we find that there will be adequate natural gas supply and pipeline capacity to meet the project's needs.[21]

The SERC will be composed of two simple-cycle combustion turbine generators. Potable and process water will be provided by Golden State Water Company, which has provided a will-serve letter to supply this water to the project.[22] We find that the SERC's source of water supply is reliable. For further discussion of water supply, refer to the **SOIL AND WATER RESOURCES** section of this Decision.

Natural Hazards

The site is located in a seismically active area and the potential for strong ground motion in the project area is considered significant during the life of the proposed structures. The SERC project will be designed and constructed to the latest applicable engineering LORS and is expected to perform at least as well or better than existing plants in the electric power system. The **GEOLOGY AND PALEONTOLOGY** section Conditions of Certification **GEO-1** and **GEO-2** and the **FACILITY DESIGN** section Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1,** include standard engineering design requirements for mitigation of strong seismic shaking, liquefaction, and potential excessive settlement due to dynamic compaction. The evidence establishes that there are no special concerns with the SERC's power plant functional reliability due to seismic shaking.[23]

The SERC site is located in the Federal Emergency Management Agency's (FEMA) 500-year flood zone and in a 100-year flood zone for very shallow flooding (less than one foot deep). The project features will be designed and built to provide adequate levels of flood resistance by complying with the **FACILITY DESIGN** section Conditions of Certification **GEN-1, CIVIL-1, CIVIL-3**, and **CIVIL-4**. The record indicates that there are no concerns with the project's functional reliability due to flooding with the implementation of these conditions.[24]

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[20] Ex. 300, p. 5.4-6.
[21] *Id*.
[22] *Id*.
[23] Ex. 300, p. 5.4-7.
[24] *Id*.

Regarding the threat of tsunami to the project, the SERC will be designed and constructed in accordance with the California Building Code (CBC), as required by **GEN-1** to meet general engineering requirements. Since the project site is not in a coastal area and is located approximately eight miles from the Pacific Ocean and roughly 70 feet above mean sea level, we find that it is not subject to tsunami threat. For further discussion, see the **GEOLOGY AND PALEONTOLOGY** section of this Decision. [25]

Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors and other related reliability data. The NERC's statistics for the years 2010 through 2015 demonstrate an availability factor of 88.9 percent for CTGs with a capacity of 50 MW or greater. The SERC project's two CTGs will be modern GE LM6000PC SPRINT gas turbines. This type of turbine generator has been in commercial operation for years and has exhibited high reliability. The project's CTGs are expected to outperform the fleet of various, mostly older, CTGs that make up the NERC statistics. The Applicant has committed to functional testing, performance testing, and warranty claims, as well as QA/QC during the commissioning and start-up of the facility. Additionally, the power plant components will be equipped with redundant features. These measures ensure that the project's generating equipment will maintain high reliability throughout their operating life. Therefore, the Applicant's expectation of an equivalent availability factor of 92 to 98 percent is reasonable when compared to the NERC's availability factor of 88.9 percent.[26] We find that the SERC will be built to operate in a manner consistent with industry norms for reliable operation and is expected to demonstrate an equivalent availability factor between 92 and 98 percent. The battery energy storage systems and synchronous condensers will perform reliably and will not adversely affect the project's availability factor. There are no conditions of certification proposed for power plant reliability.[27]

[25] Ex. 300, p. 5.4-7.
[26] Ex. 300, p. 5.4-8.
[27] Ex. 300, p. 5.4-8.

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

No federal, state or local/county laws, ordinances, regulations, or standards (LORS) apply to the reliability of this project.

AGENCY AND PUBLIC COMMENT

No agency or public comments were submitted regarding the reliability of the SERC.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. There are no specific federal or state laws, ordinances, regulations, or standards that establish either power plant reliability criteria or procedures for attaining reliable operation.
2. A project's reliability is acceptable if it does not degrade the reliability of the electrical grid to which it is connected.
3. The North American Electric Reliability Corporation reports that, for the years 2010 through 2015, combustion turbine generators with a capacity of 50 MW or greater demonstrate an availability factor of 88.9 percent.
4. Evidence indicates that the Stanton Energy Reliability Center can achieve an availability factor of 92 to 98 percent.
5. The battery energy storage system will provide adequate operational reliability.
6. Implementation of Quality Assurance/Quality Control programs during design, procurement, construction, and operation of the Stanton Energy Reliability Center, as well as adequate maintenance and repair of the equipment and systems, will ensure the Stanton Energy Reliability Center is sufficiently reliable.
7. The **FACILITY DESIGN** section conditions of certification in this Decision ensure implementation of the Quality Assurance/Quality Control programs and conformance with seismic design criteria.
8. The Stanton Energy Reliability Center's fuel and water supply is adequate and reliable.

9. Southern California Gas Company will supply natural gas to the Stanton Energy Reliability Center.

10. The Stanton Energy Reliability Center's process water and potable water source will be provided by the Golden State Water Company.

11. With the conditions of certification included in **Appendix A**, the Stanton Energy Reliability Center will be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards to withstand seismic events and to prevent incidents of flooding or tsunamis.

12. The Stanton Energy Reliability Center is expected to meet or exceed industry norms for power generation reliability and will not degrade the overall electrical system.

13. The redundancy of the two combustion turbine generators and the battery energy storage system ensures inherent reliability of the Stanton Energy Reliability Center's generating capacity.

CONCLUSIONS OF LAW

1. No conditions of certification are required for this topic area. Implementation of the **FACILITY DESIGN** section conditions of certification will ensure that the Stanton Energy Reliability Center can be designed to meet industry norms for generating reliability.

2. The Stanton Energy Reliability Center will meet industry norms and will not degrade the overall reliability of the electrical system.

D. TRANSMISSION SYSTEM ENGINEERING

INTRODUCTION

This section assesses the engineering, compliance with laws, ordinances, regulations, and standards, and any impacts of the proposed new transmission facilities associated with the Stanton Energy Reliability Center (SERC).

Evidence on the topic of Transmission System Engineering is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 10, 27, 28, 30, 31, 32, 36, 37, 38, 65, 66, 69, 88, 92, 93, 98, 100, 103, 300, 302, and 307.[1]

SETTING AND PROJECT DESCRIPTION

The SERC consists of a hybrid electrical generating station and an energy storage facility in the city of Stanton in Orange County, California. The SERC project will consist of two natural-gas-fired, simple-cycle combustion turbine electrical generating (CTG) facilities rated at a nominal generating capacity of 49 megawatts (MW) each, co-located with two sets of lithium-ion batteries, each with a nominal capacity of 10 MW (total 20 MW) and 4.3 megawatt-hours (MWh) storage (total 8.6 MWh). The SERC would also feature technology that allows the facility to provide synchronous condensing capabilities for voltage support to the electrical grid when needed.[2]

Each of the SERC's CTG units will be connected to the low side of a 13.8/66 kV and 100/130/170 megavolt ampere generator step-up, two-winding transformer through a 13.8 kV, 3,000 ampere breaker. The high side of each generator step-up transformer will be connected to the existing Barre Substation via a 0.35-mile long underground electric transmission circuit (a bundled 3000 Copper Cross-linked Polyethylene). The underground circuit will leave the eastern border of the SERC site, cross under Dale Avenue, and then parallel the north side of the Union Pacific rail line for approximately 850 feet before turning northeast to enter the Barre Substation. Within the Barre Substation, the underground circuit would come aboveground and connect to the existing Barre C 66 kV switch rack via an approximate 100-foot long bundled overhead single circuit (a 954 Aluminum Stranded Conductor Cross-Linked Polyethylene and Sheathed conductor).[3]

Barre Substation

The project's switchyard will be built with two separate 4,000 Amp bus bars that will connect to the SERC project's two CTG units and two battery storage units via

[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 88, p. 3-1 (pdf p. 94); Ex. 300, pp. 5.5-3 – 5.5-4.

[3] Ex. 69, **Appendix A**-QC9 Phase I, p. 4 (pdf p.186); Ex. 300, p. 5.5-4.

inverters. Each CTG unit common bus bar will connect to the low side of the two-winding transformer through a disconnect switch.

The auxiliary loads of each CTG unit and battery storage unit will be supported by dedicated step-down transformers. Startup and stand-by power will be supplied through the generator step-up transformer and two auxiliary transformers. Auxiliary controls and protective relay systems for the project's switchyard will be located in the switching control building.[4]

For general project description, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

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

SCE and California ISO perform Phase I and Phase II interconnection cluster studies to determine the impacts of the SERC on the transmission system. The studies identify any mitigation measures needed to ensure system conformance with performance levels required by utility reliability criteria, North American Electric Reliability Corporation (NERC) reliability standards, Western Electric Coordinating Council (WECC) system performance criteria, and California ISO planning standards. The Energy Commission relies on these studies and reviews to determine the SERC's effect on the transmission grid and to identify any necessary downstream facilities or indirect project impacts required to bring the transmission network into compliance with applicable reliability standards.[5]

Impact Assessment and Mitigation

The California ISO studied the SERC project as part of their Queue Cluster 7 (QC7) and 9 (QC9) Phase I and II Interconnection Study reports for the SCE metropolitan

[4] Ex. 300, p. 5.5-4.
[5] Ex. 300, pp. 5.5-1 – 5.5-2, 5.5-5.

area.[6] The Phase II Interconnection Study includes a Power Flow study, Short Circuit Duty study, Transient Stability Evaluation study, Post-Transient Voltages Stability study, and Deliverability Assessment study. The Phase II interconnection study's base cases were developed from the on-peak and off-peak base cases used by SCE and the California ISO for the SCE metropolitan area. A Power Flow study assessed the Queue Cluster 9 generation projects' impact on thermal loading of the transmission lines and equipment. A Short Circuit Duty study was conducted to determine if the QC9 generation projects would overstress existing SCE substation facilities, adjacent utility substations, and the other 66 kV, 115 kV, 230 kV and 500 kV busses within the study area. A transient stability analysis was conducted to determine whether the generation projects would create instability in the system following certain selected outages. A Post-Transient Voltage Stability Analysis was conducted to determine whether the generation projects would create voltage deviations in the system following lines and equipment outages. Details of the study assumptions, new generation projects, and system upgrades are described in the Phase I and Phase II Interconnection Study reports.

The power flow study results show that the addition of the QC9 projects did not trigger any thermal overloads or create voltage violation on the electric transmission system in the Southern California Edison metropolitan area. The Barre 66 kV sub transmission assessment indicated the SERC project will not contribute to overloads to any facility under base case or single contingency scenarios. However, the electricity power flow analysis identified the loss of the Barre 4A 220/66 kV transformer bank will cause a loss of service to everyone connected to Section C of the Barre Substation. Therefore, the SERC will be required to calibrate its interconnection equipment to prevent disconnection and islanding caused by the outage or loss of the Barre 4A 220/66 kV transformer bank.[7]

A transient or voltage stability study was conducted for the critical single and double contingencies affecting the area. The three-phase faults with normal clearing are studied for single contingencies; single line-to-ground faults with delayed clearing were studied for double contingencies. All outage cases were evaluated with the assumption that existing special protection schemes (SPS) or remedial action schemes (RAS) would operate as designed where required. The transient stability study indicates there would be no system performance issues

[6] Ex. 36, Ex. 37, Ex. 69.
[7] Ex. 300, pp. 5.5-5 - 5.5-6.

caused by the projects providing 0.95 power factor correction as measured at the point of interconnection for each of the projects in the QC9.[8]

Short-circuit studies were performed by SCE to determine the fault duty impact of adding the QC9 projects to the SCE system and to ensure system breaker coordination. The fault duties were calculated with and without the projects in QC9 in order to identify any overstressed equipment. Once overstressed circuit breakers were identified, the fault current contribution from each individual project in QC9 was determined. All bus locations where the QC9 projects increase the short circuit duty by 0.1 kA or more and where duty was found to be in excess of 60 percent of the minimum breaker nameplate rating are listed in Appendix H of the area report.[9]

The Phase II Interconnection study also identified a number of 66kV circuit breakers on the A, B, and C sections of the Barre Substation that would require upgrades under an assumption that the Barre 66 kV sectionalizing bus breakers were closed. These breakers are scheduled for replacement with the new breakers in-service by December 31, 2019, whether or not the SERC is operating. A new short-circuit study will be completed once the new breakers are installed to determine if operating conditions of the SERC can be modified.[10]

The short-circuit study identified seven existing substations where the QC9 projects increased the substation ground grid duty by at least 0.25 kA. These substations need to be further evaluated by SCE for ground grid duty analysis.[11]

Cumulative Impacts

At all times, the transmission grid must remain in compliance with reliability standards. Potential cumulative impacts on the transmission network are identified through the California ISO and utility generator interconnection process. In cases where a significant number of proposed generation projects could affect a particular portion of the transmission grid, the interconnecting utility or the California ISO can study the cluster of proposed projects in order to identify the most efficient means to interconnect all of them.

The studies discussed above identified conceptual interconnection facilities and equipment upgrades needed in order for the SERC to interconnect with the Barre Substation in conjunction with the other proposed electricity generation projects; however, the proposed upgrades would be done within the existing, previously-

[8] Ex. 300, p. 5.5-6.
[9] Ex. 300, p. 5.5-6.
[10] Ex. 93, p. 101.
[11] Ex. 300, p. 5.5-6.

disturbed Barre Substation; therefore, no additional environmental analysis is required. [12]

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

Transmission System Engineering Table 1[13]
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
California Public Utilities Commission (CPUC) General Order 95, "Rules for Overhead Electric Line Construction" (GO-95)	Formulates uniform requirements for construction of overhead lines. Compliance with this General Order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines, and to the public in general.	**Compliant.** The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.[14]
California Public Utilities Commission General Order 128, "Rules for Construction of Underground Electric Supply and Communications Systems" (GO-128)	Formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines, and to the public in general.	**Compliant.** The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS
The National Electric Safety Code (NESC), 2007	Provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.	**Compliant.** The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability

[12] Ex. 300, pp. 5.5-6 – 5.5-7.
[13] Ex. 300, pp. 5.5-2 – 5.5-3.
[14] Ex. 300, p. 5.5-7.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
		criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.
The North American Electric Reliability Corporation (NERC) Reliability Standards	Defines the plans, policies and procedures, methodologies & system models, coordination & responsibilities, and performance criteria for reliable planning, control and operation of the North American Bulk Electric System (BES) over a broad spectrum of system conditions and following a wide range of probable disturbances. The Standards cover transmission system planning & operation, consistent data for modeling and simulation, facility ratings methodology and connections, balancing power, resources & load demand, procedures for voltage control & reactive power, system protection, control, communications & security; nuclear plant interface coordination, emergency operation planning and system restoration plans. The standards stipulate periodic system simulations and associated assessments over a planning horizon by the planning authority and transmission planner to ensure that reliable systems are planned in a timely manner to meet system performance requirements and continue to be modified or upgraded as necessary for operating the network reliably to supply projected customer demands and firm transmission services under normal and forced or maintenance outage system conditions.	**Compliant.** The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
The Western Electric Coordinating Council (WECC) Regional System Performance Criteria	The WECC performance criteria are similar to the NERC system performance limits discussed above. The WECC performance criteria incorporate Table I of the NERC transmission planning standards and provide additional standards for transient voltage and frequency limits, and post-transient system voltage variation. Certain aspects of the WECC performance criteria are either more stringent or specific than the NERC standards. Adequate reactive power resources planning criteria for transfer path ratings and post-transient voltage stability are also included. For any past disturbance that resulted in cascading outages in the interconnected system, the WECC performance criteria require remedial action so that future occurrences of such event would not result in cascading.	**Compliant.** Compliant. The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.
California ISO Planning Standards	Provides standards and guidelines to ensure the adequacy, security, and reliability in the planning of the California ISO grid transmission. The California ISO Standards apply to the electric systems of all participating transmission owners interconnecting to the California ISO controlled grid, as well as to adjacent, non-California ISO controlled grids when there are any impacts to the California ISO grid due to facilities interconnection. Incorporates the current NERC Reliability Planning Standards and WECC Regional System Performance Criteria. However, the California ISO Standards are more stringent or specific than the NERC standards and WECC performance criteria. The Standards also address new transmission vs. involuntary load interruptions and grid planning for the San Francisco Bay Area.	**Compliant.** Compliant. The QC9 study indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant will design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.
California ISO/FERC Electric Tariff	Provides rules, procedures and guidelines for construction of all transmission additions/upgrades	**Compliant.** The QC9 study indicates that the project interconnection will comply with

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
	(projects) within the California ISO controlled grid. The California ISO determines the need for the proposed project (economic efficiency or maintain system reliability), the cost responsibility of the proposed project, and provides an operational review of all facilities that are to be connected to the California ISO grid. The tariff specifies the required Generator Interconnection and Delivery Allocation Procedures and Large Generator Interconnection Agreement to be followed for interconnection to the California ISO controlled grid. The tariff specifies the required procedures and agreement to be followed for any large generator interconnection to the California ISO controlled grid.	NERC/WECC planning standards and California ISO reliability criteria. The applicant would design and build the proposed 66 kV underground/overhead transmission line. Conditions of Certification **TSE-1** through **TSE-5** ensure that construction and operation of the transmission facilities for the SERC project will comply with applicable LORS.

Therefore, we find that the SERC facilities from the generator to the interconnection with the SCE 66 kV Barre Substation are acceptable, in accordance with good utility practices and, with implementation of the conditions of certification, will comply with all applicable LORS.

AGENCY AND PUBLIC COMMENTS

We received no public or agency comment on Transmission System Engineering.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. The Stanton Energy Reliability Center consists of a hybrid electrical generating station and an energy storage facility for a total gross generating installed capacity of about 100 megawatts and a net generating capacity of 94.46 megawatts.
2. The Stanton Energy Reliability Center will install two General Electric LM 6000 natural-gas-fired, simple-cycle combustion turbine generators equipped with a clutch to provide operational flexibility as a synchronous condenser.
3. The Stanton Energy Reliability Center will install two integrated 4.3-megawatt hour battery energy storage systems.

4. Each of the two combustion turbine generating units will be connected to the low side of 13.8/66 kV and 100/130/170 megavolt ampere generator step-up, two-winding transformer through a 13.8 kV, 3,000 ampere breaker.

5. The high side of each of each generator step-up transformer will be connected to the existing Southern California Edison Barre Substation.

6. The Stanton Energy Reliability Center's generator tie-line consists of 0.35-mile of a bundled 3000 Copper Cross-linked Polyethylene underground cable and a 100-foot bundled overhead single circuit with a 954 Sheathed Aluminum Conductor for the generator tie-line to connect to the 66 kV switch rack of the Barre Substation.

7. The Stanton Energy Reliability Center's switchyard will be built with two separate 4,000 Amp bus bars to connect with a 47.3 megawatt combustion turbine generator unit and two 4.3 megawatt hour battery storage units via inverters to connect to the low side of the two-winding transformer through a disconnect switch.

8. Auxiliary loads of each combustion turbine generator unit and battery storage unit will be supported by dedicated step-down transformers, while startup and stand-by power will be supplied through the generator step-up transformer and two auxiliary transformers.

9. Auxiliary controls and protective relay systems for the Stanton Energy Reliability Center's switchyard will be located in the switching control building.

10. The generator tie-line is rated to carry the full load output of the Stanton Energy Reliability Center and will connect from the east side of the project site, crossing under Dale Avenue and paralleling the Union Pacific railway along the southern boundary of the property on which the Barre Peaker is located, turning northeast to connect with the existing Barre Substation.

11. The two 10 MW/4.3 MWh lithium-ion battery storage systems at the Stanton Energy Reliability Center site consist of three main components: batteries, inverters, and feedback control equipment, and can be operated in conjunction with the thermal power plant using the project's hybrid technology to regulate voltage and frequency, as well as to store and supply power to the grid.

12. Each set of batteries will be installed in a battery enclosure to meet fire protection requirements and provide secondary containment.

13. With implementation of Conditions of Certification **TSE-1** through **TSE-5**, the Stanton Energy Reliability Center will have no significant impacts on the existing transmission system. The Stanton Energy Reliability Center interconnection facilities are acceptable in accordance with good utility practices, and will comply with applicable LORS with implementation of Conditions of Certification **TSE-1** through **TSE-5**.

14. Implementation of the Conditions of Certification **TSE-1** through **TSE-5** will ensure that Stanton Energy Reliability Center will not adversely impact the transmission grid.

CONCLUSIONS OF LAW

1. Implementation of the mitigation measures specified in **Appendix A** of this Decision will ensure that the Stanton Energy Reliability Center's transmission interconnections will not contribute to significant adverse direct, indirect, or cumulative impacts.

2. The Conditions of Certification listed in **Appendix A** of this Decision, ensure that the Stanton Energy Reliability Center's electricity transmission system will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards.

E. TRANSMISSION LINE SAFETY AND NUISANCE

INTRODUCTION

This section assesses the potential impacts of the transmission line on radio frequency interference, audible noise, fire hazards, and the creation of hazardous and/or nuisance electrical shocks. This section also evaluates any potential risks resulting from electric and magnetic field (EMF) exposure, and identifies mitigation measures that would reduce any potential impacts to insignificant levels.

Evidence on the topic of Transmission Line Safety and Nuisance is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 10, 28, 30, 31, 32, 36, 37, 65, 66, 69, 88, 92, 93, 98, 100, 103, 300, 302, and 307.[1]

SETTING AND PROJECT DESCRIPTION

The Stanton Energy Reliability Center (SERC) consists of a hybrid electrical generating station and an energy storage facility in the city of Stanton in Orange County, California. The SERC project will consist of two natural-gas-fired, simple-cycle combustion turbine electrical generating (CTG) facilities rated at a nominal generating capacity of 49 megawatts (MW) each, co-located with two sets of lithium-ion batteries, each with a nominal capacity of 10 MW (total 20 MW) and 4.3 megawatt-hours (MWh) storage (total 8.6 MWh).

Within the SERC site, the circuits will be located aboveground on poles approximately 60 feet high;[2] the line will then be underground for 0.35-mile and will come aboveground once within the existing Barre Substation to connect to the Barre Substation. Each of the SERC's CTG units will be connected to the low side of a 13.8/66 kV and 100/130/170 megavolt ampere generator step-up, two-winding transformer through a 13.8 kV, 3,000 ampere breaker. The high side of each generator step-up transformer will be connected to the existing Southern California Edison (SCE) Barre Substation via a 0.35-mile long underground electric transmission circuit (a bundled 3000 Copper Cross-linked Polyethylene circuit). The underground portion of the circuit will leave the eastern border of the SERC site, cross under Dale Avenue, then parallel the north side of the Union Pacific rail line for approximately 850 feet before turning northeast to enter the Barre Substation. Within the Barre Substation, the underground circuit would come aboveground and connect to the existing Barre C 66 kV Switchrack via an approximate 100-foot long bundled

[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 7, pp. 2-7 and 2-9.

overhead single circuit conductor (a 954 Aluminum Stranded Conductor Cross-Linked Polyethylene and Sheathed conductor)[3].

For more information on the site and its related project description, please see the **PROJECT DESCRIPTION** section of this Decision.[4]

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

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

Impact Assessment and Mitigation

The potential health and safety impacts from the project's transmission line involve interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.

The SERC's new underground single-circuit, 66-kilovolt (kV) transmission line will connect to the area's electric power grid through the existing SCE Barre Substation to the east. Since the line will be operated within the SCE service area, it will be designed, constructed, operated, and maintained according to SCE's guidelines for line safety and field management, which conform to applicable LORS.

Interference with Radio-Frequency Communication

Transmission line-related, radio-frequency interference is one of the indirect effects of line operation. This interference is due to radio noise produced by the action of the electric fields on the surface of the energized conductor. When generated, such noise manifests as perceivable interference with radio or television signal reception or other forms of radio communication. Since most of the SERC's 66 kV transmission line will be located underground (except for the approximate 100-foot aboveground portion within the Barre Substation), electric field-related radio and television interference will not likely be significantly different than what is currently experienced at the substation, and we therefore do not impose any condition of certification.[6]

[3] Ex. 69, **Appendix A**-QC9 Phase I, p. 4 (pdf p.186); Ex. 300, p. 5.5-4.
[4] Ex. 300, p. 4.12-1.
[5] Ex. 300, p. 4.12-2.
[6] Ex. 8, p. 308; Ex. 300, p. 4.12-5.

Audible Noise

Audible noise also results from the action of the electric field at the surface of the conductor of an overhead line and could be perceived as a characteristic crackling, frying, hissing, or humming sound, especially in wet weather. Since noise-producing electric fields from the proposed underground line will not be audible aboveground, and because the approximate 100-foot section of the new above-ground circuit will likely not create significantly more audible noise than what is currently experienced at the substation, we will not impose a related condition of certification. For an assessment of the noise from the proposed project and related facilities, please refer to the **NOISE AND VIBRATION** section of this Decision.[7]

Hazardous Shocks

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

Nuisance Shocks

Nuisance shocks are caused by energy current flow at levels generally incapable of causing significant physiological harm. There are no design-specific federal or state regulations to limit nuisance shocks in the transmission line environment. Nuisance shocks are effectively minimized through grounding procedures for all metallic objects within the transmission line's rights-of-way, as specified in Condition of Certification **TLSN-2**.[9]

Fire Hazards

Fire can be caused by sparks from the transmission line's conductors or by direct contact between the transmission line and nearby combustible objects. Such hazards will be minimal given the majority of the proposed line will be underground and away from combustible materials. The portion of the proposed transmission line that will be overhead will be designed according to SCE's fire prevention and suppression requirements, as standardized in GO-95 and GO-128, including clearances from manmade and natural structures, and tree-trimming. Therefore, the clearance-related aspects of GO-95 are an important part of this mitigation

[7] Ex. 300 p. 4.12-5.
[8] Ex. 300, pp. 4.12-5 4.12-6.
[9] Ex. 300, p. 4.12-6.

approach. Condition of Certification **TLSN-1** ensures compliance with these fire prevention requirements.[10]

Exposure to Electric and Magnetic Fields

Electric and magnetic fields (EMF) occur whenever electricity flows. These fields are typically measured near ground level, where they are encountered by people. The possibility of harmful health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines. However, the available scientific evidence does not conclusively establish that electric and magnetic fields pose a significant health hazard to humans.[11]

The transmission interconnection and other electrical devices constructed as part of the SERC will generate EMF when in operation. To the extent they occur, EMF could impact receptors on the properties adjacent to the project site. Since electric fields are unable to penetrate the soil and other materials, the potential for electric field effects and exposure would be from the SERC's overhead lines within the SERC site and to the approximate 100-foot portion of the transmission circuit within the Barre Substation.

The CPUC requires each new transmission line in California to be designed in accordance with the EMF-reducing guidelines of the electric utility in the service area and to be similar to the fields of comparable transmission lines in that service area. If the project's transmission lines are designed in accordance with existing SCE field strength-reducing guidelines, they will comply with CPUC requirements for EMF management.[12]

SCE's specific field strength-reducing measures will be incorporated into the design of the project's transmission line and include:

- Increasing the distance between the conductors and the ground;
- Reducing the spacing between the conductors;
- Minimizing the current in the line; and
- Arranging current flow to maximize the cancellation effects from interacting fields from nearby conductors.[13]

The field strengths of most significance would be the electric field component as encountered around the transitional pole and the penetrating magnetic field

[10] Ex. 300, p. 4.12-5.
[11] Ex. 300, p. 4.12-6.
[12] Ex. 300, pp. 4.12-9 – 4.12-10.
[13] Ex. 300, p. 4.12-11.

component along the route. Since field strengths could be reduced by reducing the spacing between conductors, undergrounding is used for optimum field strength reduction in ways that balance the need for field reduction with the need for line safety, efficiency, and reliability. Effective balancing of both needs is achieved through compliance with GO-128, which specifies the design guidelines applicable for underground lines of the voltage class and utility service area at issue. Condition of Certification **TLSN-1** requires compliance with GO-128. With the incorporation of the field strength-reducing measures and **TLSN-1**, the long-term residential field exposures at the root of the health concern of recent years will not be a significant concern.[14] Therefore, we find that with imposition of Condition of Certification **TLSN-1**, the SERC's EMF impacts will be mitigated to a less than significant level.

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[15]

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

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

The following federal, state, and local laws and policies apply to the protection of radio frequency communications, hazardous shocks and fire hazards associated with transmission lines. The record examines the project's compliance with these requirements.

[14] Ex. 300, p. 4.12-11; Ex. 8, p. 308.

[15] Cal. Code Regs, tit. 14, §§ 15065(a)(3), 15130.

Transmission Line Safety and Nuisance Table 1
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Interference with Radio Frequency Communication		
FEDERAL		
Title 47, CFR, part 15 (47 C.F.R. § 15 et seq.), Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.	**Compliant.** Underground lines do not generate electric fields which are responsible for above-ground radio-frequency impacts.
STATE		
California Public Utilities Commission General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate inductive interference.	**Compliant.** The project owner intends to construct the 66-kV transmission line according to the requirements of CPUC's GO-52. Condition of Certification **TLSN-1** will ensure compliance.
Hazardous and Nuisance Shocks		
STATE		
California Public Utilities Commission GO-128, "Rules for Overhead Electric Line Construction"	GO-128 for undergrounding formulates the requirements and standards to promote and safeguard public health and safety.	**Compliant.** The project owner intends to construct the 66-kV transmission line according to the requirements of GO-128. Condition of Certification **TLSN-1** would ensure compliance.
California Code of Regulations, Title 8, section 2700 et seq., "High Voltage Safety Orders"	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.	**Compliant.** The project owner intends to minimize the risk of hazardous shocks. Conditions of Certification **TLSN-1** and **TLSN-2** would ensure compliance.
INDUSTRY STANDARDS		
Institute of Electrical and Electronics Engineers (IEEE) 1119, "IEEE Guide for Fence Safety Clearances in Electric-Supply Stations"	Specifies the guidelines for grounding-related practices within the right-of-way and substations.	**Compliant.** Condition of Certification **TLSN-2** would ensure proper grounding for the line.
Electric and Magnetic Fields		
STATE		
California Public Utilities Commission GO-131-D, "Planning and construction of facilities for the generation of electricity and certain electric transmission facilities"	Specifies application and noticing requirements for new line construction including EMF reduction.	**Compliant.** The project owner intends to submit proof of compliance with CPUC GO-131-D and GO-128 to the compliance project manager, as required by Condition of Certification **TLSN-1**.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
California Public Utilities Commission Decision D.93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.	**Compliant.** The project will be designed according SCE's field-reducing guidelines for similar underground SCE lines in the service area. Condition of Certification **TLSN-1** will allow the line to be designed accordingly.
California Public Utilities Commission Decision D.06-01-042	Re-affirms CPUC EMF policy.	**Compliant.** The Applicant intends to design the project line to reflect the same field reduction policy established through CPUC Decision D.93-11-013. This would be accomplished through the requirements of **TLSN-1.**
Fire Hazards		
STATE		
California Code of Regulations, Title 14,sections 1250-1258, "Fire Prevention Standards for Electric Utilities"	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.	**Compliant.** The imposition and implementation of TLSN-1 will ensure that the project's transmission line would be designed and built in accordance with SCE's fire prevention and suppression requirements, and CPUC's GO-95 and GO-128.

PUBLIC COMMENT

There were no public comments on the topic of Transmission Line Safety and Nuisance.

FINDINGS OF FACT

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

1. The Stanton Energy Reliability Center will install a new underground 0.35-mile, single-circuit, 66-kilovolt (kV) transmission line to the area's electric power grid through the existing Southern California Edison Barre Substation to the east.
2. The Stanton Energy Reliability Center underground transmission line will not cause significant audible noise or radio-frequency interference.
3. Compliance with California Public Utilities Commission and Southern California Edison fire prevention and hazardous/nuisance shock prevention requirements will ensure that the Stanton Energy Reliability Center transmission line will not result in significant public health and safety impacts.

4. The available scientific evidence does not conclusively establish that electric and magnetic fields pose a significant health hazard to humans.

5. The Stanton Energy Reliability Center transmission line will incorporate standard electric and magnetic fields reducing measures required by the California Public Utilities Commission and Southern California Edison.

6. The Stanton Energy Reliability Center's transmission line will not result in significant impacts to public health and safety or cause significant direct, indirect, or cumulative impacts in the areas of radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

CONCLUSIONS OF LAW

We conclude that implementation of the conditions of certification identified in the pertinent portion of **Appendix A** of this Decision will ensure that the Stanton Energy Reliability Center's transmission line will comply with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance.

VI. PUBLIC HEALTH AND SAFETY

Site preparation (including demolition activities), construction and operation of the Stanton Energy Reliability Center (SERC) 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, can produce greenhouse gases (GHG) 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.[1]

Our analysis of the GHG emissions from a power plant's operation is not only assessed by analysis of the plant's emissions, but also in the context of operation of the entire electricity system of which the plant would be an integrated part and the state's GHG laws and policies, such as Assembly Bill (AB) 32.[2] GHG emissions are also analyzed in in the context of cumulative impacts.

Evidence on the topic of GHG Emissions is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 11, 39, 43, 54, 55, 56, 63, 72, 73, 80, 84, 85, 86, 87, 88, 100, 103, 104, 300, 301, 302, 303, and 306.[3]

SETTING AND PROJECT DESCRIPTION

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

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The issue presented is whether the SERC GHG emissions will result in a significant environmental impact. The rules governing our analysis are found in the California

[1] Ex. 300, p. 4.1-97; Ex. 39; Ex. 43.

[2] Ex. 300, p. 4.1-99; Ex. 11, pp. 5.1-36 – 5.1-38.

[3] 8/2/18 RT 29:20 – 30:14.

Environmental Quality Act (CEQA) Guidelines[4] and the Energy Commission's Avenal precedential decision.[5]

The CEQA Guidelines identify three factors lead agencies must consider when assessing the significance of impacts for the analysis of GHG emissions impacts:[6]

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 GHG 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 must be prepared for the project.[7]

We evaluate the GHG emissions of the SERC in the context of the electricity sector as a whole, and the AB 32 Scoping Plan[8] implementation efforts for this sector, including the cap and trade regulation that constitutes the state's primary mechanism for reducing GHG emissions from the electricity sector. The Energy Commission's assessment approach does not include a specific numeric threshold of significance for GHG emissions. Rather the assessment analyzes how the SERC will affect the electricity sector's GHG emissions based on its proposed role and its compliance with applicable regulations and policies.[9]

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

1. not increase the overall system heat rate for natural gas plants;

[4] CEQA Guidelines, tit. 14 Cal. Code Regs. § 15064.4.

[5] Final Commission Decision, Avenal Energy Application for Certification (08-AFC-1), December 2009, p. 114.

[6] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15064.4.

[7] Ex. 300, pp. 4.1-104 – 4.1-105.

[8] The California Global Warming Solutions Act of 2006, Health and Safety Code, Section 1, Division 25.5, (commencing with Section 38500).

[9] Ex. 300, p. 4.1-105; Ex.11, pp.5.1-37 – 5.1-38.

2. not interfere with generation from existing renewables or with the integration of new renewable generation; and
3. taking into account the two preceding factors, reduce system-wide GHG emissions.[10]

Impact Assessment and Mitigation

Construction Impacts

Construction of industrial facilities such as power plants requires coordination of numerous equipment and personnel. The concentrated on-site activities result in temporary, unavoidable increases in vehicle and equipment emissions that include GHGs. The Applicant provided an annual GHG emission estimate for the construction phase presented below in **Greenhouse Gas Table 1**. The term $MTCO_2e$ represents the total metric tons of GHG emissions after weighing by the appropriate global warming potential.[11]

Greenhouse Gas Table 1
Estimated Maximum Annual Construction Greenhouse Gas Emissions

SERC	MTCO2e/yr
On-site Construction Total	764
Off-site Construction Total	1,941
Total	2,705

Source: Ex. 300, 4.1-103.

The evidence indicates that the GHG emissions increases from mitigated construction activities[12] will not be significant for several reasons. First, the intermittent emissions during the construction phase are not ongoing during the life of the project. Additionally, control measures in the conditions of certification that address criteria pollutant emissions such as limiting idling times and requiring, as appropriate, equipment that meets the latest criteria pollutant emissions standards, will further minimize GHG emissions to the extent feasible. The use of newer equipment will increase efficiency, reduce GHG emissions, and be compatible with low-carbon fuel (e.g., bio-diesel and ethanol) mandates that will likely be part of future California Air Resources Board (ARB) regulations to reduce GHG emissions from construction vehicles and equipment.[13]

Thus, undisputed evidence establishes that during the short-term construction phase, the SERC will comply with the CEQA Guidelines by (1) reducing GHG emissions, (2) not

[10] Final Commission Decision, Avenal Energy Application for Certification (08-AFC-1) December 2009, p. 114 (Ex. 300, p. 4.1-105).

[11] Ex. 300, 4.1-103, Ex 43.

[12] Mitigation measures are included in the Conditions of Certification (**Appendix A**) and discussed in detail in other sections of this Decision.

[13] Ex. 300, p. 4.1-105.

exceeding thresholds of significance, and (3) compliance with statewide GHG regulations (see the Compliance with LORS section below).

Operational Impacts and Mitigation

The primary sources of GHGs during operation of the SERC will be the natural gas fired combustion turbines and the auxiliary boiler. The GHG emissions from employee, maintenance, and delivery traffic are considered negligible.[14]

Greenhouse Gas Table 2 shows estimated GHG emissions for the SERC on an annual basis assuming the facility will operate at maximum permitted emissions levels. Greenhouse gases include carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4), sulfur hexafluoride (SF6), hydrofluorocarbons (HFC), and perfluorocarbons (PFC). All emissions are converted to CO_2-equivalent and totaled. Electricity generation GHG emissions are generally dominated by CO_2 emissions from the carbon-based fuels; other sources of GHG are typically small and also are more likely to be easily controlled or reused/recycled, but are nevertheless documented here as some of the compounds have very high relative global-warming potentials.[15]

Based on the maximum permitted annual emission levels, the annual capacity factor for the SERC is an estimated 10.3% (902 hour/8,760 hour). Therefore, the SERC is a non-base load unit and is not subject to SB 1368 Greenhouse Gas Emission Performance Standard of 0.500 $MTCO_2$/MWh, which only applies to baseload facilities with capacity factors above 60 percent.[16] It is subject to a heat input limit of 120 lbs. CO_2/MMBtu. As the SERC is natural gas fired only, the turbines are expected to emit CO_2 at a rate at 117 lb. CO_2/MMBtu, thereby complying with the 120 lb. CO_2/MMBtu standard.

Greenhouse Gas Table 2
Estimated Potential Annual Greenhouse Gas (GHG) Emissions

Stanton Energy Reliability Center	Operational GHG Emissions ($MTCO_2e/yr$)[a]
Carbon Dioxide (CO_2)	49,483.68
Sulfur Hexafluoride (SF_6) Leakage	2.57
Total Project GHG Emissions ($MTCO_2e/yr$)	**49,486.25**
Estimated Annual Energy Output (MWh/yr)[c]	86,000
Estimated Annualized GHG Performance ($MTCO_2/MWh$)	**0.58**

Source: Ex. 306, p. 2.
Notes: [a] One metric tonne (MT) equals 1.1 short tons or 2,204.6 pounds or 1,000 kilograms.
[b.] Annualized basis uses the project owner's assumed maximum permitted operating basis.

[14] Ex. 300, p. 4.1-103.
[15] Ex. 300, p. 4.1-103.
[16] Ex. 300, p. 4.1-104; Ex. 11, pp. 5.1-11 – 5.1-12; Ex. 39.

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 the SERC are thus not incremental additions to system-wide emissions, but are offset by reductions in GHG emissions from those generation resources that are displaced.[17]

At lower renewable penetration levels, output from new natural gas fired generation facilities, such as the SERC, directly displace less efficient natural gas fired generation. At very low natural gas prices relative to coal prices, i.e., when electricity from natural gas is cheaper than that from coal, new natural gas fired generation will displace coal-fired generation, leading to even greater reductions in GHG emissions. In markets such as California where GHG emissions allowance costs are a component of the market price, coal-fired generation is displaced even sooner due to its higher carbon content. The development and operation of the SERC will not lead to the displacement of energy from zero-carbon generation such as that of renewable, large hydro, or nuclear facilities. These have zero (or, in the case of nuclear, very low) fuel costs and will still be dispatched before natural gas fired generation.[18]

It is reasonable to assume that a cheaper source of energy would be dispatched before an alternative more expensive resource that would otherwise be called upon to operate. The costs of dispatching a power plant are largely the costs of fuel plus variable operations and maintenance costs. Fuel represents the largest share of such costs (90 percent or more). The SERC would be dispatched when it burns less fuel per megawatt hour (MWh) than alternative resources it displaces, which translates to fewer GHG emissions.[19]

In the longer-term, the development and operation of the SERC ultimately leads to the retirement of less-efficient and higher-emitting generation. The SERC will render these other facilities less profitable and riskier to operate by reducing their revenue streams. The developers of the SERC cannot stimulate demand for energy and other products they provide, but merely supply a share of the energy to meet demand and reliably operate the system. Therefore, the SERC will both discourage the use of less-efficient generation and expedite its retirement. The long-run impact of the natural gas fired fleet turnover has been demonstrated in the historical record. Between 2000 and 2010, California

[17] Ex. 300, p. 4.1-108.

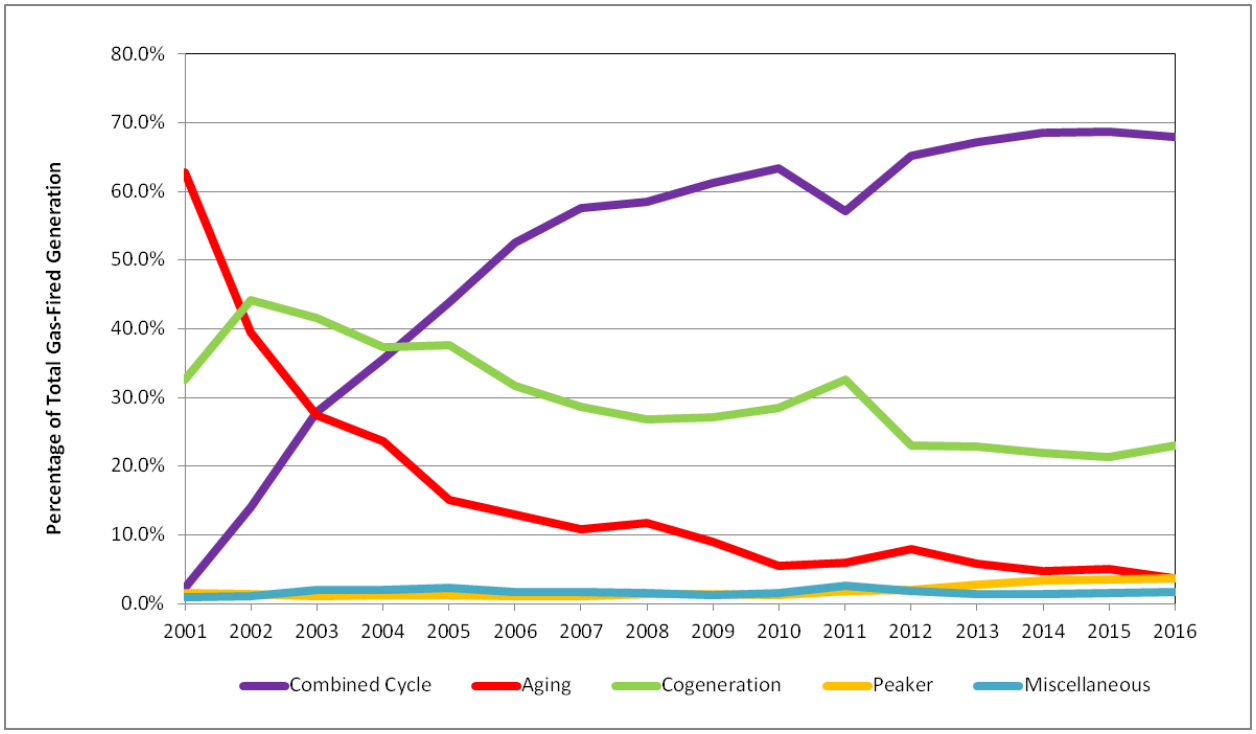
[18] Ex. 300, pp. 4.1-108 – 4.1-109.

[19] Ex. 300, p. 4.1-109.

experienced a 22 percent reduction in GHG emissions despite a 3.5 percent increase in generation.[20]

Greenhouse Gas Figures 1 and **2** illustrate the impact of turnover on the thermal efficiency of the natural gas fired generation fleet. Fuel combustion, and thus GHG emissions per unit of electricity produced, have fallen as newer more efficient plants have replaced older ones.

Greenhouse Gas Figure 1
Share of Total Natural Gas Fired Generation in California, 2001 – 2016

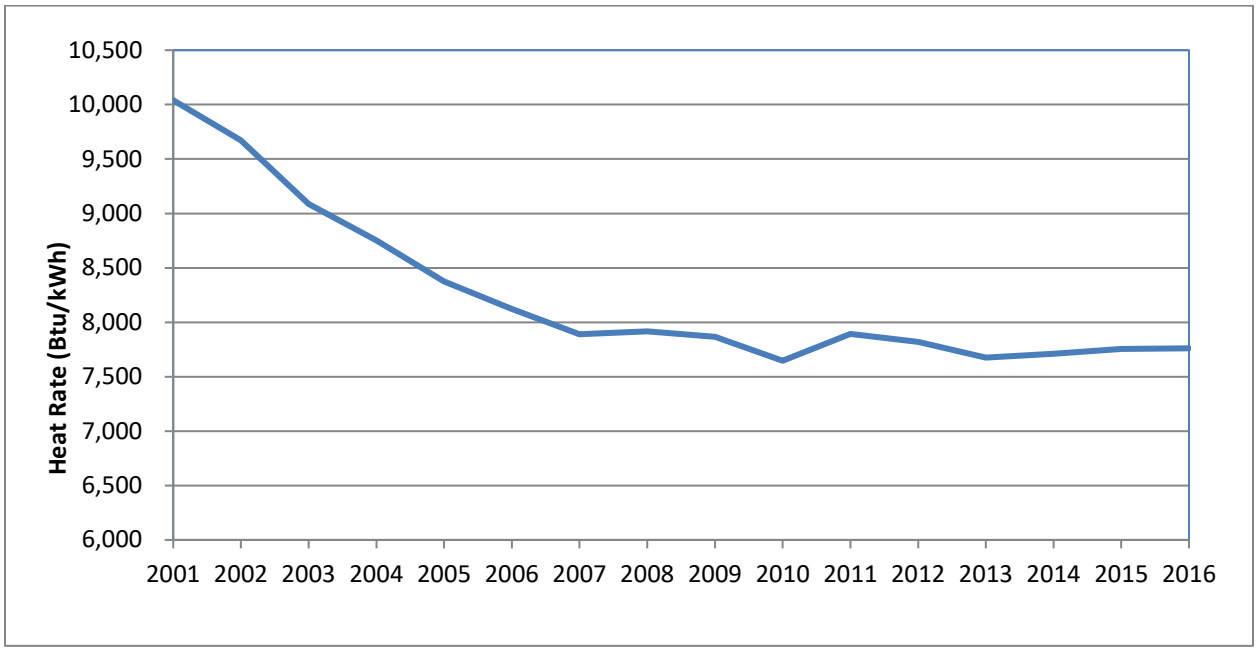


Source: Ex. 300, p. 4.1-113.

At higher levels of renewable energy penetration, such as that necessary to meet California's Renewables Portfolio Standard goals of 50 and 60 percent, and the state's plans for 100 percent of total retail sales of electricity in California to come from eligible renewable energy resources and zero-carbon resources by December 31, 2045,[21] relatively efficient fast-start, fast-ramping resources, with GHG-free operational reserves such as the SERC, further contribute to GHG emission reductions by increasing the amount of renewable energy that can be integrated into the electricity system.[22]

[20] Ex. 300, p. 4.1-112.
[21] Senate Bill 100 (De Leon, Chapter 312, Statutes of 2018).
[22] Ex. 300, pp. 4.1-114 – 4.1-115; Ex. 11, p. 5.1-1.

Greenhouse Gas Figure 2
Average Heat Rates for Gas Fired Electric Generation Serving California



Source: Ex. 300, p. 4.1-113.

Based on the evidence, and pursuant to CEQA Guidelines,[23] we find first, that the SERC will lead to a net reduction in GHG emissions across the electricity system that provides energy and capacity to California and will result in a cumulative overall reduction in GHG emissions from the state's power plants. Secondly, the SERC will not worsen current conditions, and will not cause cumulatively significant impacts. Third, the SERC will comply with statewide GHG regulations (see the Compliance with LORS section, below). In addition, the SERC will provide flexible, dispatchable and fast-ramping power in relatively small increments of capacity, which improves the electric system reliability in a high-renewables, low-GHG system.[24]

Further, as required by the Avenal precedential decision,[25] the simple-cycle turbines of the SERC will have lower heat rates and lower GHG emissions than all of the existing peaking facilities in the local capacity area.[26] Its dispatch will also be in lieu of less-efficient, higher-emitting combined cycles when providing local reliability services, as previously shown.[27] We conclude, based upon the undisputed evidence, that the operations of the SERC project will have no significant GHG impacts, effectively reducing

[23] CEQA Guidelines, Cal. Code Regs., tit. 14, § 15064.4.
[24] Ex. 300, p. 4.1-106.
[25] Final Commission Decision, Avenal Energy Application for Certification (08-AFC-1), December 2009, p. 114.
[26] Ex. 300, p. 4.1-111.
[27] Ex. 300, pp. 4.1-107; 4.1-111.

system-wide GHG emissions and reducing the heat rate of the local capacity area. The SERC's operation will not interfere with renewable energy generation.

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[28] 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.[29]

The SERC will be required to participate in California's GHG cap-and-trade program. 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. As currently implemented, market participants such as the SERC are required to report their 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. As new participants enter the market and as the market cap ratchets down over time, GHG emission allowance and offset prices will increase, encouraging innovation by market participants to reduce their GHG emissions. Thus, the SERC, as a GHG cap-and-trade participant, will be consistent with California's AB 32 Program.[30]

The entire GHG assessment is a cumulative impact assessment. This project will emit GHGs, and is therefore analyzed as a potential cumulative impact in the context of existing GHG regulatory requirements and GHG energy policies. The evidence establishes that the SERC will result in a cumulative overall reduction in GHG emissions from the state's power plants and will not worsen current conditions. We find that the SERC's contribution to GHG emissions will not result in cumulatively considerable GHG emissions impacts.[31]

[28] Cal. Code Regs., tit. 14, § 15130.
[29] Ex. 300, p. 4.1-106 thru 4.1-107.
[30] Ex. 300, p. 4.1-102.
[31] Ex. 300, p. 4.1-106.

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

Greenhouse Gas Table 3
Laws, Ordinances, Regulations, and Standards[32]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
FEDERAL		
[2] 40 Code of Federal Regulations (CFR) Parts 51 and 52	A new stationary source that emits more than 100,000 TPY of GHGs (and other criteria pollutants for which the project area attains federal air quality standards) is considered to be a major stationary source subject to PSD requirements. As of June 23, 2014, the U.S. Supreme Court has invalidated this requirement as a sole PSD permitting trigger. However, for permits issued on or after July 1, 2011, PSD applies to GHGs if the source is otherwise subject to PSD (for another regulated NSR pollutant) and the source has a GHG potential to emit (PTE) equal to or greater than 75,000 TPY CO_2e.	**Compliant**. The SERC is not subject to the PSD analysis for other NSR pollutants and is therefore not subject to GHG PSD analysis; nor is it subject to PSD review for NOx, PM10, SOx, and CO because the potentials to emit for these attainment pollutants do not exceed the applicability thresholds of 250 tpy.[33] See the AIR QUALITY section of this Decision for more information regarding PSD requirements.
40 Code of Federal Regulations (CFR) Parts 60, Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for Electrical Generating Units)	On October 23, 2015, U.S. EPA published new source performance standards (NSPS) for GHG emissions for new, modified, and reconstructed fossil fuel-fired electric utility generating units. SERC turbines will be subject to these requirements.	**Compliant.** The turbines are limited to burning natural gas resulting in a consistent emission rate of 120 lb-CO_2/MMBTU or less.
40 Code of Federal Regulations (CFR) Part 98	Requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2 equivalent emissions per year. This requirement is triggered by this facility.	**Compliant.** The SERC project owner will submit each GHG report and certificate of representation electronically in accordance with the requirements of 40 CFR Part 98 Section 98.4 and in a format specified by the Administrator. Any violation of any requirement of this part shall be a violation of the Clean Air Act.

[32] Ex. 300, pp. 4.1-98 – 4.1-99.

[33] Ex. 300, pp. 4.1-31; 4.1-61; Ex. 11, p. 5.1-3.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
STATE		
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	Requires the ARB to enact standards to reduce GHG emissions to 1990 levels by 2020. Electricity production facilities are included. The cap-and-trade program became active in January 2012, with enforcement beginning in January 2013. Cap-and-trade is expected to achieve approximately 20 percent of the GHG reductions expected under AB 32 by 2020.	**Compliant.** The SERC will be required to participate in California's GHG cap-and-trade program.
California Code of Regulations, Title 17, Subchapter 10, Article 2, sections 95100 et. seq.	These ARB regulations implement mandatory GHG emissions reporting as part of AB 32. California's landmark AB 32 Program is a statewide program coordinated with a region wide Western Climate Initiative program to reduce California's GHG emissions to 1990 levels by 2020.	**Compliant.** The SERC project owner will submit all GHG emissions data reports in compliance with the regulatory requirements via the Cal e-GGRT reporting system.
Title 20, California Code of Regulations, Section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	Prohibits utilities from entering into long-term contracts with any base load facility that does not meet a GHG emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 $MTCO_2/MWh$) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lbs CO_2/MWh).	The SERC will not be a base load facility so this regulation would not apply.
LOCAL		
Rule 1714 – Prevention of Significant Deterioration for Greenhouse Gases, Gas Turbines	Establishes preconstruction review requirements for GHGs. This rule is consistent with federal PSD rule 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 SERC is not subject to GHG PSD analysis.

The SERC is a simple-cycle power plant and subject to the limit of 120-lb CO_2 per MMBtu of heat input. The evidence indicates, and we find, that with the imposition and implementation of the conditions of certification, the construction and operation of the SERC project will comply with all applicable LORS regarding GHGs.

AGENCY AND PUBLIC COMMENT

No comments have been received regarding the topic of Greenhouse Gas Emissions.

FINDINGS OF FACT

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

1. Greenhouse gases include carbon dioxide (CO2), nitrous oxide (N2O), methane (CH4), sulfur hexafluoride (SF6), hydrofluorocarbons (HFC), and perfluorocarbons (PFC).
2. The greenhouse gas emissions from the Stanton Energy Reliability Center's construction are likely to be 2,705 $MTCO_2e$ during the approximate 14-month site preparation and construction period.
3. The Stanton Energy Reliability Center 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. With its estimated 10.3 percent annual capacity factor, the Stanton Energy Reliability Center will be below 60 percent and will not be subject to the SB 1368 Greenhouse Gas Emission Performance Standard of 0.500 $MTCO_2$/MWh.
6. The Stanton Energy Reliability Center is not considered a baseload plant and is not subject to the requirements of SB 1368, the Greenhouse Gas Emission Performance Standard.
7. The greenhouse gas emissions produced by the Stanton Energy Reliability Center are not incremental additions to system-wide emissions, but are offset by reductions in greenhouse gas emissions from those generation resources that it displaces.
8. At higher levels of renewable energy penetration, such as that necessary to meet California's Renewables Portfolio Standard goals of 50 and 60 percent, relatively efficient fast-start, fast-ramping resources such as the Stanton Energy Reliability Center further contribute to greenhouse gas emission reductions by increasing the amount of renewable energy that can be integrated into the electricity system.
9. The Stanton Energy Reliability Center will not increase the overall system heat rate for natural gas plants because it will displace plants that have higher heat rates.
10. The operation of Stanton Energy Reliability Center will not lead to the displacement of energy from zero-carbon generation, such as renewable, large hydro, or nuclear facilities.
11. When it operates, the Stanton Energy Reliability Center will displace generation from higher greenhouse gas emitting power plants.

12. The Stanton Energy Reliability Center's operation will reduce overall greenhouse gas emissions from the electricity system.

13. The Stanton Energy Reliability Center will result in a cumulative overall reduction in greenhouse gas emissions from the state's power plants and will not worsen current conditions.

14. The Stanton Energy Reliability Center will not result in impacts that are cumulatively considerable.

15. The Stanton Energy Reliability Center will be required to participate in the state's cap-and-trade program and will be required to purchase allowances and offsets for its greenhouse gas emissions.

16. The Stanton Energy Reliability Center's construction-related greenhouse gas emissions will not cause a significant environmental impact because they are limited in duration, are subject to best available control technology restrictions, and are of relatively small magnitude compared to operations emissions.

17. 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 plant is an integrated part.

18. When considered on a system-wide basis, the operation of the Stanton Energy Reliability Center will reduce greenhouse gas emissions, and will therefore not cause a significant environmental impact.

19. The Stanton Energy Reliability Center's operation will facilitate the achievement of the greenhouse gas goals of Assembly Bill 32 and Senate Bill 100.

CONCLUSIONS OF LAW

1. The Stanton Energy Reliability Center is consistent with the Energy Commission's Avenal Precedential Decision.

2. The greenhouse gas impacts from operation of the Stanton Energy Reliability Center will not cause a significant environmental impact because the Stanton Energy Reliability Center will comply with cap and trade, a statewide program for management and reduction of the cumulative greenhouse gas impacts of the electric and industrial sectors.

3. Construction and operation of the Stanton Energy Reliability Center project will comply with all applicable laws, ordinances, regulations, and standards regarding greenhouse gases.

B. AIR QUALITY

INTRODUCTION

The construction and operation of the Stanton Energy Reliability Center (SERC) 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 SERC 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 insignificant levels.

Evidence on the topic of Air Quality is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 11, 39, 40, 41, 43, 44, 45, 54, 55, 56, 63, 70, 72, 73, 80, 81, 84, 85, 86, 87, 88, 90, 92, 100, 103, 300, 301, 302, 303, and 306.[1]

SETTING AND PROJECT DESCRIPTION

The SERC site is located in the South Coast Air Basin (SCAB). The city of Stanton is on a coastal plain about 7.8 miles from the Pacific Ocean, and the area can be generally characterized as a Mediterranean climate. Terrain surrounding the project location is mostly flat or rolling with gradual elevation increases toward the north and northeast. There is no significant terrain between the ocean and the project site. The evidence contains a detailed description of the climate and meteorology of the SERC area.[2]

The SERC will consist of two Hybrid EGT (electric gas turbine) systems. The Hybrid EGT combines a General Electric (GE) LM6000 combustion gas turbine with an integrated 10-megawatt (MW) GE battery storage component operated by a proprietary software system developed by GE based upon Wellhead's patent. The integrated system will be capable of providing greenhouse gas (GHG) free spinning reserve, high speed regulation, primary frequency response, and voltage support with the combined response of the gas turbine and battery storage system. In total, the SERC will provide 98 MW (nominal) of capacity.[3]

Separate emissions estimates for the SERC project during the construction phase, commissioning, and operation are each described in this section.

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

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[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 300 p. 4.1-8.

[3] Ex. 300, p. 4.1-1.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

Potential impacts from the SERC will result from the site preparation, construction, commissioning, normal operation phases, and cumulative effects. All project emissions of nonattainment criteria pollutants and their precursors are considered significant and must be mitigated. For short-term construction activities that essentially cease before operation of the power plant, the assessment is qualitative and mitigation consists of controlling construction equipment tailpipe emissions and fugitive dust emissions to the maximum extent feasible. For operating emissions, mitigation includes both the Best Available Control Technology (BACT) and emission reduction credits (ERC) or other valid emission reductions to mitigate emissions of both nonattainment criteria pollutants and their precursors.[4]

Ambient air quality impacts occur when project emissions cause the ambient concentration of a pollutant to increase. Pollutants from a proposed project are measured on a mass basis. Project-related emissions are the actual mass of emitted pollutants, which are dispersed in the atmosphere before reaching the ground. Impacts refer to the concentration of any pollutant that reaches the ground level. An impact analysis includes quantifying the emissions released from the proposed equipment and the use of an atmospheric dispersion model to determine the probable impact at ground level. The analysis focuses on the predicted change to the ground-level impact due to the additional emissions from the project.[5]

Air dispersion models provide a means of predicting the location and ground level magnitude of the impacts of a new emissions source. These models consist of several complex series of mathematical equations, which are repeatedly calculated by a computer for many ambient conditions to provide theoretical maximum off-site pollutant concentrations for short-term (one-hour, three-hour, eight-hour, and 24-hour) and annual periods. The model results are generally described as maximum concentrations, often described as a unit of mass per volume of air, such as micrograms per cubic meter (µg/m3).[6]

The Stanton Energy Reliability Center, LLC (Applicant) conducted air dispersion modeling based on guidance presented in the Guideline on Air Quality Models[7] and the American Meteorological Society/ Environmental Protection Agency Regulatory Model (AERMOD). The inputs for the air dispersion models include stack information (exhaust flow rate,

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[4] Ex. 300, p. 4.1-20.

[5] Ex. 300, p. 4.1-21.

[6] *Id*.

[7] 40 CFR part 51, **Appendix W**.

temperature, and stack dimensions), specific turbine emission data and meteorological data, such as wind speed and atmospheric conditions, and site elevation.[8]

Summary of Background Ambient Air Quality

Background concentrations of ozone (O_3), nitrogen oxides (NO_2), carbon monoxide (CO), inhalable/respirable particulate matter (PM10), and fine particulate matter (PM2.5) were determined using the Anaheim monitoring station (located 5.0 kilometers (km) east-northeast from the project site) data. Because ambient concentrations of sulfur dioxide (SO_2) are not available at the Anaheim station, SO_2 data collected at the Costa Mesa monitoring station (located 15.9 km to the south-southeast of the SERC site) was used for analysis.[9]

The evidence describes the wind flow, atmospheric stability, and mixing heights, which are important factors in the determination of pollutant dispersion. Wind flow patterns affect air movement in the atmosphere and influence the transport of pollutants to and from the SERC site. Wind roses and wind frequency distribution data collected at the Anaheim station from 2006-2009 and 2012 display the wind direction, speed and frequency at that location.[10] The most predominant annual wind direction is from the southwest. There are also less frequent winds from the northeast occurring mostly during the winter. The annual occurrence of calm wind is about 0.14 percent.[11]

The southern California coast is characterized by the cooling effect of the ocean on the surface air. As the surface air cools, it becomes denser than the warmer air above it, producing an inversion layer. Inversion layers are formed when temperature increases with height. Inversion layers are present on approximately 87 percent of the days in the year along the southern California coast. The inversion layer forms a stable layer that limits the mixing of air near the surface and tends to trap pollutants close to the surface.

The meteorological conditions present affect the formation and concentrations of air pollutants. The potential for high concentrations of pollutants can vary seasonally. Temperature can influence the vertical mixing height and affects chemical and photochemical reaction time. During late spring, summer, and early fall, light winds, low mixing heights, and sunshine combine to create an environment favorable to the production of photochemical oxidants, particularly ozone. During the spring and summer, deep marine layers are frequently formed along the southern California coast and sulfate concentrations are at their peak.[12]

[8] Ex. 11, p. 5.1-18; Ex. 70, 5.1-18; Ex. 300, p. 4.1-21.
[9] Ex. 300, p. 4.1-12.
[10] Ex. 301, p. 183 (pdf page 183 of 198).
[11]Ex. 300, p. 4.1-9.
[12] Ex. 300, p.4.1-9.

Ambient Air Quality Standards

The U.S. Environmental Protection Agency (U.S. EPA) and the California Air Resources Board (ARB) have both established allowable maximum ambient concentrations of criteria air pollutants. These are based upon public health impacts and are called “ambient air quality standards.” Ambient air quality standards are designed to protect people who are most susceptible to respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and people engaged in strenuous work or exercise. The ambient air quality standards are also set to protect public welfare, including protection against decreased visibility and damage to animals, crops, vegetation, and buildings.

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 g) of pollutant in a cubic meter (m3) of ambient air, drawn over the applicable averaging period.[13]

[13] Ex. 300, p.4.1-10.

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 µg/m^3)[a]	0.070 ppm (137 µg/m^3)
	1 Hour	—	0.09 ppm (180 µg/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 µg/m^3)	30 ppb (57 µg/m^3)
	1 Hour	100 ppb (188 µg/m^3)[b]	180 ppb (339 µg/m^3)
Sulfur Dioxide (SO_2)	24 Hour	—	0.04 ppm (105 µg/m^3)
	3 Hour	0.5 ppm (1300 µg/m^3)	—
	1 Hour	75 ppb (196 µg/m^3)[c]	0.25 ppm (655 µg/m^3)
Respirable Particulate Matter (PM10)	Annual	—	20 µg/m^3
	24 Hour	150 µg/m^3	50 µg/m^3
Fine Particulate Matter (PM2.5)	Annual	12 µg/m^3	12 µg/m^3
	24 Hour	35 µg/m^3 [b]	—
Sulfates (SO_4)	24 Hour	—	25 µg/m^3
Lead	30-Day Average	—	1.5 µg/m^3
	Rolling 3-Month Average	1.5 µg/m^3	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 µg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 µg/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. 300., pp.4.1-10.
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.

Ambient Air Quality Attainment Status

The U.S. EPA, ARB, and the South Coast Air Quality Management District (SCAQMD) have established air monitoring plans designed to obtain representative data on the ambient levels of pollutants. This data is used to classify an area as attainment, unclassified, or nonattainment, depending on whether or not the monitored ambient air quality data indicates compliance, insufficient data is available, or non-compliance with the ambient air quality standards, respectively. In general, an area is designated as attainment if the concentration of a particular air contaminant does not exceed the air quality standard. Likewise, an area is designated as nonattainment for an air contaminant if it exceeds the corresponding air quality standard. In circumstances where there is not enough ambient data available to support designations as either attainment or nonattainment, the area can be designated as unclassified or unclassifiable. An unclassified area is normally treated the same as an attainment area for regulatory

purposes. In addition, an area could be designated as attainment for one air contaminant while nonattainment for another, or attainment for the federal standard and nonattainment for the state standards for the same air contaminant.[14]

Exceptional events that are out of human control that create very high pollutant concentrations such as wind storms and fires are generally excluded from attainment designations.

The federal and state attainment status for specified pollutants in the SCAQMD is summarized in **Air Quality Table 2**. "Criteria air pollutants" include nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), and PM10/PM2.5. Precursor pollutants for O_3 include NO_X, consisting of nitric oxide (NO) and NO_2, and volatile organic compounds (VOC). Precursors for particulate matter are primarily NO_X, SO_X, and ammonia (NH_3).[15]

Air Quality Table 2
Attainment Status of South Coast Air Quality Management District (SCAQMD)

Pollutants	Attainment Status	
	Federal Classification	**State Classification**
Ozone (1-hr)	No Federal Standard[a]	**Nonattainment**
Ozone (8-hr)	**Nonattainment**	**Nonattainment**
CO	Unclassified/Attainment	Attainment
NO_2	Unclassified/Attainment	Attainment
SO_2	Attainment	Attainment
PM10	Attainment	**Nonattainment**
PM2.5	**Nonattainment**	**Nonattainment**
Sulfates	No Federal Standard	Attainment
Lead	**Nonattainment[b]**	Attainment
Hydrogen Sulfide (H2S)	No Federal Standard	Unclassified
Visibility Reducing Particulates	No Federal Standard	Unclassified

Source: Ex. 300, p.4.7-11.
Note: [a] The federal 1-hour standard was revoked in June 2005, however the South Coast Air Basin has not attained this standard and is subject to anti-backsliding requirements.
Note: [b] Los Angeles County portion of the basin.

Air Quality Table 3 shows the highest criteria pollutant or average concentrations from the last three years of available data collected from the surrounding monitoring stations. This information was used to determine the baseline for modeling and impacts analysis. The pollutant modeling analysis was limited to the pollutants listed in **Air Quality Table 3**. Therefore, recommended background concentrations were not determined for the

[14] Ex. 300, p. 4.1-11.
[15] Ex. 300, p. 4.1-11.

other criteria pollutants (ozone, lead,[16] visibility, etc.). Concentrations in excess of their ambient air quality standard are shown in bold.[17]

Air Quality Table 3
Background Ambient Air Quality Concentrations (µg/m^3)

Pollutant	Averaging Time	Background	Limiting Standard	Percent of Standard
PM10	24 hour	**85**	50	168
	Annual	**26.8**	20	134
PM2.5	24 hour	34.4	35	86
	Annual	10.5	12	88
CO	1 hour	3,565	23,000	17
	8 hour	2,444	10,000	29
NO_2	State 1 hour	141	339	45
	Federal 1 hour	112.8	188	60
	Annual	28.2	57	60
SO_2	1 hour	23.0	655	4
	Federal 1 hour	10.5	196	5
	24 hour	3.7	105	4

Source: Ex. 300, 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.

Impact Assessment and Mitigation

Methodology

Project-related modeled concentrations were added to the highest background concentrations to determine the total impact of the project. This is a conservative approach because it assumes the highest project impacts occur concurrently with the worst case background concentrations. Staff combined the Applicant's modeled impacts with the appropriate background concentrations, and compared the results with the ambient air quality standards for each respective air contaminant to determine whether the project's emission impacts would cause a new exceedance of the ambient air quality standards or contribute to an existing exceedance.[18]

[16] The portion of the SCAB where the project is located is in attainment for both the federal and state lead standards. Also, lead emissions from the SERC facility will be zero, therefore, lead impacts analysis was unnecessary (see Ex. 300, p. 4.1-15).
[17] Ex. 300, p. 4.1-15.
[18] Ex. 300, p. 4.1-22.

Construction

Construction of the SERC is expected to last approximately 14 months. Actual construction activities will occur during months 1 through 10, while commissioning, testing, and startup will occur in months 11 and 12. During months 13 and 14, the completion of the electric interconnection facilities will occur.[19] The peak construction workforce is expected to be on site during month 8. Off-site linears are assumed to be constructed during months 4 through 6. The construction will occur in four main phases: 1) mobilization and site preparation; 2) foundation work; 3) construction and installation of major structures; and 4) equipment commissioning, testing, and startup.[20]

Air Quality Table 4 summarizes the results of the modeling analysis for the SERC construction activities. The total impact is the sum of the existing background condition plus the maximum impact predicted by the modeling analysis for project activity. The values in **bold** in the "Total Impact" and "Background" columns represent the values that either equal or exceed the relevant ambient air quality standard.[21]

Air Quality Table 4 shows that PM10 emissions from construction would contribute to existing violations of PM10 ambient air quality standards; mainly because the background concentrations already exceed the state standards. Background PM2.5 levels are near the standards and PM2.5 emissions from construction would also cause new exceedances of the state 24-hour standard and make the annual impact very close to the ambient air quality standard. Therefore, particulate matter emissions from the SERC construction would cause significant impacts. Significant secondary impacts would also occur for PM10, PM2.5, and ozone because construction-phase emissions of particulate matter precursors (including SOx) and ozone precursors (NOx and VOC) would also contribute to existing violations of these standards.[22]

As shown in **Air Quality Table 4**, the direct impacts of NO_2, in conjunction with worst-case background conditions, would not create a new exceedance of the current annual or 1-hour NO_2 state ambient air quality standard.

To determine compliance with the federal 1-hour NO_2 standard, one normally would take an average of the construction NO_2 emissions over a three-year period; however, because construction of the SERC is only estimated to last 14 months, there is insufficient NO_2 emissions data to complete an analysis of compliance with the federal 1-hour NO2 standard. The direct impacts of CO and SO_2 would not be significant because

[19] Ex. 307, p. 1.
[20] Ex. 300, 4.1-16
[21] Ex. 300, 4.1-22.
[22] *Id*.

construction of the project would neither cause nor contribute to an exceedance of these standards.[23]

Air Quality Table 4
SERC Construction-Phase Maximum Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24 hour	27.4	**85**	**112.4**	50	225
	Annual	7.6	**26.8**	**34.4**	20	172
PM2.5	24 hour	3.9	34.4	**38.3**	35	109
	Annual	1.15	10.5	11.65	12	97
CO	1 hour	28.35	3,565	3,593.35	23,000	16
	8 hour	13.7	2,444	2457.7	10,000	25
NO_2	State 1 hour	29.4	141	170.4	339	50
	Annual	1.01	28.2	29.21	57	51
SO_2	State 1 hour	0.07	23.0	23.07	655	4
	24 hour	0.01	3.7	3.71	105	4

Source: Ex. 300, 4.1-23.

Construction Mitigation

The Applicant proposed the following mitigation measures to reduce the exhaust emissions from the diesel heavy equipment and fugitive dust emissions during the construction of the SERC project:

- Maintain an on-site construction mitigation manager responsible for the implementation and compliance of the construction mitigation program. The documentation of the ongoing implementation and compliance with the proposed construction mitigation will be provided on a periodic basis.
- Water all unpaved roads and disturbed areas in the project and laydown construction sites as frequently as necessary to control fugitive dust. The frequency of watering will be on a minimum schedule of three times per day during the daily construction activity period.
- On-site vehicle speeds will be limited to 5 miles per hour on unpaved areas within the SERC construction site.
- Visible speed limit signs will be posted at the construction site entrances.

[23] Ex. 300, 4.1-22.

- Inspect and clean all construction equipment vehicle tires as necessary to be free of dirt prior to leaving the construction site via paved roadways.
- Gravel ramps will be installed at the tire cleaning area.
- All unpaved exits from the construction site will be graveled or treated to reduce 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 construction Storm Water Pollution Prevention Plan to prevent runoff to roadways.
- All paved roads within the construction site will be cleaned on a periodic basis to prevent the accumulation of dirt and debris.
- The first 500 feet of any public roadway exiting 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.
- Any soil storage piles and/or disturbed areas that remain inactive for longer than 10 days will be covered or treated with appropriate dust suppressant compounds.
- All vehicles that are used to transport solid bulk material on public roadways and that have the potential to cause visible emissions will be covered or 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.
- 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.
- Disturbed areas will be re-vegetated as soon as practical.
- Construction contractors will utilize, to the extent feasible, EPA-ARB Tier 2/Tier 3 engine compliant equipment for equipment greater than 100 horsepower.
- Ensure periodic maintenance and inspections per the manufacturers' specifications.
- Reduce idling time through equipment and construction scheduling.

- Use California low sulfur diesel fuels (less than 15 ppmw (parts per million by weight)).[24]

We concur with the Applicant's proposed mitigation measures. We will impose additional mitigation, such as requiring the use of oxidizing soot filters for all heavy diesel-powered construction equipment that does not use an ARB-certified low emission diesel engine. We will also require the project owner to submit an Air Quality Construction Mitigation Plan (AQCMP) prior to commencement of construction that specifically identifies mitigation measures to limit air quality impacts during construction.

Condition of Certification **AQ-SC1** requires an Air Quality Construction/Demolition Mitigation Manager to ensure compliance with all conditions for construction/demolition activities. Condition of Certification **AQ-SC2** requires a plan detailing the steps necessary to limit emissions from construction/demolition activities. Condition of Certification **AQ-SC3** requires mitigation for fugitive dust control. Condition of Certification **AQ-SC4** requires monthly reports to be submitted documenting compliance with conditions. Condition of Certification **AQ-SC4** outlines monitoring requirements for dust from construction activities to ensure adequacy of the mitigation. Condition of Certification **AQ-SC5** requires diesel-fueled engine controls and ensures that the cleanest engines available are used to protect public health and for consistency with the construction impact modeling. Condition of Certification **AQ-SC6** requires the project owner to provide copies of all air permits issued by the SCAQMD, including any proposed modification, to the Energy Commission compliance project manager (CPM). Condition of Certification **AQ-SC7** requires quarterly reports to ensure ongoing compliance during commissioning and routine operation.

Construction impacts will contribute to violations of the PM10 and PM2.5 ambient air quality standards, however, we find that Conditions of Certification **AQ-SC1** to **AQ-SC7** will mitigate the temporary construction-phase impacts of the SERC to a less than significant level.[25]

Operations

Routine Operations Impacts

The number of hours per year that the SERC would be required to operate in support of local reliability needs and the amount of energy that would be generated as a result are not known, although for air quality permitting purposes, the SERC's two EGTs would be limited to operate for a maximum of approximately 900 hours per year.[26] The record contains detailed modeling analyses used to estimate the ambient air quality impacts of

[24] Ex. 43; Ex. 300, pp. 4.1-23 – 4.1-24.
[25] Ex. 300, pp. 4.1-23 – 4.1-25.
[26] Ex. 300, pp. 4.1-19 and 4.1-110.

the SERC. Emissions and operating parameters exhibit variation with ambient temperature and operating load. To determine the worst case air quality impacts, a dispersion modeling analysis was conducted at three load scenarios and at three different temperatures.[27]

The worst case 1-hour NO_2 and CO impacts reflect startup impacts, and all other impacts reflect impacts that would occur during normal operation. The modeled impacts are conservative, since the maximum impacts are evaluated under a combination of highest allowable emission rates, the most extreme meteorological conditions and worst-case background values, which are unlikely to all occur simultaneously. Emissions rates are shown in **Air Quality Table 5**.[28]

Air Quality Table 5
SERC Maximum Emissions Rates During Routine Operation

	NOx	CO	VOC	SOx	PM10/2.5
Total Maximum Hourly Emission (lbs/hr)	6.72	8.08	3.17	1.02	3.00
Total Maximum Daily Emission (lbs/day)	232.3	238.06	74.56	47.3	144.32
Total Maximum Annual Emission (tons/year)	3.92	4.58	1.72	0.30	2.70

Source: Ex. 70, p. 5.1-9; Ex. 300, p. 4.1-19.

The predicted maximum concentrations of criteria pollutants are summarized in **Air Quality Table 6**. The values shown in bold exceed ambient air quality standards.

[27] Ex. 300, p. 4.1-26.
[28] Ex. 300, p. 4.1-26.

Air Quality Table 6
SERC Routine Operation Maximum Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
PM10	24 hour	0.5	**85**	**85.5**	50	171
	Annual	0.02	**26.8**	**26.82**	20	134
PM2.5	24 hour [a]	0.5	34.4	34.9	35	99
	Annual	0.02	10.5	10.52	12	88
CO	1 hour	9.3	3,565	3574	23,000	16
	8 hour	2.2	2,444	2446	10,000	24
NO_2 [b]	State 1 hour	6.2	141	147.2	339	43
	Federal 1 hour [c]	2.5	112.8	115.3	188	61
	Annual	0.02	28.2	28.22	57	50
SO_2	State 1 hour	0.4	23.0	23.4	655	4
	Federal 1 hour [d]	0.4	10.5	10.9	196	6
	24 hour	0.07	3.7	3.77	105	4

Source: Ex. 11, p. 5.1-28; Ex. 300, p. 4.1-26; Ex. 301.
Note:
[a] Total predicted concentration for the federal 24-hour PM2.5 standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.
[b] The maximum 1-hour and annual NO_2 concentrations include ambient NO_2 ratios of 0.80 and 0.75 respectively.
[c] Total predicted concentration for the federal 1-hour NO_2 standard is the maximum modeled concentration combined with the 3-year average of 98th percentile background concentrations.
[d] Total predicted concentration for the federal 1-hour SO_2 standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

Air Quality Table 6 shows that PM10 emissions from the SERC would cause a significant impact, which would contribute to existing violations of PM10 ambient air quality standards, if left unmitigated. The impacts of PM2.5 emissions are close to the most stringent standards due to the existing high background concentrations, but will not create new violations.

The direct impacts of NO_2, in conjunction with worst-case background conditions, will not create a new violation of the current federal or state NO_2 ambient air quality standards, including the new federal 1-hour NO_2 standard. The direct impacts of CO and SO_2 will also not be significant because routine operation of the SERC will neither cause nor contribute to a violation of these standards. Mitigation for emissions of PM10, PM2.5, SOx, NOx, and VOC are appropriate for reducing impacts to PM10, PM2.5, NO_2, and ozone.[29]

[29] Ex. 300, p. 4.1-27.

Fumigation Impacts

During the early morning hours before sunrise, the air is usually very stable. During such stable meteorological conditions, emissions from elevated stacks rise through this stable layer and are dispersed. When the sun first rises, the air at ground level is heated, resulting in a vertical (both rising and sinking air) mixing of air for a few hundred feet or so. Emissions from a stack that enter this vertically mixed layer of air would also be vertically mixed, bringing some of those emissions down to the ground level. Later in the day, as the sun continues to heat the ground, this vertical mixing layer rises and the emissions plume becomes better dispersed.[30]

The early morning pollution event called "fumigation," usually lasts approximately 30 to 90 minutes. There is the potential that higher short-term concentrations of pollutants may occur during fumigation conditions. Fumigation conditions are short-duration events and are generally only compared to one-hour standards. A fumigation analysis using the U.S. EPA's AERSCREEN[31] model (Version 15181) was performed. The analysis considered three routine operating scenarios and loads, regulatory default mixing heights, and short-term averaging times. The fumigation impact results were then compared to the maximum AERSCREEN impacts for flat terrain. All of the fumigation impact results were less than the AERSCREEN maxima predicted to occur under normal dispersion conditions anywhere off site. Since the SERC fumigation impacts are less than the maximum overall AERSCREEN impacts, no further analysis of additional short-term averaging times is required. Thus, the overall modeling analysis impacts are conservative with respect to fumigation impacts, and no pollutant-specific fumigation results are presented.[32]

Based on the Applicant's analysis, the SCAQMD conducted additional analysis using AERSCREEN. The modeling parameters for the worst-case operating scenarios were used for each of the modeled pollutants and averaging times. The evidence establishes that the maximum inversion break-up impacts combined with background values are below the applicable ambient air quality standards (AAQS) and are therefore not significant. [33]

Commissioning-Phase Impacts

The commissioning activities for the combustion turbines are expected to last no more than 200 hours total for both turbines during the first year of operation. **Air Quality Table 7** shows the worst-case, short-term NO_X and CO commissioning emissions are 42.81

[30] Ex. 300, p. 4.1-29.
[31] AERSCREEN is the U.S.EPA's recommended screening-level air quality model.
[32] Ex. 300, p 4.1-29.
[33] Ex. 11, pp. 5.1-18; 5.1-29; Ex. 300, p. 4.1-29.

lbs/hr/turbine and 55.30 lbs/hr/turbine, respectively. They will occur prior to the installation of the catalyst.[34]

Impacts due to PM10, PM2.5, and SO_2 during commissioning will occur under similar exhaust conditions as those for startup while in routine operation, because these emissions are proportional to fuel use. Therefore, short-term SO_2 and PM10/2.5 emissions during commissioning activities will be the same as for normal operations.[35]

Air Quality Table 7
SERC Estimated Initial Commissioning Emissions

	Maximum Commissioning Emissions				
	NOx	**CO**	**VOC**	**SOx**	**PM10/2.5**
Two Turbines (lbs/hr)[a]	85.62	110.60	17.92	2.04	6.00
Two Turbines (lbs/day)[a]	2,054.88	2,654.40	430.08	48.91	144.0
Two Turbines (tons/year)	1.90	0.48	0.145	0.07	0.30

Source: Ex. 300, p. 4.1-18; Ex. 70, p. 5.1-11; Ex. 11, p. 5.1-11, Ex. 12.
Note: [a] Total facility emissions for two turbines, conservatively assuming commissioning of both turbines simultaneously.

Air Quality Table 8 shows that the commissioning phase emissions will not cause new exceedances of any state or federal ambient air quality standards.[36] Since the commissioning activities will occur for less than 200 hours total for both turbines, commissioning impacts were not assessed for the 1-hour NO_2 National Ambient Air Quality Standard per U.S. EPA guidance.[37]

Air Quality Table 8
SERC Commissioning Phase Maximum Impacts (µg/m³)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
CO	1-hour	63.8	3,565	3,629	23,000	16
	8-hour	21.3	2,444	2,465	10,000	25
NO_2	1-hour (state)	39.5	141	181	339	53

Source: Ex. 300, p. 4.1-28. Ex. 301.

Chemically Reactive Pollutant Impacts

The SERC project's gaseous emissions of NOx, SOx, VOC, and ammonia can contribute to the formation of secondary pollutants (ozone and PM10/PM2.5). There are no regulatory agency models approved for assessing single-source ozone impacts, however, the emissions of NOx and VOC from the SERC project do have the potential (if left unmitigated) to contribute to higher ozone levels in the region. These impacts would

[34] Ex. 40; Ex. 300, p. 4.1-28.
[35] *Id*.
[36] Ex. 300, p. 4.1-28.
[37] Ex. 11, p. 5.1-29.

be cumulatively significant because they would contribute to ongoing violations of the state and federal ozone ambient air quality standards.[38]

Secondary particulate formation, which is assumed to be 100 percent PM2.5, is the process of conversion from gaseous reactants to particulate products. SOx and NOx emissions are converted into sulfuric acid and nitric acid first, and then react with ambient ammonia to form sulfate and nitrate. The sulfuric acid reacts with ammonia much faster than nitric acid and converts completely and irreversibly to particulate form. Nitric acid reacts with ammonia to form both a particulate and a gas phase of ammonium nitrate. The process of gas-to-particulate conversion is described in more detail in the evidentiary record.[39]

Ammonia (NH3) is a particulate precursor but not a criteria pollutant because there is no ambient air quality standard for ammonia. Staff recommends limiting ammonia slip emissions to the maximum extent feasible to avoid unnecessary ammonia emissions by requiring control systems be operated and maintained to routinely achieve less than 5.0 parts per million (dry ppmvd) by volume. (See Condition of Certification **AQ-A8.**)[40] We concur with Staff's recommendation.

Operation Mitigation

Emission Controls

The Applicant proposes to employ selective catalytic reduction (SCR) with water injection, an oxidation catalyst, and to operate exclusively on pipeline quality natural gas to limit combustion turbine emission levels. The SCAQMD completed a detailed BACT evaluation for the SERC with the proposed BACT limits outlined above. Staff concurs with the SCAQMD's determination that the SERC's proposed emission controls/emission levels for criteria pollutants and ammonia slip meet BACT requirements.[41]

Emission Offsets

SCAQMD Rule 1303(b)(2) requires a net increase in emissions of any nonattainment air contaminant or precursors to a nonattainment air pollutant (NOx, VOC, PM10, and SOx) from a new or modified source to be offset unless exempt from offset requirements pursuant to Rule 1304. The SCAQMD's threshold for requiring offsets based on Rule 1304 (d)(1)(A), **Table** A is 4 tons per year (tpy). As shown in **Air Quality Table 5**, the facility's maximum expected potential-to-emit emissions for NOx (3.92 tons per year (tpy)), VOC (1.72 tpy), PM10 (2.70 tpy), and SOx (0.3 tpy) for the two turbines are each

[38] Ex. 300, p. 4.1-27.
[39] Ex. 300, pp. 4.1-27 – 4.1-28.
[40] Ex. 300, pp. 4.1-57; 4.1-59.
[41] Ex. 7, pp. 2-2; 2-24 – 2-25; Ex. 11, pp. 5.1-6 7 5.1-7; Ex. 19, p. 5.9-12; Ex. 44; Ex. 81; Ex. 83; Ex. 300, p. 4.1-32; Ex. 301.

less than 4 tpy. Per Rule 1303(b)(2), since CO is an attainment pollutant and not a precursor to any nonattainment pollutant, offset requirements for CO are not applicable.[42]

SCAQMD determined that the SERC is exempt from providing emission offsets.[43] However, in order to comply with SCAQMD Rule 1315 – Federal New Source Review (NSR) Tracking System, the SCAQMD will provide offsets for the SERC from SCAQMD's internal accounts.[44]

The SCAQMD will provide emission offsets from its Offset Accounts for Nonattainment Air Contaminants. According to SCAQMD Rule 1315, the SCAQMD is required to track all emission increases that are offset through the Offset Accounts for Federal NSR equivalency, which includes the emission offsets from the Priority Reserve under Rule 1309.1 for certain qualifying facilities, and for facilities such as the SERC that are exempt from offset requirements under SCAQMD Rule 1304. These increases are all debited from SCAQMD's federal offset accounts when they occur at federal major sources. For federal equivalency demonstrations, SCAQMD uses an offset ratio of 1.2-to-1.0 for extreme non-attainment pollutants (ozone and ozone precursors, i.e., VOC and NOx) and uses 1.0-to-1.0 for all other non-attainment pollutants (non-ozone precursors, i.e., SOx, CO, and PM10/2.5) to offset any such increases.[45]

Based on the exemption requirements of the SCAQMD Rule 1304 and the offset accounts/tracking requirements under Rule 1315, the evidence shows, and the SCAQMD has certified, that the use of the SCAQMD offset account for the SERC will fully mitigate the project impacts from NOx, VOC, SOx, PM10, and PM2.5 emissions, and additional California Environmental Quality Act (CEQA) mitigation is not required. Since CO is an attainment pollutant and not a precursor to any nonattainment pollutant, CEQA offset mitigation for CO is also not required.[46]

District condition A63.2 will limit the annual emission limits for NOx, CO, VOC, PM10, and SOx, based on the total combined emissions from both turbines, to 7,848 lb/yr NOx, 9,143 lb/yr CO, 3,432 lb/yr VOC, 5,412 lb/yr PM10, and 595 lb/yr SOx. Annual limits to stay under the Rule 1304(d)(1)(A) offset exemption thresholds will be based upon the total combined emissions from all SERC equipment that emits the specific air pollutants. Staff has included the same condition in Condition of Certification **AQ-A2**. Considering that the SERC is a hybrid electrical generating facility with low emissions via emission controls and has a limited dispatch, Staff testified that the SERC would be fully mitigated as long

[42] Ex. 11, pp. 5.1-11 – 5.1-12; Ex. 83; Ex. 301, p. 92.
[43] Ex. 300, p. 4.1-32.
[44] Ex. 300, p. 4.1-32.
[45] Ex. 300, p. 4.1-34.
[46] Ex. 300, p. 4.1-34; 8/2/18 RT 19:18-23.

as all conditions of certification are accepted. Therefore, Staff did not propose additional mitigation measures.[47]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects; (2) other current projects; and (3) probable future projects.[48]

For air quality, cumulative impacts are assessed in terms of conformance with an air district's attainment or maintenance plans.[49] The SCAQMD is the agency with principal responsibility for analyzing and addressing cumulative air quality impacts, including the impacts of ambient ozone and particulate matter. The SCAQMD has summarized the cumulative impact of ozone and particulate matter on the air basin from the broad variety of its sources. Analyses of these cumulative impacts, as well as the measures the SCAQMD proposes to reduce impacts to air quality and public health, are summarized in the record.[50]

The SERC and other reasonably foreseeable projects could cause impacts that would be locally combined. Future projects would introduce stationary sources that are not included in the "background" conditions. Reasonably foreseeable future projects are those that are either currently under construction or in the process of being approved by a local air district or municipality. Future projects that have not yet entered the approval process do not normally qualify as "foreseeable" since the detailed information needed to conduct this analysis is not available. Sources that are presently operational are included in the background concentrations. Background conditions also take into account the effects of non-stationary sources.[51]

A complete list of current and future planned projects is identified in the Cumulative Projects table of the **PROJECT DESCRIPTION** section of this Decision. For air quality cumulative impacts analysis, we considered projects with stationary sources located up to six miles from the project site and with emissions of more than 5 tpy. Staff and Applicant agreed on the following list of projects within the six-mile radius.[52]

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[47] Ex. 300, p. 4.1-34.

[48] Cal. Code Regs., tit. 14, §§ 15130, 15355.

[49] Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, §§ 15064(h), 15065I, 15130, and 15355; Ex. 300, pp. 4.1-35 – 4.1-40.

[50] Ex. 300, pp. 4.1-35 – 4.1-40.

[51] Ex. 300, p. 4.1-41.

[52] Ex. 85; Ex. 300, p. 4.1-41.

Air Quality Table 9
SERC Cumulative Inventory Sources and Emissions (tons per year)

SCAQMD ID#	Facility Name	CO	NOx	SO2	PM10/PM2.5
132343	SPECTRUM PAINT & POWDER,	5.00	11.00	0.00	3.00
121872	DAE SHIN USA INC /JAE WEON	28.00	17.00	0.00	12.00
156564	INTERNATIONAL PAPER - BUENA	0.00	0.00	0.00	5.00
3254	AMERIPEC INC	83.00	13.00	0.00	6.00
143588	NEW CINGULAR WIRELESS PCS,	4.00	9.00	0.00	0.00
173931	DAMAC PRODUCTS, LLC	3.00	4.00	0.00	7.00
24711	ANAHEIM CITY, CONVENTION CTR	22.00	25.00	0.00	3.00
51475	SO CAL EDISON CO, Barre peaking	5.15	3.99	0.21	3.52
35103	UCI MEDICAL CENTER	90.02	37.92	1.00	16.09
16399	LA CO., SANITATION DIST NO. 2	17.00	10.00	0.00	2.00
140961	GKN AEROSPACE	21.00	10.00	0.00	4.00
125074	US FOODSERVICE	1.00	7.00	0.00	0.00
98715	TECHNO COATINGS INC	0.00	0.00	0.00	12.00
15216	CAL AURUM IND	0.00	0.00	0.00	13.00
96552	PRIMA-TEX INDUSTRIES INC	2.00	9.00	0.00	2.00
16660	THE BOEING COMPANY	47.00	33.00	0.00	10.40

Source: Ex. 300, p. 4.1-42.

The cumulative air quality impacts analysis results are included in **Air Quality Table 10**, with values in bold means they exceed the standard. The modeled impacts are combined with background concentrations to determine the total predicted impacts. As shown in **Air Quality Table 10**, the impacts from CO and SO_2 emissions in the SERC cumulative analysis are not expected to cause or contribute to a violation of any AAQS and are therefore considered to be less than significant.[53]

As shown in **Air Quality Table 10**, the NO_2, PM10, and PM2.5 emissions from the modeled cumulative sources will cause or contribute to the violation of the most stringent AAQS. A culpability analysis was performed by the Applicant for those receptors with modeled exceedances to determine the maximum SERC-only impacts at those locations. The modeled results are shown in **Air Quality Table 11**. The maximum pollutant concentrations due to the SERC emissions at the receptors with modeled exceedances are negligible compared to those from the total cumulative sources. Therefore, the modeled exceedances are either due to the high background concentrations or other cumulative inventory sources. Staff testified that the SERC would not be expected to cause or significantly contribute to any of those modeled exceedances.[54] See the **GREENHOUSE GASES** section of this Decision for more detailed discussion of how the SERC will cause a net reduction of cumulative impacts.

[53] Ex. 300, p. 4.1-43.
[54] Ex. 85; Ex. 300, p. 4.1-43.

Air Quality Table 10
SERC Maximum Cumulative Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total	Limiting Standard	Percent of Standard
PM10	24-hour	45.9	**85**	**130.9**	50	262
	Annual	**24.7**	**26.8**	**51.5**	20	258
PM2.5	24-hour [a]	33.8	34.4	**68.2**	35	195
	Annual	**24.7**	10.5	**35.2**	12	293
CO	1-hour	735.4	3,565	4300.4	23,000	19
	8-hour	408.0	2,444	2852	10,000	29
NO_2 [b]	State 1-hour	**309.8**	**141**	**450.8**	339	133
	Federal 1-hour [c]	**170.4**	**112.8**	**283.2**	188	151
	Annual	**58.1**	**28.2**	**86.3**	57	151
SO_2	State 1-hour	8.2	23.0	31.2	655	5
	Federal 1-hour [d]	8.2	10.5	18.7	196	10
	24-hour	2.9	3.7	6.6	105	6

Source: Ex. 300, p. 4.1-44.

Note:

[a] Total predicted concentration for the federal 24-hour PM2.5 standard is the 5- year average of 98th percentile 24-hour modeled concentration combined with the 3-year average of 98th percentile background concentrations.

[b] The maximum 1-hour and annual NO_2 concentrations include 100 percent conversion of NOx emissions to NO_2.

[c] Total predicted concentration for the federal 1-hour NO_2 standard is the 5- year average of 98th percentile 1-hour modeled concentration combined with the 3-year average of 98th percentile background concentrations.

[d] Total predicted concentration for the federal 1-hour SO_2 standard is the maximum modeled concentration combined with the 3-year average of 99th percentile background concentrations.

Air Quality Table 11
SERC, Impacts at Receptors with Modeled Exceedances (µg/m3)

Pollutant	Averaging Time	Molded Project - Only Impacts	Modeled Cumulative Impacts
PM10	24 hour	0.48	45.9
	Annual	0.02	24.7
PM2.5	24 hour	0.054	33.8
	Annual	0.02	24.7
CO	1 hour	--	735.4
	8 hour	--	408.0
NO_2	State 1 hour	0.059	309.8
	Federal 1 hour	0.225	170.4
	Annual	0.002	58.1
SO_2	State 1 hour	--	8.2
	Federal 1 hour [d]	--	8.2
	24 hour	--	2.9

Source: Ex. 300, p. 4.1-45.

We find that the evidence adequately addresses potential cumulative air quality impacts and with the imposition and implementation of the SCAQMD conditions, as well as Conditions of Certification **AQ-SC-1** through **AQ-SC-7**, the SERC's contribution will not be cumulatively considerable.

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

The following federal, state, and local LORS and policies pertain to the control of criteria pollutant emissions and the mitigation of air quality impacts. Discussion of whether the SERC complies with the LORS is presented in **Air Quality Table 12**.

The SCAQMD issued its Final Determination of Compliance for the SERC project on May 2, 2018.[55] The SCAQMD determined the SERC project would comply with all applicable SCAQMD LORS.[56]

[55] Ex. 301.
[56] 8/2/18 RT 20:7-11.

Air Quality Table 12
Laws, Ordinances, Regulations, and Standards[57]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
Federal	**United States Environmental Protection Agency**	
Title 40 Code of Federal Regulations (CFR) Part 50 (National Primary and Secondary Ambient Air Quality Standards)	Defines levels of air quality that are necessary to protect public health.	**Compliant.** The SERC will not cause a violation of any of the criteria attainment pollutants during normal operations (including startup and shutdown periods). Nonattainment pollutant emissions will be mitigated consistent with SCAQMD's State Implementation Plan approved New Source Review (NSR) program.
Title 40 CFR Part 51 (Requirements for Preparation Adoption and Submittal of Implementation Plans)	Requires NSR facility permitting for construction or modification of specified stationary sources. NSR applies to sources of designated nonattainment pollutants. This requirement is addressed through SCAQMD Regulation XIII.	**Compliant.** A Permit to Construct and Permit to Operate will be obtained by the project owner.
Title 40 CFR Part 52 (Approval and Promulgation of Implementation Plans)	Prevention of Significant Deterioration (PSD)–Establishes requirements for attainment emissions. PSD requirements apply on a pollutant specific basis for major stationary sources.	**Compliant.** The PSD threshold limit for attainment pollutants applicable to SERC is 250 tpy. as SERC is a simple cycle power plant. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plant wide applicability limits. The SERC is not subject to PSD review for NOx, PM10, SOx, and CO because the potential to emit for these attainment pollutants do not exceed the applicability thresholds of 250 tpy. Therefore, SERC is not subject to PSD requirements for GHG either, regardless of the GHG potential emissions.
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.	**Compliant.** Compliance is expected based on the FDOC.
Title 40 CFR Part 60, Subpart KKKK (Standards of	Establishes New Source Performance Standards for new combustion turbines. For new combustion turbines with a rated heat	**Compliant.** SERC turbines will meet the Subpart KKKK requirements with the use of dry-low

[57] Ex. 300, pp. 4.1-3 – 4.1-7.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
Performance for Stationary Combustion Turbines)	input greater than 50 MMBtu/hr and less than or equal to 850 MMBtu/hr NOx emissions are limited to 25 ppm at 15 percent oxygen (O_2) and fuel sulfur limit of 0.060 pounds (lbs) of SOx per MMBtu heat input.	NOx and SCR systems limiting NOx emissions to 2.5 ppm. The SERC will be limited to pipeline quality natural gas as fuel to meet SO_2 emission requirements.
Title 40 CFR Part 60, Subpart TTTT (Standards of Performance for Greenhouse Gas Emissions for electrical Generating Units)	Establishes standards of performance for CO_2. Non-base load electric generating units are subject to a heat input limit of 120 lbs CO_2/MMBtu.	**Compliant.** Compliance with this standard can be demonstrated by the exclusive use of natural gas as fuel.
Title 40 CFR Part 63 (National Emission Standards for Hazardous Air Pollutants)	Establishes National Emission Standards for Hazardous Air Pollutants (NESHAPS).	**Compliant.** The FDOC demonstrates that the facility total HAP emissions will be below the 25 tpy total or 10 tons per HAP major source threshold. The facility will not be subject to the requirements of this subpart. In addition the facility is not proposing to permit any diesel fired emergency equipment and therefore will not be subject to Subpart ZZZZ requirements.
Title 40 CFR Part 64 (Compliance Assurance Monitoring)	Establishes monitoring requirements for emission control systems. The Compliance Assurance Monitoring (CAM) rule applies to emission units with uncontrolled potential to emit levels greater than applicable major source thresholds.	**Compliant.** The SERC will not be a major source. Therefore, CAM is not applicable.
Title 40 CFR Part 72 (Acid Rain Program)	Electrical generating units greater than 25 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 SCAQMD with U.S. EPA oversight.	**Compliant.** The SERC will measure and record SO_2 emissions by using the applicable procedures specified in appendix D to Part 75 for estimating hourly SO_2 mass emissions, pursuant to §75.11(d)(2). The SERC will use the NOx CEMS which complies with the applicable requirements of §75.10 for general operating requirements.
State	**California Air Resources Board and Energy Commission**	
H&SC §44300-44384	Requires preparation and biennial updating of facility emission inventory of hazardous substances; health risk assessments.	**Compliant.** The SCAQMD requires participation in a district level inventory and reporting program.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
(Air Toxic "Hot Spots" Information and Assessment)		
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.	**Compliant.** Condition of certification **AQ-SC5** requires that all off-road vehicles with compression ignition engines shall comply with the ARB's Regulation for In-Use Off-Road Diesel Fleets.
Title 17 CCR, Subchapter 10 (Climate Change)	Establishes requirements for mandatory greenhouse gas reporting, verification and other requirements pursuant to cap and trade regulations.	**Compliant.** The SERC will be subject to mandatory reporting of GHG emissions per ARB greenhouse gas regulations.
Local	**South Coast Air Quality Management District**	
Regulation II – Permits	Sets forth the regulatory framework of the application for issuance of construction and operation permits for new, altered and existing equipment. **Rule 202 –** Temporary Permit to Operate. A person shall notify the Executive Officer before operating or using equipment granted a permit to construct. Upon such notification, the permit to construct shall serve as a temporary permit for operation of the equipment until the permit to operate is granted or denied. **Rule 205** – Expiration of Permit to Construct. Establishes that a SCAQMD permit to construct expires one year from the date of issuance unless a time extension has been approved in writing by the SCAQMD Executive Officer. **Rule 212 –** Standards for Approving Permits and Issuing Public Notice. Outlines specific criteria for approving permits and issuing public notice. **Rule 218 –** Continuous Emission Monitoring. Requires specified facilities to install and maintain stack monitoring systems.	**Compliant.** Rules 202 and 205 requirements are set forth in condition 1.b in PDOC Section E: Administrative Conditions of the facility permit and condition E193.2. Condition of Certification **AQ-E2** includes these requirements. The SERC is not subject to Rule 212(c)(1) and Rule 212(c)(3) public notice requirements. The public notice is required under Rule 212(c)(2). SCAQMD will prepare the public notice which will contain sufficient information to fully describe the project. The SERC will be required to install and maintain stack monitoring systems by permit condition.
Regulation IV – Prohibitions	Sets forth the restrictions for visible emissions, odor, nuisance, fugitive dust, various air emissions, and fuel contaminants. This regulation also specifies	**Compliant.** SERC gas turbines will be fired exclusively with pipeline quality natural gas and subject to BACT requirements. Visible

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
	additional performance standards for specific emission units. **Rule 401 –** Visible Emissions. Establishes limits on visible emissions from stationary sources. **Rule 402 –** Nuisance. Prohibits the discharge of air contaminants or other material which could cause injury, detriment, nuisance or annoyance to the public or could damage business or property. **Rule 403 –** Fugitive Dust. Establishes requirements for controlling man-made fugitive dust. The provisions apply to any activity of man-made condition capable of generating fugitive dust. **Rule 407 –** Liquid and Gaseous Contaminants. Limits emissions of CO and sulfur compounds calculated as sulfur dioxide (SO_2) from stationary sources. **Rule 409 –** Combustion Contaminants. Limits total particulate emissions on a density basis. **Rule 431.1 –** Sulfur Content of Gaseous Fuels. Limits sulfur content in gaseous fuels to reduce SOx emissions. **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 dry standard cubic feet (gr/dscf) calculated at 3 percent O_2 over 15 consecutive minutes.	emissions are not expected and compliance with Rule 401 is expected. Nuisance problems are not expected under normal operating conditions of the gas turbines and other equipment. Compliance with Rule 402 is anticipated. Fugitive dust is not expected from the gas turbines during project operations. During the project construction, Conditions of Certification **AQ-SC2**, **AQ-SC3** and **AQ-SC4** ensure compliance with Rule 403. Compliance with the CO limit of Rule 407 is expected based on BACT CO emission limit of 4 ppmv at 15 percent oxygen. The SO_2 limit does not apply as the gas turbines will be fired by natural gas. The FDOC demonstrated that the PM loading will be 0.012 grains/dscf for SERC turbines, which complies with the 0.1 grains/dscf calculated to 12 percent CO2 in Rule 409. The use of commercial grade natural gas ensures compliance with Rule 431.1. PM10 emissions are 0.004 gr/dscf for both SERC turbines, which complies with Rule 475.
Regulation XI: Source Specific Standards	Establishes requirements for specific source categories. **Rule 1134 –** Emissions of Oxides of Nitrogen from Stationary Gas Turbines. Establishes NOx limits and monitoring and testing requirements for existing stationary gas turbines.	**Compliant.** SERC turbines are new installations and are not subject to Rule 1134. SERC turbines do not fall within the meaning of electric power generating system defined in Rule 1135, therefore, this rule is not applicable to SERC.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
	Rule 1135 – Emissions of Oxides of Nitrogen from Electric Power Generating Systems. Establishes NOx limits and monitoring and testing requirements for applicable electric power generating systems.	
Regulation XIII: New Source Review	Establishes the pre-construction review requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards and that future economic growth in the SCAQMD is not unnecessarily restricted. **Rule 1303 –** Requirements. Establishes Best Available Control Technology (BACT), modeling and offset requirements. **Rule 1304/1304.1 –** Exemption. Establishes modeling and offset exemptions for specific categories including electric utility steam boiler replacements. A fee is established for projects utilizing the exemption. **Rule 1313 –** Permits to Operate. Established requirements for BACT and monthly maximum emissions. **Rule 1325 –** Federal PM2.5 New Source Review Program. Outlines requirements for PM2.5 for any new major polluting facility or major modification to a major polluting facility located in areas designated as nonattainment for PM2.5. Establishes the use of lowest achievable emission rate, offsets, certification of compliance with emission limits and alternative analysis for applicable projects.	**Compliant.** The SERC is not a major polluting facility for any criteria pollutant. Thus, Rule 1303(a)(1) requires BACT for a minor (non-major polluting) facility for NOx, PM10/PM2.5, SOx, VOC, and ammonia. A complete analysis was performed as required by Rule 1303(b)(1). The modeling demonstrates that the SERC will not cause a violation, or make significantly worse an existing violation of any AAQS. As a minor polluting facility, SCAQMD Rule 1304(d)(1) exemption applies to SERC. Thus Rule 1303(b)(2) – Offsets is not applicable.
Regulation XVII: Prevention of Significant Deterioration	Establishes requirements for preconstruction review to ensure that the air quality in attainment does not significantly deteriorate and maintains a margin for future growth. Requirements for Prevention of Significant Deterioration (PSD) review include use of BACT, modeling, and impact analysis. SCAQMD has partial delegation of PSD authority from the U.S. EPA depending on the calculation methodology and plant wide applicability limits.	**Compliant.** The SERC is not subject to PSD review for NOx, PM10, SOx, and CO because the potentials to emit for these attainment pollutants do not exceed the applicability thresholds of 250 tpy.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSION
	Rule 1701, 1702, 1706 –Establishes applicability requirements for PSD. **Rule 1714 –** Prevention of Significant Deterioration for Greenhouse Gases. Establishes requirements for the review of GHGs.	
Regulation XX: Regional Clean Air Incentives Market (RECLAIM)	RECLAIM is designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions. **Rule 2001 –** lists the criterial for inclusion in RECLAIM.	**Compliant.** The SERC has requested a 4 tpy annual NOx limit to stay out of RECLAIM. SCAQMD is also phasing out the RECLAIM program.
Regulation XXX: Title V Permits	The Title V federal program is the air pollution control permit system required by the Clean Air Act as amended in 1990. Regulation XXX defines the permit application and issuance as well as compliance requirements associated with the program. Any new or modified major source which qualifies as a Title V facility must obtain a Title V permit prior to construction, operation or modification of that source.	**Compliant.** The SERC is a new facility for which an initial Title V facility permit is required. A proposed Title V permit incorporating permit revisions will be submitted to U.S. EPA for a 45-day review. All public participation procedures are required to be followed prior to the issuance of the permit.

Based on the evidence, we find that construction and operation of the SERC project will comply with all applicable LORS regarding air quality impacts.

AGENCY AND PUBLIC COMMENT

We have received no comments relating to the topic of Air Quality.

FINDINGS OF FACT

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

1. The Stanton Energy Reliability Center project is located in the South Coast Air Basin and is under the jurisdiction of the South Coast Air Quality Management District.
2. The South Coast Air Quality Management District released its Final Determination of Compliance on May 2, 2018, stating that the project will comply with applicable

South Coast Air Quality Management District rules, which incorporate state and federal requirements.

3. The Stanton Energy Reliability Center project area is designated “nonattainment” for the federal and state eight-hour ozone and PM2.5 standards, the state PM10 and one-hour ozone ambient air quality standards, and the federal lead standards.

4. Construction impacts would contribute to violations of the ozone, PM10, and PM2.5 ambient air quality standards and cause new exceedances of state 24-hour standards if left unmitigated.

5. The Stanton Energy Reliability Center will not exceed the Rule 212(c)(2) daily maximum or create significant impacts based on the ambient lead standards.

6. The Stanton Energy Reliability Center’s vehicle/equipment diesel exhaust and fugitive dust generated during construction would exceed daily significance thresholds for ozone, PM10, and PM2.5, and constitute potentially significant impacts under the California Environmental Quality Act if left unmitigated.

7. The mitigation measures contained in Conditions of Certification **AQ-SC1** through **AQ-SC7** will reduce the Stanton Energy Reliability Center’s construction-related air quality impacts, including ozone, PM10, and PM2.5, to insignificant levels under the California Environmental Quality Act.

8. The Stanton Energy Reliability Center’s maximum expected potential to emit emissions for NOx, VOC, PM10, and SOx for the two turbines are below SCAQMD’s threshold for requiring emission reduction credit offsets based on Rule 1304 (d)(1)(A), Table A.

9. Because the state is in attainment for carbon monoxide and it is not a precursor pollutant to any nonattainment pollutant, no emission reduction credit offsets are required from the Stanton Energy Reliability Center.

10. The South Coast Air Quality Management District determined that the Stanton Energy Reliability Center is exempt from providing emission offsets; however, the South Coast Air Quality Management District will provide offsets for the project from its internal priority reserve account.

11. Application of Best Available Control Technology and other measures specified in the conditions of certification will reduce potential air quality impacts from the operation of the Stanton Energy Reliability Center to insignificant levels.

12. The Stanton Energy Reliability Center will neither cause new violations of any CO, NO2, or SO2 ambient air quality standard nor contribute to existing violations for these pollutants.

13. The direct CO, NO2, and SO2 impacts of the Stanton Energy Reliability Center are less than significant.

14. Although the Stanton Energy Reliability Center's NOx and VOC emissions will contribute to existing violations of state and federal ozone ambient air quality standards, offsets from the South Coast Air Quality Management District's internal offset bank will mitigate the pollutant impact to less than a significant level.

15. Although the PM10 emissions and the PM10 precursor emissions from the Stanton Energy Reliability Center will contribute to the existing violations of PM10 ambient air quality standards, the South Coast Air Quality Management District will offset the PM10 emissions from its internal bank to mitigate the pollutant impacts of the combustion gas turbines to a less than significant level.

16. SOx emissions from the Stanton Energy Reliability Center are considered precursor emissions to PM10/PM2.5 and could contribute to the existing violations of PM10/PM2.5 ambient air quality standards.

17. SOx offsets from South Coast Air Quality Management District's internal offset bank will mitigate the pollutant impacts to a less than significant level.

18. The record contains an adequate analysis of the Stanton Energy Reliability Center's potential contributions to cumulative air quality impacts.

19. The Stanton Energy Reliability Center's project-related air emissions will not be cumulatively considerable.

CONCLUSIONS OF LAW

1. Implementation of the mitigation measures described in the record and contained in the conditions of certification set forth in **Appendix A** of this Decision, ensures that the Stanton Energy Reliability Center will comply with all applicable laws, ordinances, regulations, and standards relating to air quality.

2. Implementation of the mitigation measures described in the record and contained in the conditions of certification ensures that the Stanton Energy Reliability Center will not result in significant direct, indirect, or cumulative air quality impacts.

C. PUBLIC HEALTH

INTRODUCTION

This section supplements the previous discussion on air quality and considers the potential public health effects from emissions of toxic air contaminants (TACs) from the Stanton Energy Reliability Center (SERC). TACs emitted from the natural gas-fired combustion turbine generators like the SERC include ammonia, acetaldehyde, acrolein, benzene, 1,3-butadiene, ethylbenzene, formaldehyde, hexane, naphthalene, polycyclic aromatic hydrocarbons (PAHs), propylene, propylene oxide, toluene, and xylene.[1] The analysis also reviews whether such emissions will result in significant public health impacts or violate applicable federal, state, and local laws, ordinances, regulations, or standards (LORS) related to public health protection.[2]

Evidence on the topic of Public Health is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 8, 11, 19, 31, 42, 45, 46, 54, 55, 56, 60, 61, 62, 63, 71, 81, 84, 92, 100, 300, 301, 302, and 307.[3]

SETTING AND PROJECT DESCRIPTION

The SERC site is located in the City of Stanton, Orange County, California, within the South Coast Air Basin and the South Coast Air Quality Management District (SCAQMD). The climate of the South Coast Air Basin is strongly influenced by the local terrain and geography. The basin is a coastal plain with connecting broad valleys and low hills, bounded by the Pacific Ocean on the west, and relatively high mountains forming the north, south, and east perimeters. The climate is mild, tempered by cool sea breezes and is dominated by the semi-permanent high pressure of the eastern Pacific. Prevailing winds at the SERC site are mostly from the southwest, and partially from the northeast during October through March. The

[1] Ex. 300, p. 4.8-17.

[2] 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**. (Ex. 300, p. 4.8-1.)

[3] 8/2/18 RT pp. 29:20 – 30:14.

AIR QUALITY section of this Decision provides a more detailed description of meteorological data for the area.[4]

Sensitive receptors, such as infants, the aged, and people with specific illnesses or diseases, are the subpopulations which are more sensitive to the effects of toxic substance exposure. The application for certification contains a detailed list of sensitive receptors for the primary impact area. This is also the complete list of sensitive receptors analyzed in the health risk assessment (HRA). The nearest sensitive receptor to the project site is Robert M. Pyles Elementary School located approximately 0.32 miles (1,690 feet) from the SERC site**.** According to Staff testimony, where a school is greater than 1,000 feet from the project site, SCAQMD would not require risk notifications. Residences and workers are not technically defined as "sensitive receptors" by the Office of Environmental Health Hazard Assessment (OEHHA)**.**[5]

For more information on the site and its related project description, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The construction and operation of the SERC will result in routine emissions of TACs, categorized as noncriteria pollutants (see **Public Health Table 1**) for which no ambient air quality standards have been established. In the absence of standards, state and federal regulatory agencies have developed health risk assessment procedures to evaluate potential health effects from exposure to these TACs.[6]

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the SERC could emit into the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;

[4] Ex. 300, pp. 4.8-4 – 4.8-5.
[5] Ex. 300, p. 4.8-4
[6] Ex. 300, pp. 4.8-7 – 4.8-8.

- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal (skin) contact; and
- Characterize potential health risks by comparing worst-case exposure to the project's emissions with the scientific safety standards based on known health effects.[7]

Public Health Table 1
Main Pollutants Emitted from the Proposed Project

Criteria Pollutants	Non-criteria Pollutants
Carbon monoxide (CO)	Acetaldehyde
Oxides of nitrogen (NO_x)	Acrolein
Particulate matter (PM10 and PM2.5)	Ammonia
Oxides of sulfur (SO_2)	Benzene
Volatile Organic Compounds (VOCs)	1,3-Butadiene
	Ethyl Benzene
	Formaldehyde
	Hexane
	Naphthalene
	Polycyclic Aromatic Hydrocarbons (PAHs)
	Propylene Oxide
	Toluene
	Xylene

(Ex. 300 p. 4.8-16).

[7] Ex. 300, pp. 4.8-7 – 4.8-8.

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

- Using the highest levels of pollutants that could be emitted from the power plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using air quality computer modeling which predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously over a 70-year lifetime; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses).[8]

The risk assessment for the SERC addresses three categories of potential health impacts: acute (short-term) effects; chronic (long-term) noncancer effects; and cancer risk (also long-term). Acute health effects result from short-term (one hour) exposure to relatively high concentrations of pollutants; these effects are temporary. Chronic noncancer health effects occur as a result of long-term exposure (8-30 years)[9] to lower concentrations of pollutants. For carcinogenic substances, the health assessment considers the total risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over a 70-year lifetime.[10]

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[8] Ex. 300, pp. 4.8-8 – 4.8-9.

[9] In 2015 Guidance, OEHHA recommends that an exposure duration (residency time) of 30 years be used to estimate individual cancer risk for the maximally exposed individual resident (MEIR). In addition, for the maximally exposed individual worker (MEIW), OEHHA now recommends using an exposure duration of 25 years to estimate individual cancer risk for off-site workers. (Ex. 300 4.8-9.) Fetuses, infants and children are more susceptible than adults to TACs. Therefore, higher weighting factors are assigned to these life stages. (Ex. 300, p. 4.8-9.)

[10] Ex. 300, p. 4.8-10.

The analysis for noncancer health effects compares the maximum project contaminant levels to safe levels called Reference Exposure Levels (RELs). These exposure levels are designed to protect the most sensitive individuals in the population such as infants, the elderly, and people suffering from illnesses or diseases which make them more susceptible to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effects reported in medical and toxicological literature, and include margins of safety. Energy Commission staff (Staff) assessed the noncancer health effects by calculating a hazard index, which is a ratio obtained by comparing exposure from facility emissions to the REL for that pollutant. A "hazard index" of less than 1.0 signifies that the worst-case exposure is less than the safe exposure level and, thus, there are not likely to be adverse noncancer health effects.[11]

The assessment also considers risk from all cancer-causing chemicals from project emissions. The calculated risk is not meant to predict the actual expected incidence of cancer, but is rather a theoretical estimate based on worst-case assumptions. Cancer risk is expressed in chances per million and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. The State of California has determined that "the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure."[12] This risk level is equivalent to a cancer risk of 10 in one million, or $10x10^{-6}$ The conservative nature of the screening assumptions means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated.[13]

If the screening analysis predicts no significant risks, then no further analysis is required. However, if the predicted risk is significant, then further analysis using more realistic, site-specific assumptions is performed to obtain a more accurate assessment of potential health risks. If the site-specific analysis confirms that the risk exceeds the significance level, then appropriate mitigation measures are necessary to reduce the risk to less than significant. If a refined analysis identifies

[11] Ex. 300, p. 4.8-11.

[12] Cal. Code Regs., tit. 22, § 12703(b).

[13] Ex. 300, p. 4.8-12.

a cancer risk that exceeds the significance level after all risk reduction measures have been considered, Staff would not recommend approval of the project.[14]

Impact Assessment and Mitigation

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 **AIR QUALITY** section of this Decision contains a more detailed description of meteorological data for the area.[15]

By examining average toxic concentration levels from representative air monitoring sites, together with cancer risk factors specific to each carcinogenic contaminant, a lifetime cancer risk can be calculated to provide a background risk level for inhalation of ambient air.[16]

From 2008 to 2012, the cancer incidence rates in California were 48.56 in 1 million for males and 39.48 for females. The cancer death rates for California during that same time period were 18.34 in 1 million for males and 13.53 in 1 million for females.[17]

The evidence shows that the trend of cancer death rates in Orange County fell between 2008 and 2012. These rates (14.63 in 1 million, combined male/female) were somewhat lower than the statewide average of 15.51 in 1 million. According to the County Health Status Profiles 2017, the death rate due to all cancers from 2013 to 2015, is 13.5 in 1 million for Orange County, slightly lower than the cancer death rate (14.38 in 1 million) for California.[18]

The asthma diagnosis rates in Orange County are lower than the average rates in California for both adults (age 18 and over) and children (ages 1-17). The percentage of adults diagnosed with asthma was reported as 6.0 percent in 2005-2007, compared to 7.7 percent for the general California population. Rates for

[14] Ex. 300, p. 4.8-12.

[15] Ex. 300, pp. 4.8-4 – 4.8-5.

[16] Ex. 300, p. 4.8-5.

[17] Ex. 300, p. 4.8-5.

[18] Ex. 300, p. 4.8-6.

children for the same time period were reported as 9.5 percent in Orange County compared to 10.1 percent for the state in general.[19]

The Multiple Air Toxics Exposure Study (MATES) is a series of monitoring and evaluation studies conducted in the South Coast Air Basin (Basin). The studies focus on the carcinogenic risk from exposure to air toxics but do not estimate mortality or other health effects from particulate exposures. The results of the MATES study show a continuing downward trend in TACs. The comparison of county-wide, population-weighted risk in the final report of MATES shows TAC reductions that occurred in Los Angeles County, with values decreasing from 951 per million in 2005 to 415 per million in 2012. South Coast Air Basin data follows the same trend, with corresponding TACs decreasing from 853 per million in 2005 to 367 per million in 2012. The reducing trend in air toxic levels and risks shows the improvement in air toxics emissions and exposures.[20]

Construction Impacts

Construction of the SERC from site preparation and grading to commercial operation is expected to take place from November 2018 to December 2019 (approximately 14 months total). The actual construction of the facility will take approximately 10 months (followed by two months of plant commissioning and two months for completion of the electric interconnection facilities by Southern California Edison).[21] The potential construction risks are normally associated with exposure to fugitive dust and combustion emissions (i.e., diesel exhaust).[22]

Fugitive dust is defined as dust particles that are introduced into the air through certain activities such as soil cultivation, vehicles operating on open fields, or dirt roadways. Fugitive dust emissions during construction of the SERC project could occur from:

- dust entrained during site preparation and grading/excavation at the construction site;
- dust entrained during on-site movement of construction vehicles on unpaved surfaces; and
- wind erosion of areas disturbed during construction activities.

[19] Ex. 300, p. 4.8-6.

[20] Ex. 300, pp. 4.8-6 – 4.8-7.

[21] Ex. 307, p., 1.

[22] Ex. 300, p. 4.8-13.

The effects of fugitive dust on public health are covered in the **AIR QUALITY** section of this Decision which includes mitigation measures in Conditions of Certification **AQ-SC3** (Construction Fugitive Dust Control) and **AQ-SC4** (Dust Plume Response Requirement) to prevent fugitive dust plumes from leaving the project boundary. As long as the dust plumes are kept from leaving the project site, there will be no significant concern of fugitive dust adversely affecting public health.[23]

Emissions of combustion byproducts during construction would result from:

- exhaust from diesel construction equipment used for site preparation, grading, excavation, trenching, and construction of onsite structures;
- exhaust from water trucks used to control construction dust emissions;
- exhaust from portable welding machines, small generators, and compressors;
- exhaust from diesel trucks used to transport workers and deliver concrete, fuel, and construction supplies to construction areas; and
- exhaust from vehicles used by construction workers to commute to and from the project areas.[24]

The primary air toxic pollutant of concern from construction activities is diesel particulate matter. Diesel exhaust is a complex mixture of thousands of gases and fine particles and contains over 40 substances listed by the U.S. Environmental Protection Agency as hazardous air pollutants and by the California Air Resources Board as TACs. The diesel particulate matter is primarily composed of aggregates of spherical carbon particles coated with organic and inorganic substances. Diesel exhaust deserves particular attention mainly because of its ability to induce serious noncancer effects and its status as a likely human carcinogen.[25]

A screening HRA for diesel particulate matter was conducted to assess the potential impacts associated with diesel emissions during the construction activities at the SERC.

The HRA results for the short-term construction activities show the calculated point of maximum impact or PMI is 4.15 in 1 million, which is well below the significant

[23] Ex. 300, p. 4.8-13.
[24] Ex. 300, p. 4.8-13.
[25] Ex. 300, p. 4.8-14.

impact threshold of 10 in 1 million. Therefore, we find that there is no significant cancer health risk from the toxic air emissions from construction activities.[26]

The predicted chronic health index at the PMI is 0.00550, which is also much lower than the significance level of 1.0. This means that there would be no chronic non-cancer impacts expected from construction activities.

Based on the results of the HRA, and considering that the potential exposure to diesel particulate matter will be sporadic and limited in length, we find that impacts associated with the diesel particulate matter from the SERC construction activities will be less than significant.[27]

Condition of Certification **AQ-SC5** (Diesel-Fueled Engine Control) in the **AIR QUALITY** section of this Decision ensures that cancer-related impacts of diesel exhaust emissions for the public and off-site workers are mitigated during construction to a point where they are not considered significant. 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 (SO_2), and nitrogen dioxide (NO_2).[28]

Operation Impacts and Mitigation

The only emission sources of the SERC project will be two General Electric LM6000 PC SPRINT natural gas-fired, simple-cycled combustion turbine generators. There will be no diesel fuel source from this project during operation. 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 and PAHs. Criteria pollutant emissions and impacts are examined in the **AIR QUALITY** section of this Decision.[29]

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. **Public Health Table 2** shows the exposure routes of TACs and how they would contribute to the

[26] Ex. 300, p. 4.8-14.
[27] Ex. 300, p. 4.8-15.
[28] Ex. 300, p. 4.8-15.
[29] Ex. 300, p. 4.8-15.

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.[30]

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

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

Source: (Ex. 300, p. 4.8-17.)

Public Health Table 3 lists the toxicity values used to quantify the cancer and noncancer health risks from the project's combustion-related pollutants. 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.[31]

[30] Ex. 300, p. 4.8-17.

[31] Ex. 300, p. 4.8-18.

Public Health Table 3
Toxicity Values Used to Characterize Health Risks

Toxic Air Contaminant	Inhalation Cancer Potency Factor $(mg/kg\text{-}d)^{-1}$	Chronic Inhalation REL $(\mu g/m^3)$	Acute Inhalation REL $(\mu g/m^3)$
Ammonia	—	200	3,200
Acetaldehyde	0.010	140	470 (1-hr) 300 (8-hr)
Acrolein	—	0.35	2.5 (1-hr) 0.7 (8-hr)
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	—	7,000	—
Naphthalene	0.12	9.0	—
Polycyclic Aromatic Hydrocarbons (PAHs)	3.9	—	—
Propylene	—	3,000	—
Propylene Oxide	0.013	30	3,100
Toluene	—	300	37,000
Xylene	—	700	22,000

(Source: Ex. 300, p. 4.8-18).

The health risk from exposure to each project-related pollutant is assessed using the "worst case" emission rates and impacts. Maximum hourly emissions are used to calculate acute (one-hour) noncancer health effects, while estimates of maximum emissions on an annual basis are used to calculate cancer and chronic (long-term) noncancer health effects.[32]

The most significant result of HRA is the numerical cancer risk for the maximally exposed individual (MEI), which is the individual located at the point of maximum impact (PMI) and risks to the MEI at a residence (MEIR). The cancer risk to the MEI at the PMI is referred to as the Maximum Incremental Cancer Risk (MICR).

[32] Ex. 300, p. 4.8-15.

The PMI for impacts from operation is approximately 0.14 miles northeast from the project boundary. As shown in **Public Health Table 4**, the total worst-case individual cancer risk is 0.0714 in one million at the PMI. The cancer risk value at the PMI is far below the significance level of 10 in 1 million, indicating that no significant adverse cancer risk is expected.[33]

The screening HRA for the project included emissions from all sources and resulted in a maximum chronic Hazard Index (HI) of 0.0000977 and a maximum acute HI of 0.00166. As **Public Health Table 4** shows, both acute and chronic hazard indices are much less than 1.0, indicating that no short- or long-term adverse health effects such as asthma and other respiratory effects are expected.

The MEIR 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. Exposure to off-site nonresident workers or recreational users would be lower with correspondingly lower health risks. Residential risks were presented in terms of MEIR and HI at residential receptors in **Public Health Table 4**. The cancer risk for the MEIR is 0.0531, which is well below the significance level. The maximum resident chronic HI and acute HI are 0.0000727 and 0.00122, respectively. They are both much less than 1.0, indicating that no short- or long-term adverse health effects are expected at these residences.[34]

The cancer risk to potentially exposed nonresidential workers, both project and off-site, was presented in terms of risk to the maximally exposed individual worker (or MEIW at PMI) and is summarized in **Public Health Table 4**. The worker is assumed to be exposed at the work location 8 hours per day instead of 24; 245 days per year instead of 365; and for 25 years instead of 30 years.

The cancer risk for workers at MEIW (i.e. 0.0407 in 1 million) is well below the significance level. The maximum worker chronic HI and acute HI are 0.0000557 and 0.00144, respectively. They are both much less than 1.0, indicating that no short- or long-term adverse health effects are expected among exposed workers.[35]

Several sensitive receptors are located close to the SERC site. They include:

- The nearest schools which are the Robert M. Pyles Elementary School and the Stepping Stones Learning Center. The elementary school is located approximately 0.3 miles to the north of the project boundary. The highest

[33] Ex. 300, p. 4.8-20.
[34] Ex. 300, p. 4.8-20.
[35] Ex. 300, p. 4.8-21.

cancer risk at this sensitive receptor is 0.022 in one million, the chronic HI is 0.0000301, and the acute HI is 0.00128.

- The Stepping Stones Learning Center is located approximately 0.34 miles northeast of the project boundary. The highest cancer risk at this sensitive receptor is 0.0513 in one million, the chronic HI is 0.0000702, and the acute HI is 0.001.
- The nearest health facility is located approximately 2.42 miles northeast of the project boundary. The highest cancer risk at this sensitive receptor is 0.0216 in one million, the chronic HI is 0.0000295, and the acute HI is 0.00041.
- The nearest daycare is located approximately 0.68 miles southwest of the project boundary. The highest cancer risk at this sensitive receptor is 0.0145 in one million, the chronic HI is 0.0000198, and the acute HI is 0.000863.
- The nearest convalescent home, Blessing Home Care, is located approximately 1.02 miles north of the project boundary. The highest cancer risk at this sensitive receptor is 0.0188 in one million, the chronic HI is 0.0000257, and the acute HI is 0.000617.

All risks are well below their significance levels, meaning that there will be an insignificant risk of asthma and other noncancer health impacts.

As shown in **Public Health Table 4**, all the cancer and noncancer risks from the SERC's operation are below their respective significance levels. Therefore, we find that there is no need for conditions of certification to protect public health during facility operation.[36]

Public Health Table 4
Cancer Risk and Chronic Hazard from SERC Operations

Receptor Location	Cancer Risk (per million)	Chronic HI [d]	Acute HI [d]
PMI [a]	0.0714	0.0000977	0.00166
Residence MEIR [b]	0.0531	0.0000727	0.00122
Worker MEIW [c]	0.0407	0.0000557	0.00144
Sensitive Receptor (Nearest School 1)	0.022	0.0000301	0.00128

[36] Ex. 300, p. 4.8-21.

Sensitive Receptor (Nearest School 2)	0.0513	0.0000702	0.001
Sensitive Receptor (Nearest Health Facility)	0.0216	0.0000295	0.00041
Sensitive Receptor (Nearest Daycare)	0.0145	0.0000198	0.000863
Sensitive Receptor (Nearest Convalescent Home)	0.0188	0.0000257	0.000617
Significance level	10	1	1
Significant?	No	No	No

Source: 300, p. 4.8-22
[a] PMI = Point of Maximum Impact.
[b] MEIR = MEI of residential receptors. Location of the residence of the highest risk with a 30-year residential scenario.
[c] MEIW = MEI for offsite workers. Occupational exposure patterns assuming standard work schedule, i.e. exposure of eight hours/day, five days/week, 49 weeks/year for 25 years. But the MEIW values in Stanton have not been adjusted for a 25-year exposure due to the insignificance of the 30-year risk values.
[d] HI = Hazard Index

Cancer Burden

Cancer burden is defined as the estimated increase in the occurrence of cancer cases in a population resulting from exposure to carcinogenic air contaminants. It is a hypothetical upper-bound estimate of the additional number of cancer cases that could be associated with toxic air emissions from the SERC project. Cancer burden is calculated as the maximum product of any potential carcinogenic risk greater than 1 in one million, and the number of individuals at that risk level. Therefore, if a predicted derived adjusted cancer risk is greater than 1 in one million, the cancer burden is calculated for each census block receptor. OEHHA requires a 70-year exposure duration to estimate cancer burden or provide an estimate of population-wide risk.

The population-wide risk at PMI was calculated using a 70-year exposure duration, and the result is 0.084 in one million. This risk is lower than the 1 in one million standard. The cancer burden is estimated to be less than one cancer case resulting from exposure to TACs from the SERC operation.[37]

Cumulative Impacts

A project may result in a significant adverse impact where its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the

[37] Ex. 300, p. 4.8-22.

effects of (1) past projects; (2) other current projects; and (3) probable future projects.[38]

The maximum cancer risk and non-cancer hazard index (both acute and chronic) for operations emissions from the SERC project estimated independently by the Applicant, Staff, and the SCAQMD are all below levels of significance. While air quality cumulative impacts could occur with sources within a six-mile radius, cumulative public health impacts are usually not significant unless the emitting sources are within a few blocks of each other. An analysis of the cumulative impacts is typically only required if the proposed facility is generally within less than 0.5-mile of another existing major or large toxics emissions source.[39]

All Metals Processing (8401 Standustrial Street) is located within a 0.5-mile radius of the SERC site. However, it is not a major or large source of hazardous air toxic pollutants. In addition, the SCE Barre Peaker site is located directly east of the SERC site, across Dale Avenue. This facility is a single, simple-cycle turbine peaker facility, which is only allowed to combust 489 mmscf/yr (million standard cubic feet per year) of natural gas. This firing rate is less than the firing rate for one of the SERC turbines and, as such, the air toxics emissions will be significantly less than the SERC facility and not considered a major toxics emissions source.

All other identified facilities are at least 1.5 miles away from the SERC. We find that the proposed SERC, even when combined with these projects, will not contribute to cumulative impacts in the area of public health.[40]

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

The following federal, state, and local LORS pertain to the control of hazardous air contaminants and the mitigation of toxic air impacts. Discussion of whether the SERC complies with the LORS is presented in **Public Health Table 5**.

[38] Cal. Code Regs., tit. 14, § 15130.

[39] Ex. 300, p.4.8-23.

[40] Ex. 300, p. 4.8-23.

Public Health Table 5
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Federal		
Clean Air Act section 112 (Title 42, U.S. Code section 7412)	Addresses emissions of hazardous air pollutants (HAPs). This act requires new sources that emit more than ten tons per year of any specified HAP or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).	**Compliant.** The total combined formaldehyde emission (which is the greatest single HAP emitted from the SERC[41]) from all sources is 0.152 tpy, which is less than 10 tpy. The total combined HAP from all sources is 0.338 tpy, which is less than 25 tpy. Therefore, this subpart is not applicable because the SERC will not be a major source for HAP emissions.
40 Code of Federal Regulations (CFR) Part 63 Subpart YYYY (National Emission Standard for Hazardous Air Pollutants for Stationary Combustion Turbines)	Applies to gas turbines located at major sources of HAP emissions. A major source is defined as a facility with emissions of ten tons per year (tpy) or more of a single HAP or 25 tpy or more of a combination of HAPs based on the potential to emit.	**Compliant.** The total combined formaldehyde emission (which is the greatest single HAP emitted from the SERC[42]) from all sources is 0.152 tpy, which is less than 10 tpy). The total combined HAP from all sources is 0.338 tpy, which is less than 25 tpy. Therefore, this subpart is not applicable because SERC will not be a major source for HAP emissions.
State		
California Health and Safety Code section 25249.5 et seq. (Proposition 65)	Establishes thresholds of exposure to carcinogenic substances above which Proposition 65 exposure warnings are required.	**Compliant.** Please see Significance Criteria in the text above for detailed discussion.
California Health and Safety Code, Article 2, Chapter 6.95, Sections 25531 to 25541; California Code of Regulations Title 19 (Public Safety), Division 2 (Office of Emergency Services), Chapter 4.5 (California Accidental Release Prevention Program)	Requires facilities storing or handling significant amounts of acutely hazardous materials to prepare and submit Risk Management Plans.	**Compliant.** Please see the discussion of Hazardous Materials Handling Program in the **HAZARDOUS MATERIAL MANAGEMENT** section of this Decision.
California Health and Safety Code section 41700	States that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which	**Compliant.** There will be no significant health impacts from the project's toxic air emissions.

[41] Ex. 19, pp. 5.9-2 and 5.9-3.
[42] Ex. 19, pp. 5.9-2 and 5.9-3.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
	cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."	
California Health and Safety Code sections 44300 et seq.	Air Toxics Hot Spots Program requires participation in the inventory and reporting program at the local air pollution control district level.	**Compliant.** According to the South Coast Air Quality Management District (SCAQMD) Final Determination of Compliance (FDOC), this project meets this LORS.
California Health and Safety Code sections 44360 to 44366 (Air Toxics "Hot Spots" Information and Assessment Act—AB 2588)	Require that, based on results of a health risk assessment (HRA) conducted per California Air Resources Board / Office of Environmental Health Hazard Assessment guidelines, toxic contaminants do not exceed acceptable levels.	**Compliant.** The maximum cancer risk and non-cancer hazard index (both acute and chronic) for operations emissions from SERC estimated independently by the Applicant, Staff, and the SCAQMD are all below levels of significance.
Local		
South Coast Air Quality Management District (SCAQMD) Rule 1401 (New Source Review of Toxic Air Contaminants)	Specifies limits for maximum individual cancer risk (MICR), cancer burden, and noncancer acute and chronic hazard index (HI) from new permit units, relocations, or modifications to existing permit units which emit toxic air contaminants (TACs).	**Compliant.** The MICR, cancer burden, and noncancer acute and chronic HI are all below levels of significance.
SCAQMD Rule 212(c)(3) (Permits – Public Notice)	Requires public notification for any new or modified permit unit source if the MICR, based on Rule 1401, exceeds one in 1 million (1×10^{-6}), due to a project's proposed construction, modification, or relocation for facilities with more than one permitted source unless the Applicant can show the total facility-wide MICR is below 10 in 1 million (10×10^{-6}).	**Compliant.** Public notice is not required. The increases in toxic emissions from each turbine will not expose a person to a maximum individual cancer risk that is greater than or equal to one in a million.

Staff's health risk analysis for the SERC found no potentially significant adverse impacts for any receptors, including sensitive receptors. In arriving at this conclusion, Staff testified that its analysis complies with all directives and guidelines from the California Environmental Protection Agency Office of Environmental Health Hazard Assessment and the California Air Resources Board. In addition, Staff's assessment takes into account the most sensitive

individuals in the population. Using extremely conservative (health-protective) exposure and toxicity assumptions, Staff's analysis demonstrates that members of the public potentially exposed to TACs of this project, including sensitive receptors such as the elderly, infants, and people with pre-existing medical conditions, will not experience any acute or chronic significant health risk or any significant cancer risk as a result of that exposure.[43]

The analysis in evidence incorporated every conservative assumption called for by state and federal agencies responsible for establishing methods for analyzing public health impacts. The results of that analysis indicate that there will be no direct or cumulative significant public health impact on any population in the area. The evidentiary record shows that construction and operation of the SERC will comply with all applicable LORS regarding long-term and short-term project impacts in the area of public health.[44]

The evidence further shows that the Applicant, Staff, and the South Coast Air Quality Management District each performed independent screening level risk assessments. Each concluded that no significant public health effects are expected from project construction or operation.[45]

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Public Health.

FINDINGS OF FACT

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

1. Construction and operation of the Stanton Energy Reliability Center will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.
2. Exposure to diesel particulate emissions from Stanton Energy Reliability Center construction equipment is short-term and will not result in long-term carcinogenic or non-carcinogenic health effects.

[43] Ex. 300, p. 4.8-29.

[44] Ex. 300, p. 4.8-30.

[45] Ex. 300, p. 4.8-23.

3. Exposure to Stanton Energy Reliability Center construction-related diesel particulate emissions will be mitigated to the extent feasible by implementing measures to reduce equipment emissions.

4. Exposure to fugitive dust due to excavation and construction activities at the Stanton Energy Reliability Center will be mitigated to insignificant levels by implementing Conditions of Certification **AQ-SC3** and **AQ-SC4** to reduce dust production and dispersal.

5. Emissions of criteria pollutants, as discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels consistent with applicable state and federal standards.

6. A health risk assessment is used to determine if people might be exposed to noncriteria pollutants or toxic air contaminants at unhealthy levels.

7. The standard approach currently used for a health risk assessment involves four steps: 1) hazard identification; 2) exposure assessment; 3) dose-response assessment; and 4) risk characterization.

8. Screening level health risk assessments of the Stanton Energy Reliability Center's potential health effects due to emissions of toxic air contaminants were conducted by the Applicant, Energy Commission staff, and the South Coast Air Quality Management District.

9. The health risk assessments are based on worst-case assumptions using the highest emission factors assuming the worst weather conditions, and calculating effects at the point of maximum impact to the most sensitive receptors so that actual risks are expected to be much lower at any other location.

10. Cumulative impacts from non-criteria (i.e., toxic) pollutants were analyzed in accordance with the provisions of California Environmental Quality Act and are not found to be cumulatively considerable.

11. Operation of the Stanton Energy Reliability Center will not cause a significant health effect.

12. Cumulative public health impacts from noncriteria pollutant emissions can be significant if other emission sources are close enough to the Stanton Energy Reliability Center project that the combined emission plumes would produce a significant cumulative risk where insignificant individual risks currently exist.

13. The evidence does not establish the existence of sources of noncriteria pollutant emissions that were not considered as part of the cumulative public health analysis.

CONCLUSIONS OF LAW

We therefore conclude that:

1. Emissions of noncriteria pollutants from the construction and operation of the Stanton Energy Reliability Center do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. The Stanton Energy Reliability Center will comply with all applicable laws, ordinances, regulations, and standards related to public health.

D. WORKER SAFETY AND FIRE PROTECTION

INTRODUCTION

This section of the Decision focuses on whether the Stanton Energy Reliability Center's (SERC) proposed health and safety plans 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.

Evidence on the topic of Worker Safety and Fire Protection is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 26, 30, 31, 42, 54, 55, 56, 57, 65, 71, 76, 88, 92, 96, 100, and 300.[1]

SETTING AND PROJECT DESCRIPTION

The SERC facility will be located in the city of Stanton within an industrial area that is currently located within the service area of the Orange County Fire Authority (OCFA). There are 72 fire stations within the OCFA's coverage area. The closest station to the SERC site is Station #46 located at 7871 Pacific Street, Stanton, California, approximately one mile away. The response time from the moment a call is made to the point of arrival at the site is approximately five minutes. Station #4 is the next closest station located approximately two miles away at 2736 West Orange Avenue, Anaheim, California, and would have about a 10-minute response time. The Anaheim Fire and Rescue Team, which staffs the Anaheim Station #4, has an automatic mutual aid agreement with the OCFA.

The first responders to a hazardous materials incident would be from OCFA Fire Station #46. If needed, a full hazardous material response would be provided by the OCFA Hazardous Materials Response Team from OCFA Station #79 located at 1320 East Warner Avenue, Santa Ana, California, approximately 18 miles away. The OCFA Hazardous Materials Response Team is capable of handling any hazardous materials-related incident at the proposed facility.[2]

In addition to worker and safety issues associated with the construction and operations of the SERC, the potential exists for worker exposure to contaminated soil during site preparation. The Phase I and II Environmental Site Assessments conducted for the SERC site in 2016 concluded that no hazards or contaminants exist on site that would warrant additional environmental remediation. To address the possibility that soil contamination could be encountered during construction of the SERC, Conditions of Certification **WASTE-2** and **WASTE-3** require a registered professional engineer or geologist to be

[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 300, p.4-15-3.

available during soil excavation and grading to ensure proper handling and disposal of contaminated soil. If any contaminated soil is identified, then the proper personal protective equipment will be provided as needed. See the **WASTE MANAGEMENT** section of this Decision for a more detailed analysis of waste management.[3]

For a general project description, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

Two issues are assessed in **WORKER SAFETY AND FIRE PROTECTION:**

1. The potential for impacts on the safety of workers during site preparation, construction, and operations activities; and
2. Availability of and potential impacts on fire prevention/protection, emergency medical response, and hazardous materials spill response services during site preparation, construction, and operations of the facility.

Worker safety issues are thoroughly addressed by the California Occupational Safety and Health Administration (Cal/OSHA) regulations. If all LORS are followed, workers will be adequately protected. Therefore, to meet the standard for review and determination of significant impacts on workers, the analysis must evaluate whether or not the Applicant will implement all pertinent and relevant Cal/OSHA requirements.[4]

Regarding fire prevention matters, we evaluate the on-site, fire-fighting systems proposed by the Applicant and the time needed for off-site local fire departments to respond to a fire, medical, or hazardous material emergency at the SERC power plant site. The evidence evaluates the local fire department capabilities and response time in each area and determines if they are adequately trained, manned, and equipped to respond to the needs of a power plant. We then determine if the presence of the power plant would cause a significant impact on the local fire department. If so, the Applicant must mitigate this impact by providing increased resources to the fire department.[5]

IMPACT ASSESSMENT AND MITIGATION

Worker Safety

Industrial environments are potentially dangerous during construction and operation. The SERC encompasses construction and operation of a natural gas fired facility. Workers

[3] Ex. 300, p. 4.15-3.
[4] Ex. 300, p. 4.15-3.
[5] Ex. 300, p. 4.15-4.

will be exposed to hazards typical of construction and operation of a gas-fired, simple-cycle facility, including exposure to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and numerous other injuries. They have the potential to be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. Therefore, the SERC must have well-defined policies and procedures, training, and hazard recognition and control to minimize such hazards and to protect workers.[6]

The evidence details the type and content of various plans that must be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. For example, the project owner will develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which must be reviewed and approved by the Compliance Project Manager (CPM) prior to project construction and operation, respectively. A separate "Injury and Illness Prevention Program," a "Personal Protective Equipment Program," an "Emergency Action Plan," a "Fire Protection System Impairment Program," and other general safety procedures, will be prepared for both the construction and operation phases of the project.[7]

We impose Conditions of Certification **WORKER SAFETY-1** and **WORKER SAFETY-2** to ensure that these programmatic measures will be developed and implemented.

The Occupational Safety and Health Administration (OSHA) and Cal/OSHA do not require that an employer hire or provide for a Construction Safety Officer. However, both OSHA and Cal/OSHA standards require employers to monitor worker safety by employing a "competent person" who has knowledge and experience enforcing workplace safety standards, can identify hazards relating to specific project operations, and has authority to take appropriate action. To ensure a safe workplace during power plant construction, we impose Condition of Certification **WORKER SAFETY-3,** which requires the project owner to designate a power plant Construction Safety Supervisor. This individual will coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses.[8]

As discussed above, the hazards associated with the construction industry are well documented. Accidents, fires, and two worker deaths have occurred at Energy Commission-certified power plants due to the failure to recognize and control safety

[6] Ex. 300, p. 4.15-4.
[7] Ex. 300, pp. 4.15-4 – 4.15-9.
[8] Ex. 300, p. 4.15-10.

hazards and the inability to adequately supervise compliance with occupational safety and health regulations.[9] In order to reduce and/or eliminate these hazards, a professional Safety Monitor is needed on site to track compliance with Cal/OSHA regulations and periodically audit safety compliance during construction, commissioning, and the transition to operational status. We impose Condition of Certification **WORKER SAFETY-4,** which requires the appointment and qualification of a Safety Monitor to coordinate and implement the Construction and Operation Safety and Health Programs, as well as investigate any safety-related incidents and emergency responses.

Fire Hazards

Fire Facilities

Construction and operation of the SERC poses the potential for both small fires and major structural fires. Electrical sparks, combustion of natural gas, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard, flammable liquids, explosions, and over-heated equipment, may cause small fires. Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Fires and explosions of natural gas or other flammable gasses or liquids are rare. Compliance with all LORS will be adequate to ensure protection from all fire hazards.[10]

The SERC will rely on both on-site and local fire protection services. In fact, the on-site fire protection system provides the first line of defense for such occurrences. Condition of Certification **WORKER SAFETY-1** requires a Construction Fire Prevention Plan that addresses and provides detailed measures to minimize the likelihood of fires during construction. These measures include the placement of portable fire extinguishers, safety procedures, and training.[11]

Construction

During construction, portable fire extinguishers will be placed throughout the site at appropriate intervals and periodically maintained; safety procedures and training will be implemented according to the guidelines of the Construction Fire Protection and Prevention Program, which will be reviewed and commented on by the OCFA and reviewed and approved by the CPM.[12]

[9] Ex. 300, p. 4.15-10.
[10] Ex. 300, p. 4.15-11.
[11] Ex. 300, p. 4.15-11.
[12] Ex. 300, p. 4.15-11; Ex. 26, pp. 5.16-18.

Operation

During operation, the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable recommended National Fire Protection Association (NFPA) standards (including Standard 850 addressing fire protection at electric generating plants now required under Condition of Certification **WORKER SAFETY-7**), and all Cal/OSHA requirements. Fire suppression elements will include both fixed and portable fire extinguishing systems. The fire water supply will be connected to two municipal sources supplied by the Golden State Water Company with one from Pacific Street and one from Dale Avenue. A carbon dioxide or dry chemical fire protection system will be provided for the combustion turbine generators and accessory equipment compartments. Portable extinguishers and fire hydrants will be located throughout the facility at code-approved intervals. The fire protection system will have fire detection sensors and monitoring equipment that will trigger alarms and automatically actuate the suppression systems. These systems are standard requirements by the NFPA and the Uniform Fire Code, and Staff testified that they will ensure adequate fire protection.[13]

Battery Storage System

The SERC project will install an energy storage system rated at 20 MW using lithium-ion batteries. The lithium-ion batteries will be housed in two separate outdoor enclosures. The batteries will be configured as modules of multiple packages, with each package containing many individual lithium-ion battery cells plus battery protection circuits in a sealed container. The batteries' enclosures will be kept away from any heat sources and make use of a FM200 or equivalent fire suppression system. Each battery will have its temperature monitored by a battery indication and control system (BICS). The BICS will continually monitor all temperatures and determine the level of fire prevention response, if any, needed. If any temperature reaches an unacceptable level, portions of, or the entire, battery system could be shut down. The BICS will also provide an alarm and operator notification for a temperature that rises above the correct set point.[14]

The principal hazard associated with lithium-ion batteries is fire, which can occur if a battery casing is opened, punctured, or crushed. Fire may also result if a battery cell is short circuited or overheated. Such a fire may burn rapidly with flare-burning effect and may ignite other batteries in close proximity. The fire can produce corrosive and/or toxic gases including hydrogen chloride, hydrogen fluoride, and carbon monoxide, similar to a fire involving a like amount of plastics. Therefore, the first responders may need personal protective equipment to suppress the fire safely. Due to the potential for fire and toxic

[13] Ex. 300, pp. 4.15-11 – 4.15-12.
[14] Ex. 300, pp. 4.15-12 – 4.15-13.

gases from the lithium-ion energy storage system, the evidence indicates that the SERC's battery storage system presents a significant risk that must be mitigated.

There are a few standards and best practices that are being developed by the Underwriters Laboratories (UL) and the National Fire Protection Association (NFPA) for energy storage systems. The "NFPA 855: Standard for the Installation of Stationary Energy Storage Systems" is currently being developed by a technical committee and should be forthcoming in 2018. The UL has already published "UL 9540:2016: Energy Storage Systems and Equipment," whose requirements cover energy storage systems that are intended to receive electric energy and then to store the energy so that the battery storage system can provide electrical energy to loads or the local/area electric power system and to the electrical utility power grid when needed. In addition, the 2018 California Fire Code includes updates to the energy storage system code.[15]

Since the existing building and fire codes do not yet fully encompass the entire design and installation of a battery storage system, Staff has argued for a requirement that the battery storage system have a UL 9540 certification, which will cover both the integrated battery storage system design and its included components. The UL 9540 certification will ensure that adequate safety measures are provided and requires that the battery storage system meet an array of design requirements, industry standards, and safety codes. The standard also requires that a safety analysis and a fire risk assessment be conducted. This safety analysis will include an assessment of the adequacy of the battery storage system's control and safety systems. The fire risk assessment will include an assessment of the adequacy of the fire detection and fire suppression systems. A UL 9540 certification will ensure that both assessments occur, and that any recommended safety and fire protection measures will be included in the final design and installation before commissioning of the SERC battery storage system starts.[16]

Therefore, we impose Condition of Certification **WORKER SAFETY-8**, which requires the owner to meet any current regulatory requirements at the time of construction, to obtain UL 9540 certification for the battery storage system, and to collaborate with the OCFA in the review of fire safety provisions for the battery storage system. The project owner will also be required to provide necessary system information and opportunities for on-site fire training to the OCFA to assist them in updating their standard operating procedures for dealing with a potential lithium-ion battery fire at the SERC facility. We find that Condition of Certification **WORKER SAFETY-8** will provide adequate protection to on-

[15] Ex. 300, p. 4.15-13.

[16] Ex. 300, pp. 4.15-13 – 4.15-14.

site workers and will mitigate the fire risks posed to first responders and the off-site public to a level that is less than significant.[17]

Access

The main entrance to the SERC site will be from Dale Avenue. A second entrance for emergency access will be from Pacific Street. This is a sound fire safety practice and allows for fire department vehicles and personnel to access the site should the east main gate be blocked for any reason. Staff testified that OCFA has stated that a second emergency entrance will be needed. Therefore, to ensure the adequate emergency access to the SERC site by the fire department, we impose Condition of Certification **WORKER SAFETY-6,** which requires the project owner to identify, provide, and maintain, for the lifetime of the project, a secondary access to the site that meets the requirements of the Stanton Municipal Code for emergency response vehicles.[18]

Emergency Medical Services Response

Staff conducted a statewide survey to determine the frequency of Emergency Medical Services (EMS) response and off-site, fire-fighter response for natural gas fired power plants in California. The evidence shows that incidents at power plants that require fire or EMS response are infrequent and represent an insignificant impact on local urban fire departments. Most EMS calls to gas-fired power plants are for cardiac emergencies that are non-work-related incidents, including those involving visitors. The need for prompt response within a few minutes is well documented in the medical literature. The evidence indicates that the quickest medical intervention can only be achieved with the use of an on-site automatic external defibrillator (AED); the response from an off-site provider would take longer regardless of the provider location. Many private and public locations (e.g., airports, factories, government buildings) maintain on-site cardiac defibrillation devices.[19]

Therefore, we impose Condition of Certification **WORKER SAFETY-5** requiring the project owner to maintain a portable AED at the SERC site, which all power plant employees on site during construction, as well as all supervisory workers on site during construction, are trained in its use.[20]

The OCFA stated that the SERC site is located approximately one mile from Fire Station 46 located at 7871 Pacific Street, Stanton, California. The OCFA standard for total response time for arrival of the first arriving response unit is within five minutes for urban

[17] Ex. 300, pp. 4.15-14, 4.15-15.
[18] Ex. 300, pp. 4.15-12; 4.15-15 – 4.15-16.
[19] Ex. 300, p. 4.15-14.
[20] Ex. 300, p. 4.15-14

areas, which would apply to the SERC. The OCFA did not express concern that the SERC would impact their response times.[21]

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[22]

Staff reviewed the potential for the construction and operation of the SERC, combined with existing industrial facilities and expected new facilities in the vicinity, to result in impacts on the fire and emergency service capabilities of the OCFA and found that there was no significant potential for cumulative impacts to occur. The SERC Master Cumulative Project List is contained within the **PROJECT DESCRIPTION** section of this Decision.[23]

Based upon the evidentiary record, while it is possible that during a major earthquake (or other major event), response to the power plant could impact the OCFA, the likelihood of that happening is very remote and, therefore, less than significant. The SERC project will not have a significant incremental or cumulatively considerable impact on the OCFA's ability to respond to a fire or other emergency; therefore**,** no mitigation is required.[24]

We find that with the implementation of Conditions of Certification **WORKER SAFETY-1** through **WORKER SAFETY-8**, the project will have adequate levels of industrial safety such that the SERC will not present a significant impact to worker safety and fire protection.

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

Industrial workers at the facility operate equipment and handle hazardous materials daily and may face hazards that can result in accidents and serious injury. There are federal, state, and local LORS that regulate worker safety and fire protection. Implementation of these LORS eliminate or reduce these hazards to minimal levels.[25]

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[21] Ex. 300, 4.15-3.
[22] Cal. Code Regs., tit. 14, § 15130.
[23] Ex. 300, p. 4.15-15.
[24] Ex. 300, p. 4.15-15.
[25] Ex. 300, p. 4.15-1.

Worker Safety and Fire Protection Table 1 contains a list of the LORS applicable to the construction and operation of the SERC, as well as the LORS related to the provision of fire protection and emergency response services.

Worker Safety and Fire Protection Table 1[26]
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
Federal		
Title 29 U.S. Code (USC) section 651 et seq (Occupational Safety and Health Act of 1970)	Mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).	**Compliant. Conditions of Certification WORKER SAFETY-1** and **WORKER SAFETY-2** require the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction and operations. **Conditions of Certification WORKER SAFETY-3** and **WORKER SAFETY-4** require the project owner to hire a Construction Safety Supervisor and Safety Monitor to ensure all safety requirements are implemented.
Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	Define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.	**Compliant. Conditions of Certification WORKER SAFETY-1** and **WORKER SAFETY-2** require the project owner develop and implement occupational safety and health programs to prevent worker injuries during construction and operations. **Conditions of Certification WORKER SAFETY-3** and **WORKER SAFETY-4** require the project owner to require the project owner to hire a Construction Safety Supervisor and Safety Monitor to ensure all safety requirements are implemented.
STATE		
Title 8, California Code of Regulations (Cal Code Regs.) all	Require all employers follow these regulations as they pertain to the work involved. This includes	**Compliant. Conditions of Certification WORKER SAFETY-1** and **WORKER SAFETY-2** impose

[26] Ex. 300, p. 4.15-2.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
applicable sections (Cal/OSHA regulations)	regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling.	specific conditions to ensure compliance with Title 8.
Title 24, California Code of Regulations.	Incorporates the current edition of the International Building and Fire Codes (with changes).	**Compliant. Conditions of Certification WORKER SAFETY-1, WORKER SAFETY-2, WORKER SAFETY-6**and **WORKER SAFETY-8** require the project owner to provide the OCFA with the Construction Fire Prevention Plan, the Emergency Action Plan, Project Operations and Maintenance Safety and Health Program, access road locations, and all fire protection system specifications and drawings including those for the Energy Storage Systems and Equipment that meet Title 24 requirements.
LOCAL (OR LOCALLY ENFORCED)		
City of Stanton Municipal Code, Title 17 Fire, Chapter 17.08.010	Adopts the California Fire Code, 2016 Edition	**Compliant.** See above discussion regarding Title 24 of the California Code of Regulations.
National Fire Protection Association (NFPA) 850	Addresses fire protection at electrical generating stations.	**Compliant. Condition of Certification WORKER SAFETY-7** requires adherence to this NFPA industry standard.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Worker Safety and Fire Protection**.**

FINDINGS OF FACT

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

1. Construction and industrial workers are exposed to potential health and safety hazards.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The Stanton Energy Reliability Center will employ an on-site Safety Monitor during construction.

4. The Stanton Energy Reliability Center will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.

5. The Orange County Fire Authority will provide fire protection and emergency response services to the Stanton Energy Reliability Center and will be able to respond to the site within an acceptable time.

6. The Stanton Energy Reliability Center will not have a significant direct, indirect, or cumulative impact on worker safety, fire protection, and emergency services.

7. The Stanton Energy Reliability Center will meet or exceed the requirements of the most recently adopted edition of the California Fire Code and applicable National Fire Protection Association standards.

CONCLUSIONS OF LAW

1. Implementation of the **WORKER SAFETY AND FIRE PROTECTION** conditions of certification contained in **Appendix A** of this Decision will ensure that the Stanton Energy Reliability Center will not cause significant adverse direct, indirect, or cumulative impacts to worker safety or fire protection.

2. Implementation of the **WORKER SAFETY AND FIRE PROTECTION** conditions of certification contained in **Appendix A** of this Decision will ensure that the Stanton Energy Reliability Center will comply with all applicable laws, ordinances, regulations, and standards related to worker safety and fire protection.

E. HAZARDOUS MATERIALS MANAGEMENT

INTRODUCTION

This section considers whether the construction and operation of the Stanton Energy Reliability Center (SERC) will create significant impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials.[1] Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts. These include meteorological conditions, terrain characteristics, special site factors, and the proximity of population centers and sensitive receptors. This section also considers whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

This topic was uncontested. Evidence on the topic of Hazardous Materials Management is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 15, 22, 26, 28, 31, 54, 56, 75, 77, 88, 100, 300, and 307.[2]

SETTING AND PROJECT DESCRIPTION

The SERC site is virtually flat with a gently-sloping coastal plain that drains toward the Pacific Ocean. The location of elevated terrain is often an important factor in assessing potential exposure. An emission plume resulting from an accidental release may impact high elevations before impacting lower elevations.[3]

Meteorological conditions, including wind speed, wind direction, and air temperature, affect both the extent to which accidentally released hazardous materials would be dispersed into the air and the direction in which they would be transported. This affects the potential magnitude and extent of public exposure and associated health risks. When wind speeds are low and the atmosphere stable, dispersion is severely reduced and can lead to increased localized public exposure.[4] In addition, sensitive subgroups such as the young, the elderly, and those with existing health conditions may be at heightened risk from exposure to hazardous materials accidents. Recorded wind speeds and directions are described in the **AIR QUALITY** section of this Decision.[5]

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[1] The **WORKER SAFETY AND FIRE PROTECTION** portion of this Decision addresses the protection of workers from such risks.

[2] 8/2/18 RT pp. 29:20 – 30:14.

[3] Ex. 300, p. 4.5-5.

[4] Ex. 300, p. 4.5-5.

[5] Ex. 11, 5.1-17; Ex. 300, p. 4.5-6.

The location of the population in the area surrounding a project site may also have a major bearing on health risk. The nearest sensitive receptor is the Robert M. Pyles Elementary School located approximately 0.32-mile to the north of the SERC site on Dale Avenue. The nearest residence is located approximately 500 feet to the southeast of the SERC site.[6]

For a general project description, including the location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The evidence identifies the method used to assess risks posed by hazardous materials. This method included the following steps:

1. A review of chemicals, the amounts proposed for on-site use, the manner by which they will be transported to the facility and facility storage tanks, plans for material storage on site, as well as a determination of the need and appropriateness of their use.
2. Chemicals that will be used in small amounts, or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, were removed from further assessment.
3. A review and evaluation of measures proposed to prevent spills. These included engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs.
4. A review and evaluation of measures proposed to respond to accidents. These included engineering controls such as catchment basins and methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews.
5. An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place.[7]

Impact Assessment and Mitigation

During the construction phase of the project, the only hazardous materials proposed for use are paints, paint thinners, cleaners, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, lubricants, and welding gases. Any impact of spills or other

[6] Ex. 300, p. 4.5-6.

[7] Ex. 300, p. 4.5-7.

releases of these materials will be limited to the site because of the small quantities involved, their infrequent use (and therefore reduced chances of release), and/or the temporary containment berms used by contractors. Petroleum hydrocarbon-based motor fuels, mineral oil, lube oil, and diesel fuels all have very low volatility and represent limited off-site hazards even in larger quantities.[8]

During operations, hazardous chemicals such as cleaning agents, lube oil, mineral insulating oil, and other various chemicals will be used and stored in relatively small amounts and represent limited off-site hazards because of their small quantities, low volatility, and/or low toxicity. The list of all chemicals proposed to be used and stored at the SERC is attached to the conditions of certification as shown below in **Hazardous Materials Table 1** and is also attached to the Hazardous Materials Management conditions of certification in **Appendix A.**[9]

[8] Ex. 300, p. 4.5-7.

[9] Ex. 300, p. 4.5-8; 40-41.

Hazardous Materials Table 1
Chemical Inventory, Description of Hazardous Materials Stored On Site, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite (gallons, lbs, cubic feet)	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	EHS TPQ[c]	Regulated Substance TQ[d]	Prop 65
Aqueous ammonia NH3 (19 % NH3 by weight)	Aqueous ammonia	7664-41-7	5,000 gallons[g]	100 lbs	526 lbs	500 lbs	500 lbs	No
Cleaning chemicals/detergents	Various	None	110 gallons	[e]	[e]	[e]	[e]	No
Hydraulic oil	Oil	None	190 gallons	42 gallons[f]	42 gallons[f]	[e]	[e]	No
Laboratory reagents	Various	Various	10 gallons	[e]	[e]	[e]	[e]	No
Synthetic lubricating oil	Oil	None	1,610 gallons	42 gallons[f]	42 gallons[f]	[e]	[e]	No
Mineral lubricating oil	Oil	None	3,000 gallons	42 gallons[f]	42 gallons[f]	[e]	[e]	No
Mineral insulating oil	Oil	8012-95-1	14,400 gallons	42 gallons[f]	42 gallons[f]	[e]	[e]	No
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	45 lbs	[e]	[e]	[e]	[e]	No
Acetylene	Acetylene	47-86-2	600 cu ft	[e]	[e]	[e]	[e]	No
Oxygen	Oxygen	7782-44-7	600 cu ft	[e]	[e]	[e]	[e]	No
Propane	Propane	74-98-6	200 lbs	[e]	[e]	[e]	[e]	No
EPA Protocol gases	Various	Various	8,000 cu ft	[e]	[e]	[e]	[e]	No
Cleaning chemicals	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each chemical)	[e]	[e]	[e]	[e]	No

Chemical Inventory, Description of Hazardous Materials Stored On Site, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite (gallons, lbs, cubic feet)	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	EHS TPQ[c]	Regulated Substance TQ[d]	Prop 65
Paint	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each type)	[e]	[e]	[e]	[e]	No
FM-200	FE-227	431-89-0	1,560 lbs	[e]	[e]	[e]	[e]	No
CO2	CO2	53569-62-3	24,500 cu ft	[e]	[e]	[e]	[e]	No
Lead-acid batteries (and/or nickel-cadmium batteries)	Lead-acid and/or nickel-cadmium batteries	Various	5,000 lbs	1,000	1,000	1,000	1,000	Yes
Lithium ion batteries	Lithium Ion	96-49-1	252 tons	[e]	[e]	[e]	[e]	No

[a] RQs for a pure chemical, per the CERCLA SARA (Ref. 40 CFR 302, Table 302.4). Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported.

[b] RQ for materials as used onsite. Because some of the hazardous materials are mixtures that contain only a percentage of an RQ, the RQ of the mixture can be different than for a pure chemical. For example, if a material only contains 10 percent of a reportable chemical and the RQ is 100 lbs., the RQ for that material would be (100 lbs.)/(10 percent) = 1,000 lb.

[c] EHS TPQ (Ref. 40 CFR Part 355, **Appendix A**). If quantities of extremely hazardous materials equal to or greater than the TPQ are handled or stored, they must be registered with the local Administering Agency.

[d] TQ is from 19 CCR 2770.5 (state) or 40 CFR 68.130 (federal).

[e] No reporting requirement. Chemical has no listed threshold under this requirement.

[f] State Reporting Quantity (RQ) for oil spills that will reach California state waters (Ref. CA Water Code section 13272(f)).

[g] The NH_3 tank capacity is 5,000 gallons; however, the tank is only filled to 85 percent of its capacity, or 4,250 gallons. Notes:

CCR = California Code of Regulations

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act

CFR = Code of Federal Regulations

EHS = Extremely Hazardous Substance

SARA = Superfund Amendments and Reauthorization Act

TQ = Threshold Quantity

Ex.300, pp. 4.5-40 – 4.5-41.

Condition of Certification **HAZ-1** limits the SERC to using, storing, and transporting only those hazardous materials listed in **Hazardous Materials Table 1**. After removing from consideration those chemicals that pose no risk of an off-site impact, we review the remaining hazardous materials being natural gas and aqueous ammonia.[10]

Natural Gas

SERC operations will involve the handling (but not storage) of large quantities of natural gas. The SERC will install a new gas line that will connect from Southern California Gas Company's (SoCalGas) new on-site gas metering station to SoCalGas' gas pipeline network 2.75 miles north of the project along Dale Avenue at La Palma Avenue. A compressor will boost the natural-gas pressure for the combustion turbines.[11]

The evidence contains a thorough review of gas pipeline failures and shows that, while natural gas poses some risk of both fire and explosion, this risk can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. For example, National Fire Protection Association Code 37 requires both the use of double-block and bleed valves for gas shut-off and automated combustion controls. The record indicates that pipelines that failed from 1989 to 1995 were older and not manufactured or installed to modern code requirements. Similarly, the pipeline that failed in San Bruno, California in 2010 was installed in 1956 before modern quality control methods were available, and was placed in a location where newer in-ground defect detection methods could not be used. Condition of Certification **HAZ-9** prohibits the use of flammable gas blows for pipe cleaning at the facility, thereby precluding the presence of an explosive mixture. The safety measures that will be used at the SERC significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, the new gas metering station that is located entirely on site will greatly reduce the risk of impacts to the public from a rupture or failure.[12]

Aqueous Ammonia

Aqueous ammonia will be used to control oxides of nitrogen (NO_X) emissions resulting from natural-gas combustion. The SERC will store 19-percent aqueous ammonia solution in a new 5,000-gallon vertical, above-ground storage tank.

[10] Ex. 300, p. 4.5-8.

[11] Ex. 300, pp. 4.5-2; 4.5-9.

[12] Ex. 300, pp. 4.5-8 – 4.5-12.

However, the SERC's actual aqueous ammonia storage will be limited to 4,250 gallons or 85 percent of tank capacity.[13]

Aqueous ammonia is the only hazardous material that could realistically, without proper mitigation, pose a significant risk of off-site impact. This could result from the release of ammonia vapor in the event of a spill. The evidence contains a detailed analysis of both the potential impacts resulting from an ammonia spill and the adequacy of measures available to limit the severity of any impacts.[14]

Several benchmark exposure levels were used to assess the potential off-site impacts associated with an accidental release of aqueous ammonia. These include:

1. the lowest concentration posing a risk of lethality or 2,000 parts per million (ppm);
2. the concentration immediately dangerous to life and health or a level of 300 ppm;
3. the emergency response planning guideline level 2 of 150 ppm; and
4. the level of 75 ppm considered by Energy Commission staff (Staff) to be without serious adverse effects on the public for a one-time exposure.

If the potential exposure associated with a potential release exceeds 75 ppm at any public receptor, we would assume that the potential release poses a risk of significant impact. The evidentiary record contains a detailed discussion of the exposure criteria considered by Staff, as well as their applicability to different populations and exposure-specific conditions.[15]

The Stanton Energy Reliability Center, LLC (Applicant) performed an off-site consequence analysis for a worst-case accidental release of aqueous ammonia. This involved the failure and complete discharge of the larger of the storage tanks. The Applicant proposes installing three 2-foot-by-6-inch openings in the center of the secondary containment that lead to an underground vault. The secondary containment would be sloped to ensure that any aqueous ammonia would transfer down to the underground vault. The openings into the vault would reduce the effective surface area of the secondary containment limiting the evaporation rate of the aqueous ammonia. Condition of Certification **HAZ-4** ensures that the aqueous ammonia secondary containment structure includes essential design

[13] Ex. 300, p. 4.5-13.

[14] Ex. 300, p. 4.5-13.

[15] Ex. 300, **Appendix A**; pp. 4.5-35 - 4.5-36.

elements to prevent a worst-case spill from producing significant off-site impacts.[16] Based on the evidence, a potential worst-case spill of aqueous ammonia would not pose a significant risk to off-site members of the public.

Lithium Ion Batteries

Two 8.6 MW/4.3 MWh lithium ion battery energy storage systems will be installed at the SERC site. The two energy storage systems will be contained within two separate equipment enclosures rated for outdoor service. The enclosures will not have any internal walkways or internal personnel access ways. The enclosures will not be occupied space and all maintenance activities will be conducted from the exterior via removable panels or doors that open to the outside. The individual lithium ion batteries will be configured in multipacks in battery storage racks. The lithium ion batteries' temperatures will be continuously monitored by a battery indication and control system. If any battery begins to rise above a certain temperature set point, the battery control system will shut down portions or all of the batteries within the enclosure to prevent the start of a fire. In the case of a fire, an inert gas fire suppression system will activate to completely fill the enclosure to help put out the fire.[17]

The principal hazards associated with the lithium ion batteries are fire or explosion. Either could occur if the battery casing were opened or punctured, or if the battery short circuits or overheats. Contact with the internal contents of the battery can cause skin and eye irritation. The electrolyte used inside the batteries is flammable and may vent or ignite. Burning batteries may also release toxic gases including hydrogen fluoride gas.[18] Please see the **WORKER SAFETY AND FIRE PROTECTION** section of this Decision for a more thorough discussion of lithium ion battery impacts, proposed mitigation, and worker training.

Engineering and Administrative Controls

Engineering controls and administrative controls can reduce the significance of potential impacts from hazardous materials usage. Engineering controls are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) that can prevent a hazardous material spill from occurring, can limit the spill to a small amount, or can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow. These are

[16] Ex. 300, pp. 4.5-13 – 4.5-14.
[17] Ex. 300, p.4.5-12
[18] Ex. 300, p. 4.5-12.

designed to help prevent accidents or keep them minor if they do occur. Timely and adequate emergency spill response is also a crucial factor.[19]

The engineering safety features which will be used at the SERC include:

- Construction of secondary containment areas surrounding each of the hazardous materials storage areas designed to contain accidental releases that might happen during storage or delivery;
- Physical separation of stored chemicals in isolated containment areas with a non-combustible partition to prevent accidental mixing of incompatible materials, which could result in the evolution and release of toxic gases or fumes;
- Installation of a fire protection system for hazardous materials storage areas;
- Construction of bermed containment areas surrounding each of the aqueous ammonia storage tanks capable of holding the entire volume of the tank plus the water associated with a 24-hour period of a 25-year storm;
- Construction of a sloped ammonia unloading pad that drains into the storage tank's secondary containment structure; and
- Process protective systems including continuous tank level monitors, automatic leak detectors, temperature and pressure monitors, alarms, and emergency block valves.[20]

Administrative controls also help prevent accidents and releases (spills) from moving off site and affecting neighboring communities by establishing worker training programs, processing safety management programs, and complying with all applicable health and safety LORS. These include those required in Conditions of Certification **HAZ-1**, **HAZ-2**, and **HAZ-3**. The project owner's worker's health and safety program will include (but not be limited to) the following elements:

- Worker training regarding chemical hazards, health and safety issues, and hazard communications;
- Procedures to ensure the proper use of personal protective equipment;
- Safety operating procedures for the operation and maintenance of systems utilizing hazardous materials;

[19] Ex. 300, pp. 4.5-14 - 15.
[20] Ex. 300, pp. 4.5-14 - 15

- Fire safety and prevention; and
- Emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention.[21]

Condition of Certification **HAZ-3** would require the project owner to prepare and implement an emergency response plan for spill response that includes information on hazardous materials contingency and emergency response procedures, spill containment and prevention systems, personnel training, spill notification, and on-site containment, as well as other elements.[22]

The emergency first responders to a hazardous materials incident at the SERC would be from Station No. 46 of the Orange County Fire Authority (OCFA). If needed, a full hazardous materials response team would be provided from OCFA Station No. 79. The evidence indicates that the OCFA response team would be capable of responding to a hazardous materials emergency call from the SERC.[23] Additional information on worker training, safety procedures, and first responders is included in the **WORKER SAFETY AND FIRE PROTECTION** section of this Decision. Based on the evidence, we find that the SERC's use and storage of hazardous materials, including natural gas and aqueous ammonia, poses a less-than-significant risk to public health and safety.

Transportation Risk Reduction

The evidence shows that transport of aqueous ammonia poses the predominant risk to off-site receptors. Aqueous ammonia can be released during a transportation accident. The extent of impact depends upon the location of the accident and the rate of dispersion of vapor from the surface of the aqueous ammonia pool. The actual likelihood of an accidental release during transport depends upon the tanker driver's skill, the type of transport vehicle, and accident rates.[24]

Aqueous ammonia will be delivered to the facility in U.S. Department of Transportation (DOT)-certified vehicles with design capacities of 7,000 gallons. These high-integrity vehicles are designed to DOT Code MC307/DOT 407 and are suitable for hauling caustic materials such as aqueous ammonia. Condition of Certification **HAZ-5** requires that only tankers that meet or exceed these

[21] Ex. 300, pp. 4.5-15 - 16.
[22] Ex. 300, p. 4.5-16.
[23] Ex. 300, p. 4.5-16.
[24] Ex. 300, p. 4.5-16.

specifications will be used for aqueous ammonia deliveries.[25] Condition of Certification **TRANS-5** ensures that the project owner will contract with licensed hazardous materials and waste hauler companies that comply with all applicable regulations.[26]

The Applicant proposed the following transportation route to the site from State Road (SR) 91, exiting on Beach Boulevard and traveling south to Katella Avenue, then east on Katella Avenue, and then turning left and heading north on Dale Avenue to the SERC entrance. The Applicant also requested a hazardous material delivery route starting from Interstate 5 (I-5), approximately one-mile north of SR 91. The hazardous materials delivery would be required to exit onto Beach Boulevard and follow the rest of the original proposed route from SR 91.[27] Condition of Certification **HAZ-6** restricts hazardous materials deliveries to those two routes. Operation of the SERC will require about two aqueous ammonia deliveries per month. Each delivery will travel approximately 4.41 miles from SR 91 to the facility. The I-5 route adds approximately one mile to the SR 91 route. The additional mile is a continuation of Beach Boulevard, which is an urban multi-lane undivided road. This results in a maximum of 12 miles of tanker truck travel (with a full load) in the project area per month during peak operation (with a full load), and an average of approximately 119 miles of tanker truck travel per year.[28]

Data shows that the actual risk of a truck transporting hazardous materials in the U.S. having an accident is between 0.64 and 13.92 per 1,000,000 miles traveled on well-designed roads and highways. Staff's modeling results show a risk of about one in 295,000 for one trip from SR 91 and a total annual risk of about one in 59,000 for approximately five deliveries over a year. The evidence also shows that the addition of the I-5 route will not increase the likelihood of an accidental hazardous materials release.[29] We find that, given the inherent conservatism of the assumptions used, the evidence supports the conclusion that the risk of a transportation accident resulting in the release of a hazardous material is less than significant.[30]

[25] Ex. 300, p. 4.5-17.
[26] Ex. 300, p. 4.5-17.
[27] Ex. 300, p. 4.5-16.
[28] Ex. 300, p. 4.5-17.
[29] Ex. 300, p. 4.5-18.
[30] Ex. 300, pp. 4.5-18 – 4.5-19.

Seismic Issues

The evidentiary record contains an analysis of the risk of failure of a hazardous materials storage tank, secondary containment systems, and electrically controlled valves and pumps. The SERC facility will be designed and constructed to comply with the most recent California Building Standards Code (2016 or later), including seismic standards. The evidence indicates that tank failures during seismic events are not probable and do not represent a significant risk to the public.[31]

Site Security

The hazardous materials used by the SERC are listed by several federal agencies (i.e., U.S. Environmental Protection Agency, U.S. Department of Homeland Security, and U.S. Department of Energy) in vulnerability assessments requiring special site security measures to prevent unauthorized access. The evidence shows that a minimum level of security measures is appropriate in order to protect California's electrical infrastructure from malicious mischief, vandalism, or terrorist attack.[32]

The Applicant must prepare security plans for the construction and operation phases that include a description of perimeter security measures and procedures for evacuation, notifying authorities of a security breach, monitoring fire alarms, and conducting background checks for site personnel and hazardous materials drivers.[33] Perimeter security measures include fencing, security guards, security alarms, breach detectors, motion detectors, video or camera systems, and site-access procedures for employees and vendors.

The SERC plant will normally be unmanned, having personnel on site only for maintenance activities and to accept deliveries. The evidence indicates that local duty personnel need to be on call 24 hours per day, 7 days a week, and capable of arriving on site within 30 minutes or less to communicate and coordinate response actions with emergency personnel when needed. Depending upon the nature of any emergency incident, the fire department may have to wait for assurance from SERC personnel that remotely dispatched and controlled systems have been disabled and de-energized before entering the site or initiating mitigating actions. A delay could possibly allow an incipient fire or hazardous materials incident to escalate into one having potential to impact the surrounding community. Therefore, we impose Condition of Certification **HAZ-8** to ensure that

[31] Ex. 300, pp. 4.5-19 – 4.5-20.
[32] Ex. 300, p. 4.5-19.
[33] Ex. 300, p. 4.5-19.

SERC personnel will be available within 30 minutes of an emergency response or incident.[34]

Site access for vendors will be strictly controlled. Consistent with current state and federal regulations governing the transport of hazardous materials, the project owner is required, through the use of contractual language with vendors, to ensure that vendors supplying hazardous materials strictly adhere to the DOT requirements for hazardous materials vendors, prepare and implement security plans, and ensure that all hazardous materials drivers are in compliance through personnel background security checks. The compliance project manager may authorize modifications to these measures or may require additional measures in response to guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, and the North American Electric Reliability Corporation after consultation with appropriate law enforcement agencies and the project owner. Conditions of Certification **HAZ-7** and **HAZ-8** embody these requirements for both the construction and operation phases.[35]

Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[36]

For hazardous materials, a significant cumulative impact is the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact. The evidence shows that the chances of one uncontrolled release occurring are remote. The chance of two or more occurring simultaneously, with resulting airborne plumes comingling to create a significant impact, is even more remote.[37]

The SERC poses a minimal risk of creating off-site impacts from an accidental release. The evidence establishes that it is highly unlikely that accidental aqueous ammonia releases from the SERC and another nearby project would occur simultaneously and that the risk to the public is less than significant. We therefore

[34] Ex. 300, p. 4.5-20.
[35] Ex. 300, pp. 4.5-20 – 4.5-21.
[36] Cal. Code Regs., tit. 14, § 15130.
[37] Ex. 300, p. 4.5-21.

find that the SERC facility will not cause or contribute to a cumulatively considerable impact due to its handling of hazardous materials.[38]

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

The following federal, state, and local laws and policies apply to the protection of public health and hazardous materials management. Here we examine the project's compliance with these requirements.

Hazardous Materials Management Table 2
Laws, Ordinances, Regulations, and Standards[39]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Federal		
The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.)	Contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III).	**Compliant.** Condition of Certification **HAZ-1** requires that the project owner provide a list of all hazardous materials, their amount, concentration, and location on-site.
The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended)	Established a nationwide emergency planning and response program and imposed reporting requirements for businesses that store, handle, or produce significant quantities of extremely hazardous materials.	**Compliant.** Condition of Certification **HAZ-2** requires a Hazardous Materials Business Plan (HMBP) which is required by section 112r of the Clean Air Act.
The CAA section on risk management plans (42 USC §112(r))	Requires states to implement a comprehensive system informing local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.	**Compliant.** Condition of Certification **HAZ-2** requires a Hazardous Materials Business Plan (HMBP) which is required by section 112r of the Clean Air Act.
49 CFR 172.800	The U.S. Department of Transportation (DOT) requirement that suppliers of hazardous materials prepare and implement security plans.	**Compliant.** Condition of Certification **HAZ-8** requires an Operations Security Plan that includes requirements for hazardous materials delivery vendors to follow.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.	**Compliant.** Condition of Certification **HAZ-8** requires an Operations Security Plan that includes requirements for hazardous materials delivery vendors to follow.

[38] Ex. 300, p. 4.5-21.

[39] Ex. 300, pp. 4.5-2 – 4.5-4.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
The Clean Water Act (CWA) (40 CFR 112)	Prevents the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written spill prevention, control, and countermeasures (SPCC) plan to be prepared for facilities that store oil that could leak into navigable waters.	**Compliant.** Condition of Certification **HAZ-2** requires a Spill Prevention Control and Countermeasures Plan (SPCC).
Title 49, Code of Federal Regulations, Part 190	Outlines gas pipeline safety program procedures.	**Compliant.** The natural gas pipeline will be designed for Class 3 service and meet all standards of CPUC General Order 112D and 58A standards and all federal regulations. The natural gas pipeline will be constructed and operated in accordance with the Federal Department of Transportation (DOT) regulations, Title 49, Code of Federal Regulations (CFR), Parts 190, 191, and 192. The new gas metering station is located entirely on-site, which greatly reduces the risks of impacts to the public from a rupture or failure.
Title 49, Code of Federal Regulations, Part 191	Addresses transportation of natural and other gas by pipeline; requirements for annual reports, incident reports, and safety-related condition reports. Requires operators of pipeline systems to notify the DOT of any reportable incident by telephone and then submit a written report within 30 days.	**Compliant.** The gas pipeline will be owned and operated by SoCalGas. Condition of Certification **HAZ-9** requires the project owner to submit written procedures regarding cleaning and purging the gas line. The National Fire Protection Association (NFPA) Code 37 - Installation and Use of Stationary Combustion Engines and Gas Turbines prescribes the use of both double-block and bleed valves for gas shut off and automated combustion controls including automatic fuel gas shutoff for process upset conditions. These measures and other industry best practices will significantly reduce the likelihood of an explosion in gas-fired equipment.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Title 49, Code of Federal Regulations, Part 192	Addresses transportation of natural and other gas by pipeline and minimum federal safety standards, specifies minimum safety requirements for pipelines including material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use that characterize the surrounding land. This part also contains regulations governing pipeline construction (which must be followed for Class 2 and Class 3 pipelines) and the requirements for preparing a pipeline integrity management program.	**Compliant.** The gas pipeline will be owned and operated by SoCalGas. Condition of Certification HAZ-9 requires the project owner to submit written procedures regarding cleaning and purging the gas line. The National Fire Protection Association (NFPA) Code 37 - Installation and Use of Stationary Combustion Engines and Gas Turbines prescribes the use of both double-block and bleed valves for gas shut off and automated combustion controls including automatic fuel gas shutoff for process upset conditions. These measures and other industry best practices will significantly reduce the likelihood of an explosion in gas-fired equipment.
Federal Register (6 CFR Part 27) interim final rule	Requires facilities that use or store certain hazardous materials to submit information to the department so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.	**Compliant.** Condition of Certification **HAZ-8** requires an Operations Security Plan that includes requirements for site security including perimeter fencing, breach detection, and other requirements.
State		
Title 8, California Code of Regulations, section 5189	Requires facility owners to develop and implement effective safety management plans that ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the Risk Management Plan (RMP) process.	**Compliant.** Condition of Certification **HAZ-2** requires a RMP, Condition of Certification **HAZ-3** requires a safety management plan, Condition of Certification **HAZ-5** requires the use of certain tanker trucks when transporting aqueous ammonia to the site, and Condition of Certification **HAZ-6** requires only one transportation route.
California Health and Safety Code, section 25531 to 25543.4	The California Accidental Release Program (CalARP) requires the preparation of a RMP and off-site consequence analysis and submittal to the local Certified Unified Program Agency for approval.	**Compliant.** Condition of Certification **HAZ-2** requires a RMP to be submitted to the Certified Unified Program Authority (CUPA) and CPM.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
California Health and Safety Code, section 41700	Requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."	**Compliant.** Implementation of all engineering and administrative controls outlined in the application, the Final Staff Assessment, and all Hazardous Materials conditions of certification.
Title 19, California Code of Regulations, Division 2, Chapter 4.5, Articles 1-11	Sets forth the list of regulated substances and thresholds, the requirements for owners and operators of stationary sources concerning the prevention of accidental releases, the accidental release prevention programs approved under Section 112 of the federal Clean Air Act (CAA) Amendments of 1990 and mandated under the CalARP Program, and how the CalARP Program relates to the state's Unified Program.	**Compliant.** Condition of Certification **HAZ-2** requires a RMP and a Hazardous Materials Business Plans to be submitted to the CUPA and the CPM.
Title 22, California Code of Regulations, Chapter 14, Article 10	The design requirements set forth for new tank construction and secondary containment requirements for hazardous chemicals and waste.	**Compliant.** Condition of Certification **HAZ-4** requires certain design specifications for the aqueous ammonia storage tank and secondary containment.
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity from being discharged into sources of drinking water.	**Compliant.** Implementation of all engineering and administrative controls outlined in the application, the Final Staff Assessment, and all Hazardous Materials conditions of certification.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
California Public Utilities Commission General Order 112-E and 58-A	Contains standards for gas piping construction and service.	**Compliant.** The gas pipeline will be owned and operated by SoCalGas. Condition of Certification HAZ-9 requires the project owner to submit written procedures regarding cleaning and purging the gas line. The National Fire Protection Association (NFPA) Code 37 - Installation and Use of Stationary Combustion Engines and Gas Turbines prescribes the use of both double-block and bleed valves for gas shut off and automated combustion controls including automatic fuel gas shutoff for process upset conditions. These measures and other industry best practices will significantly reduce the likelihood of an explosion in gas-fired equipment.
Local (or locally enforced)		
City of Stanton Municipal Code, Title 16 Buildings and Construction, Division 1, Chapter 16.04.010	The city has adopted the 2016 California Building Code.	**Compliant.** See Conditions of Certification **COM-1** through **COM-7**, as well as **COM-10** and **COM-11** in the **COMPLIANCE CONDITIONS AND COMPLIANCE MONITORING PLAN** section of this Decision.
City of Stanton Municipal Code, Title 17 Fire, Chapter 17.08.010	The city has adopted the 2016 California Fire Code.	**Compliant.** See Condition of Certification **WORKER SAFETY-7** in the **WORKER SAFETY AND FIRE PROTECTION** section of this Decision.

The evidence indicates, and we find, that construction and operation of the SERC project will comply with all applicable LORS regarding long-term and short-term project impacts in the area of hazardous materials management.[40]

AGENCY AND PUBLIC COMMENT

No agency or public comments were received on the topic of Hazardous Materials Management.

FINDINGS OF FACT

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

[40] Ex. 300, p. 4.5-23.

1. The Stanton Energy Reliability Center will use hazardous materials, including aqueous ammonia, lithium ion batteries, and natural gas, during construction and operation.

2. Explosion and fire from natural gas, lithium ion batteries, and the accidental release of aqueous ammonia are the major public health and safety dangers associated with the Stanton Energy Reliability Center's use of hazardous materials.

3. Energy Commission staff's independent analysis indicates that appropriate design measures to contain spilled ammonia are necessary to ensure that no significant off-site public health consequences will result from an accidental release.

4. Compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of aqueous ammonia will reduce potential risks of accidental release to less-than-significant levels.

5. The risk of fire and explosion from natural gas will be reduced to less-than-significant levels through adherence to applicable codes and the implementation of effective safety management practices.

6. Potential impacts from the other hazardous substances used on site are not significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. Truck deliveries of aqueous ammonia are restricted to the delivery routes specified in Condition of Certification **HAZ-6**.

8. The likelihood of cumulative impacts originating from simultaneous releases of hazardous materials from the Stanton Energy Reliability Center and another project resulting in airborne plumes comingling to create a significant impact is statistically remote and less than significant.

9. Local emergency responders are adequately equipped to deal with hazardous materials accidents at the Stanton Energy Reliability Center.

10. Implementation of the mitigation measures described in the evidence and contained in the conditions of certification ensures that the Stanton Energy Reliability Center will not cause significant impacts to public health and safety as a result of the handling, use, storage, or transportation of hazardous materials.

CONCLUSIONS OF LAW

1. The Stanton Energy Reliability Center will not create any significant direct, indirect, or cumulative environmental impacts to hazardous materials handling.

2. With implementation of the conditions of certification listed in **Appendix A**, the storage, use, handling, and transportation of hazardous materials associated with the Stanton Energy Reliability Center project will comply with all laws, ordinances, regulations, and standards, and will not result in any significant direct, indirect, or cumulative adverse public health and safety impacts.

F. WASTE MANAGEMENT

INTRODUCTION

This section reviews the Stanton Energy Reliability Center (SERC) project'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 wastes. This section also considers whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

Evidence on the topic of Waste Management is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 24, 28, 30, 31, 55, 56, 65, 88, 92, 96, 100, and 300.[1]

SETTING AND PROJECT DESCRIPTION

The SERC site will be located on 3.978acres of previously disturbed land zoned for industrial uses and is partly paved over. The western portion of the site is currently developed and occupied by a trucking company and a wooden pallet storage company. It has a wooden garage building, an asphalt-paved parking area, an unpaved truck parking area, and a wooden pallet storage area. The eastern portion is vacant and undeveloped.

For additional information on the location and setting of the SERC, please refer to the **PROJECT DESCRIPTION** section of this Decision.[2]

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The waste management analysis addresses existing project site conditions and the potential for contamination associated with prior activities on or near the project site, as well as the impacts from the generation and management of wastes during project construction and operation.

Impact Assessment and Mitigation

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC).[3] State law requires hazardous waste generators to obtain U.S. Environmental Protection Agency (U.S. EPA) identification numbers

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[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 300 p. 4.14-8.

[3] California Health and Safety Code, § 25100 et seq. (Hazardous Waste Control Act of 1972, as amended) and Cal. Code of Regs., tit. 22, § 66261.1 et seq.

and to contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities.[4] Non-hazardous 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]

The construction of the SERC project over approximately 12 months will produce a variety of mixed wastes, such as wood and metal pieces, concrete, asphalt, empty containers, asbestos debris, heavy metal dust, universal wastes, batteries, waste oil filters, solvents, and containers. Some will be recycled where practical while all other wastes will be deposited in Class I or Class III landfills.[6]

Operation and maintenance of the SERC and associated facilities will generate a variety of nonhazardous and hazardous wastes.

To control air emissions, the project's turbine units will use selective catalytic reduction and oxidation catalyst systems that generate specific hazardous wastes that will be returned to the manufacturer for recycling, if possible, or disposed of in a Class I landfill. Such waste-generating replacement of SCR units occurs only about once every 15 years.[7]

The Energy Commission's facility certification process requires a Phase I Environmental Site Assessment (ESA) to identify any locations or conditions suggestive of potential and/or existing releases of hazardous substances or contamination at or adjacent to the project site or its linear facilities (e.g., wastewater pipeline or transmission line). If any hazardous conditions are identified, a Phase II ESA must be conducted to evaluate the extent of possible contamination and to describe the appropriate mitigation measures.[8]

Any location known to be contaminated (or to be a source of contamination) near the site is known as a Recognized Environmental Condition or REC. REC is the presence or likely presence of any hazardous substances or petroleum products on a property under the conditions that indicate an existing release, past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property.[9]

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[4] Cal. Code Regs., tit. 22, § 66262.10 et seq.
[5] Cal. Code Regs., tit. 14, § 17200 et seq.
[6] Ex. 300, p. 4.14-9; Ex. 21, Table 5.11-1.
[7] Ex. 300, p. 4.14-9; Ex. 24, Table 5.14-1.
[8] Ex. 300, pp. 4.14-9 – 4.13-10.
[9] Ex. 300, p. 4.14-10.

The Applicant submitted a Phase I ESA, dated August 2016, which was performed in accordance with the American Society for Testing and Materials Standard Practice E 1527-13 for ESAs. The SERC Phase I ESA established the need for a Phase II ESA to further assess the potential for contamination and related chemical exposures during construction or within facility buildings. The Phase II ESA was conducted in September 2016.[10] It suggested a lack of contamination of potential health significance, but given the history of the site as a place of past industrial activity, Energy Commission staff (Staff) was unable to rule out any contaminant discovery from future site grading and other construction activities.[11]

To ensure that the Applicant has procedures in place to properly handle any contaminated soil, we impose Condition of Certification **WASTE-1** requiring the project owner to prepare (and submit to the Energy Commission compliance project manager (CPM) for review and approval) a Soil Management Plan (SMP) before the start of any soil-disturbing activities. The SMP shall be prepared by a California Registered Geologist or Civil Engineer with sufficient experience in hazardous waste management. The SMP will be used for proper identification, handling, on-site management, and disposal of the impacted soil. The specific objective of the SMP is to describe the procedures to be followed during soil disturbances to ensure worker protection from toxicant exposure. The scope of the SMP will be limited to activities involving excavation, contaminant characterization, and reuse and/or disposal of contaminated soil. The typical SMP includes engineering controls, Health and Safety Plans, earthwork schedules, and a list of responsible staff.[12]

We also impose Conditions of Certification **WASTE-2** and **WASTE-3**. Condition of Certification **WASTE-2** ensures that an experienced and qualified engineer or professional geologist will be available for consultation if contamination is discovered. Condition of Certification **WASTE-3** requires a professional engineer or geologist to inspect the site, determine what would be required to characterize the nature and extent of contamination, and provide a report to the CPM on findings and recommendations. The on-site consulting professional must contact the CPM and representatives of the Department of Toxic Substances Control on the recommended course of action.[13]

[10] Ex. 24, p. 5.14-1.
[11] Ex. 300, p. 4.14-11.
[12] Ex. 300, pp. 4.14-11 – 4.14-12.
[13] Ex. 300, p. 4.14-12.

Construction and Demolition Impacts and Mitigation

Activities related to demolition, site preparation, and construction for the SERC project and associated facilities will generate both hazardous and nonhazardous wastes in solid and liquid forms. The Applicant has listed the types of wastes expected from construction together with applicable disposal methods, most of which are ordinary solid nonhazardous waste with recyclable fractions.[14]

Nonhazardous Wastes

Before demolition and construction can begin, the project owner must prepare a Construction and Demolition (C&D) Debris Recycling Plan to ensure proper handling of the generated nonhazardous wastes. California law requires local governments to ensure that solid wastes are reduced, reused, recycled, or diverted from landfills as much as practicable.[15] The 2008 California Green Building Standards Code requires all construction project proponents to develop a recycling plan to divert or recycle at least 50 percent of wastes generated during construction. The minimum reduction level for Orange County is 65 percent, which will be achieved through implementation of Condition of Certification **WASTE-4** that facilitates proper management of project demolition and construction wastes in accordance with Orange County's integrated countywide waste management program.[16]

The Applicant estimates that about 95 tons of nonhazardous wastes will be generated from SERC construction, including wood, glass, metal, plastics, concrete, asphalt, oil-absorbent mats, and oily rags. The project owner will recycle nonhazardous wastes to the extent practical with the non-recyclables collected by a licensed hauler and disposed of in a solid waste facility in compliance with California Code of Regulations, title 14, section 17200 et seq.[17]

Liquid nonhazardous wastes, such as sanitary wastes, dust suppression water, stormwater, and equipment-wash water will also be generated during construction. Sanitary wastes will be collected in portable, self-contained toilets and pumped out periodically for disposal at an appropriate facility. Contaminated equipment wash or test water will be stored in a designated area, tested to determine if they are hazardous, and either discharged into the stormwater retention basin or transported to an appropriate treatment/disposal facility. More information on

[14] Ex. 24, pp. 5.14-2 - 5.14-3.
[15] California Integrated Waste Management Act of 1989 (AB 939).
[16] Ex. 300, p. 4.14-12.
[17] Ex. 300, pp. 5.14-12 - 5.14-13.

management of the project's wastewater can be found in the **SOIL AND WATER RESOURCES** section of this Decision.[18]

Hazardous Wastes

The hazardous solid wastes generated from the SERC construction could include asbestos waste, used oils, electrical equipment, lead-acid storage batteries, and universal wastes. Although the Applicant's Phase I ESA did not include an assessment of asbestos, we find that Condition of Certification **WASTE-5** is adequate for abatement at any of the existing on-site buildings or structures if asbestos is encountered. The South Coast Air Quality Management District requires the owner of a demolition or renovation project to submit a Notification of Demolition or Renovation Form for approval before any asbestos stripping or removal work begins.

Since the Applicant classified the project as a hazardous waste generator, the SERC will have to obtain a site-specific U.S. EPA identification number that is used to manifest hazardous wastes from the facility before off-site disposal, treatment, or recycling. Such wastes will be stored on site for less than 90 days and transported by licensed hazardous waste hauler companies. Condition of Certification **WASTE-6** ensures that the SERC's U.S. EPA identification number is reported to the CPM before the start of demolition or construction. Condition of Certification **WASTE-7** ensures that any waste management-related enforcement action initiated by a regulatory agency against the SERC is reported to the CPM. We find that the SERC's intended waste minimization and disposal methods of construction waste will be adequate to allow all wastes to be disposed of in accordance with applicable LORS. [19]

Operation Impacts and Mitigation

The hazardous and nonhazardous wastes expected from the SERC's operation include routine maintenance-related materials such as used turbine air filters, spent deionization resins, used air pollution control equipment, broken and rusted machine parts and electrical materials, empty containers, and rags, as well as domestic wastes typical of workers and small offices. It is estimated that less than 10 tons of nonhazardous waste will be generated per year.[20] All components will be recycled to the extent possible and non-recyclable constituents regularly transported off site to a local solid waste disposal facility. Nonhazardous liquid wastes are discussed in the **SOIL AND WATER RESOURCES** section of this

[18] Ex. 300, p. 4.14-13.
[19] Ex. 24, pp. 5.14-9 - 5.14-10; Ex. 300, p. 4.14-13.
[20] Ex. 24, p. 5.14-3.

Decision. To ensure implementation of applicable LORS, Condition of Certification **WASTE-8** requires preparation of an Operations Waste Management Plan to be submitted to the CPM for review and approval.[21]

Condition of Certification **WASTE-9** requires the project owner to rapidly remediate and report any clean-up of any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements. More information on hazardous spill management, reporting, containment, and control is provided in the **HAZARDOUS MATERIALS MANAGEMENT** section of this Decision.[22]

Potential Impacts on Waste Disposal Facilities

It is estimated that the SERC will generate approximately 95 tons of solid, nonhazardous wastes during project construction and less than 10 tons per year during operations. Such nonhazardous wastes will be disposed of in California Class III landfills; three in the region are listed in **Waste Management Table 1**. The evidence indicates that 4.7 million tons of solid nonhazardous waste was deposited in landfills in Orange County in 2015. In comparison, the SERC's yearly contribution to the county's landfilled solid wastes will be minimal.

The Applicant proposes to dispose of about 12,000 tons of soil and 600 tons of concrete and asphalt demolition wastes at the Olinda Landfill. The Olinda Landfill is permitted to accept up to 8,000 tons per day of refuse, but typically accepts about 7,000 tons per day. Orange County Waste and Recycling's (OCWR) Soils Programs Department confirmed that up to 8,000 cubic yards (or 13,000 tons) of soil would be accepted by the landfill from the SERC project. Current capacity projections suggest that the landfill can remain operational through 2030. Condition of Certification **WASTE-10** ensures that the SERC disposal activities will comply with the Orange County Waste and Recycling requirements.[23]

The record establishes that hazardous wastes generated during demolition, construction, and operation will be minimal and recycled to the extent practicable.[24] Any wastes that cannot be recycled will be transported off site to a permitted Class I landfill. There are 145 facilities in California available to accept such wastes; however, for ultimate disposal in California, hazardous waste is taken to one of California's two Class I landfills: the Clean Harbors Buttonwillow Landfill in Kern County or the Waste Management Kettleman Hills Landfill (see **Waste**

[21] Ex. 24, p. 5.14-5; Ex. 300, p. 4.14-14.

[22] Ex. 300, p. 4.14-14.

[23] Ex. 300, p. 4.14-14; 4.14-19.

[24] Ex. 24, pp. 5.14-4, 5.14-5: 5.14-8.

Management Table 1). Together they have 18.35 million cubic yards of capacity remaining.[25]

Given the availability of recycling facilities for hazardous wastes such as used oil and solvents, together with the large amount of disposal space available at California's Class I disposal facilities, we find that the hazardous wastes from the SERC will not significantly impact the capacity or remaining lives of California's Class I facilities.[26]

Waste Management Table 1
Solid Waste Recycling/Disposal Facilities Available for SERC

Landfill/Transfer Station	Location (City)	Remaining Capacity (Cubic yards)	Estimated Closure Date
Class III –Nonhazardous			
Prima Descheca Sanitary Landfill	San Juan Capistrano, CA	87.39 million	2067
Olinda Alpha Sanitary Landfill	Brea, CA	34.2 million	2021
Frank R. Bowerman Sanitary Landfill	Irvine, CA	205 million	2052
Class I -Hazardous Waste			
Clean Harbors Buttonwillow	Kern, CA	13.35 million	2040
Waste Management Kettleman Hills	Kings, CA	5 million	2044

Source: Ex.24, pp. 5.14-6; 5.14-7 and 4.14-15.

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[27]

The SERC's nonhazardous solid wastes of cumulative significance will be the 10 tons generated per year from routine operations. Given the amounts of solid waste deposited to the landfill per year in Orange County (4.7 million tons in 2015 for example), and the available 326.58 million cubic yards of disposal space (as shown in **Waste Management Table 1**), the evidence indicates that the solid wastes from the SERC would be of minimal cumulative significance in the project area.[28]

[25] Ex. 24, p. 5.14-8.
[26] Ex. 300, p. 4.14-15.
[27] Cal. Code Regs., tit. 14, § 15130.
[28] Ex. 300, p. 4.14-15.

The SERC's proposed waste management and mitigation measures (implementation of source reduction, waste minimization and recycling), along with the conditions of certification, ensure that wastes generated by the project will not result in a cumulatively considerable impact to local waste management and disposal facilities. The SERC's contribution will be significantly less than one percent of Orange County's waste generation.[29] We find that the SERC's impacts to local waste management and disposal facilities will not be cumulatively considerable when considered in combination with the projects identified in the SERC Master Cumulative Project List contained in the **PROJECT DESCRIPTION** section of this Decision.

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

The following federal, state, and local environmental LORS have been established to ensure the safe and proper management of both solid and liquid hazardous and nonhazardous wastes in order to protect human health and the environment.

Waste Management Table 2
Laws, Ordinances, Regulations, and Standards[30]

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
Federal		
Title 42, United States Code, §§ 6901, et seq. Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al.)	Establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation, and delegation to states, enforcement provisions, and responsibilities, as well as research, training, and grant funding provisions. RCRA Subtitle C establishes provisions for the generation, storage, treatment, and disposal of hazardous waste, including requirements addressing: generator record keeping practices that identify quantities of hazardous wastes generated and their disposition; waste labeling practices and use of appropriate containers; use of a manifest when transporting wastes; submission of periodic reports to the United States Environmental Protection Agency (U.S. EPA) or other authorized	**Compliant.** The project owner will recycle and/or dispose of hazardous and nonhazardous wastes at facilities licensed or otherwise approved to accept the wastes. The Applicant will obtain a hazardous waste generator identification number from the U.S. EPA. The project owner also must properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and use appropriately trained employees in accordance with state and federal hazardous waste management requirements. Conditions of Certification **WASTE-1, WASTE-4,** and **WASTE-8** will ensure implementation of the Title 42 requirements.

[29] Ex. 300, p. 4.14-15.
[30] Ex. 300, pp. 4.14-2 – 4.14-8; 4.14-18.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
	agency; and corrective action to remediate releases of hazardous waste and contamination associated with RCRA-regulated facilities. RCRA Subtitle D establishes provisions for the design and operation of solid waste landfills. RCRA is administered at the federal level by U.S. EPA and its ten regional offices. The Pacific Southwest regional office (Region 9) implements U.S. EPA programs in California, Nevada, Arizona, and Hawaii.	
Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes	Implements the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes. Part 246 addresses source separation for materials recovery guidelines. Part 257 addresses the criteria for classification of solid waste disposal facilities and practices. Part 258 addresses the criteria for municipal solid waste landfills. Parts 260 through 279 address management of hazardous wastes, used oil, and universal wastes (i.e., batteries, mercury-containing equipment, and lamps). The U.S. EPA implements the regulations at the federal level. However, California is an authorized state so the regulations are implemented by state agencies and authorized local agencies in lieu of the U.S. EPA.	**Compliant.** The project owner will properly classify all waste streams to ensure appropriate handling and disposal. Conditions of Certification **WASTE-4** and **WASTE-8**, which require the project owner to prepare Construction Waste Management and Operation Waste Management Plans, will ensure implementation of the requirements of the Code.
Title 49, CFR, Parts 172 and 173	U.S. Department of Transportation established standards for transport of hazardous materials and hazardous wastes. The standards include	**Compliant.** Conditions of Certification **WASTE-4**, **WASTE-6**, and **WASTE-8** require the project

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
Hazardous Materials Regulations	requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, and section 262.20.	owner to comply with these regulations.
Interim Final Rule 29 CFR Part 1926.62	Provides uniform inspection and compliance guidance for Lead Exposure in Construction.	**Compliant.** The project owner will prevent worker exposure to lead-based paint if encountered during demolition.
29 CFR 1926.1101	Regulates asbestos exposure in workplace for abatement workers and contractors.	**Compliant**. The project owner will provide their asbestos abatement plan to the South Coast Air Quality Management District (SCAQMD) for review to ensure protection of on-site workers and contractors in the demolition phase. Condition of Certification **WASTE-5** will ensure implementation of the required preventive measures.
National Emission Standard for Hazardous Air Pollutants (NESHAP) 40 CFR 61	Protects the general public from asbestos exposure due to demolition or demolition activities.	**Compliant.** Condition of Certification **WASTE-5** will prevent public exposure to asbestos containing materials by ensuring handling as a hazardous material.
29 CFR 1926.1101	Regulates asbestos exposure in the workplace for abatement workers and contractors.	**Compliant.** The project owner will monitor airborne asbestos as necessary to ensure specific mitigation.
State		
California Health and Safety Code, Chapter 6.5, § 25100 et seq. Hazardous Waste Control Act of 1972, as amended	Creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements. The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified	**Compliant.** The project owner will recycle and/or dispose hazardous and nonhazardous wastes at facilities licensed or otherwise approved to accept the wastes. The Applicant will be required to obtain a hazardous waste generator identification number from the U.S. EPA. The project owner will be required to properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees in accordance with state and federal hazardous waste management requirements. Conditions of Certification **WASTE-1**, **WASTE-2**, **WASTE-3**, **WASTE-5**,

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
	Program Agencies (CUPAs) implement some elements of the law at the local level.	**WASTE-7**, **WASTE-9**, and **WASTE-10** require the project owner to ensure that the project site is investigated and remediated as necessary; demonstrate that project wastes are managed properly; and ensure that any future spills or releases of hazardous substances or wastes are properly reported, cleaned-up, and remediated as necessary. Conditions of Certification **WASTE-4** and **WASTE-8** require the project owner to prepare Construction Waste Management and Operation Waste Management Plans detailing the types and volumes of waste managed, recycled, and/or disposed of after generation.
Title 22, California Code of Regulations (CCR), Division 4.5 Environmental Health Standards for the Management of Hazardous Waste	Establishes requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers, prepare manifests before transporting the waste off site, and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Hazardous wastes be transported by registered hazardous waste transporters. The standards addressed by Title 22, CCR include: Identification and Listing of Hazardous Waste (Chapter 11, §§ 66261.1, et seq.) Standards Applicable to Generators of Hazardous Waste (Chapter 12, §§ 66262.10, et seq.)	**Compliant.** The project owner will recycle and/or dispose of hazardous and nonhazardous wastes at facilities licensed or otherwise approved to accept the wastes. The Applicant will obtain a hazardous waste generator identification number from the U.S. EPA. The project owner will properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees in accordance with state and federal hazardous waste management requirements. Conditions of Certification **WASTE-1, WASTE-2**, **WASTE-3**, **WASTE-4**, **WASTE-5**, **WASTE-6, WASTE-7**, **WASTE-9**, and **WASTE-10** require the project owner to ensure that the project site is investigated and remediated as necessary; demonstrate that project wastes are managed properly; and ensure that any future spills or releases of hazardous substances or wastes are properly reported, cleaned-up, and remediated as necessary. Conditions of Certification **WASTE -4** and **WASTE-8** require the Applicant to prepare a Construction Waste Management and Operation Waste

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
	Standards Applicable to Transporters of Hazardous Waste (Chapter 13, §§ 66263.10, et seq.) Standards for Universal Waste Management (Chapter 23, §§ 66273.1, et seq.) *Standards for the Management of Used Oil (Chapter 29, §§ 66279.1, et seq.) Requirements* for Units and Facilities Deemed to Have a Permit by Rule (Chapter 45, §§ 67450.1, et seq.) The Title 22 regulations are established and enforced at the state level by DTSC. Some generator standards are also enforced at the local level by CUPAs.	Management Plan detailing the types and volumes of wastes to be generated and how wastes will be managed, recycled, and/or disposed of after generation.
California Health and Safety Code, Chapter 6.11, §§ 25404–25404.9 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)	The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the five environmental and emergency response programs listed below: 1. Aboveground Storage Tank Program Business Plan Program 2. California Accidental Release Prevention (CalARP) Program 3. Hazardous Material Management Plan / Hazardous Material Inventory Statement Program 4. Hazardous Waste Generator / Tiered Permitting Program 5. Underground Storage Tank Program The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as Certified Unified Program Agencies (CUPAs). Orange County Environmental Health Division's Hazardous Materials Program is the area's CUPA.	**Compliant.** The project owner is required to recycle and/or dispose of hazardous and nonhazardous wastes at facilities licensed or otherwise approved to accept the wastes. The project owner will obtain a hazardous waste generator identification number from the U.S. EPA. The project owner will also be required to properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees in accordance with state and federal hazardous waste management requirements. Conditions of Certification **WASTE-1**, **WASTE-2**, **WASTE-3**, **WASTE-5**, **WASTE-6**, **WASTE-7, WASTE-9,** and **WASTE-10** require the project owner to ensure that the project site is investigated and remediated as necessary; demonstrate that project wastes are managed properly; and ensure that any future spills or releases of hazardous substances or wastes are properly reported, cleaned-up, and remediated as necessary. Conditions of Certification **WASTE-4** and **WASTE-8** require the project owner to prepare Construction Waste Management and Operation Waste Management Plans detailing

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
	Note: The Waste Management analysis only considers application of the Hazardous Waste Generator/Tiered Permitting element of the Unified Program. Other elements of the Unified Program may be addressed in the **Hazardous Materials Management** and/or **Worker Safety & Fire Protection** sections.	the types and volumes of wastes to be generated and how wastes will be managed, recycled, and/or disposed of after generation.
Title 27, CCR, Division 1, Subdivision 4, Chapter 1, § 15100 et seq. Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	Provides specific reporting requirements for businesses. Article 9 – Unified Program Standardized Forms and Formats (§§ 15400–15410). Article 10 – Business Reporting to CUPAs (§§ 15600–15620).	**Compliant.** Condition of Certification **WASTE-1** ensures the project owner provides relevant information to the CUPA. The project owner will also coordinate with the appropriate regulatory authority .Condition of Certification **WASTE-1** requires monitoring and reporting on the progress of remediation of the various areas of contamination located on the project site.
California Health and Safety Code, Division 20, Chapter 6.5, Article 11.9, § 25244.12 et seq. Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14).	Expands the state's hazardous waste source reduction activities. It establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (~ 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a four-year cycle, with a summary progress report due to DTSC every fourth year.	**Compliant.** Conditions of Certification **WASTE-4** and **WASTE-8** require the project owner to prepare Construction Waste Management and Operation Waste Management Plans detailing the types and volumes of wastes to be generated and how wastes will be managed, recycled, and/or disposed of after generation.
Title 22, CCR, § 67100.1 et seq. Hazardous Waste Source Reduction and Management Review.	Clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the act.	**Compliant.** With implementation of **Conditions of Certification WASTE-1** through **WASTE-9**, the project will comply with all applicable LORS regulating the management of hazardous and nonhazardous wastes during both facility construction and operation. The project owner will recycle and/or dispose hazardous and non-hazardous wastes at facilities licensed or otherwise approved to accept the wastes. The project owner will obtain a hazardous waste generator identification number from the U.S. EPA. The project owner will also properly store, package, and

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
		label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees in accordance with state and federal hazardous waste.
Title 8, CCR §1529 and §5208	Require the proper removal of asbestos containing materials in all construction work and are enforced by California Occupational Safety and Health Administration (Cal-OSHA).	**Compliant.** Condition of Certification **WASTE-5** requires that the project owner submit the SCAQMD Asbestos Notification Form to the CPM and SCAQMD for review prior to removal and disposal of asbestos. All friable asbestos (Class I) collected during demolition activities will be disposed of as hazardous waste.
Title 14, CCR, Division 7, § 17200 et seq. California Integrated Waste Management Board	Implements the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions. Chapter 3 – Minimum Standards for Solid Waste Handling and Disposal. Chapter 3.5 – Standards for Handling and Disposal of Asbestos Containing Waste. Chapter 7 – Special Waste Standards. Chapter 8 – Used Oil Recycling Program. Chapter 8.2 – Electronic Waste Recovery and Recycling.	**Compliant.** The project owner will recycle and/or dispose of hazardous and nonhazardous wastes at facilities licensed or otherwise approved to accept the wastes. The Applicant will obtain a hazardous waste generator identification number from the U.S. EPA. The project owner will properly store, package, and label all hazardous waste; use only approved transporters; prepare hazardous waste manifests; keep detailed records; and appropriately train employees in accordance with state and federal hazardous waste management requirements. **Conditions of Certification WASTE-1**, **WASTE-2**, **WASTE-3**, **WASTE-4**, **WASTE-5**, **WASTE-7**, **WASTE-9**, and **WASTE-10** require the project owner to ensure that the project site is investigated and remediated as necessary; demonstrate that project wastes are managed properly; and ensure that any future spills or releases of hazardous substances or wastes are properly reported, cleaned-up, and remediated as necessary. **Conditions of Certification WASTE-4** and **WASTE-8** require the project owner to prepare Construction Waste Management and Operation Waste Management Plans detailing the types and volumes of wastes to be generated and how wastes will be managed, recycled, and/or disposed of after generation
Local		

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
Orange County's Hazardous Materials Program Requirements.	Provides guidance for local management of solid waste and hazardous household waste. Incorporates the County's Source Reduction and Recycling Elements which specify means of reducing commercial and industrial sources of solid waste. Waste will be recycled in a manner consistent with applicable LORS. A Construction and Demolition (C&D) Waste Management Plan must be submitted and approved prior to issuance of a building permit. Ensures inspection of businesses that handle hazardous materials and/or have underground tanks. Specifies requirements regarding storage and handling of hazardous materials and wastes.	**Compliant.** The project owner will recycle and/or dispose of hazardous and non-hazardous wastes at facilities licensed or otherwise approved to accept the wastes. Conditions of Certification **WASTE-1**, **WASTE-2**, **WASTE-3**, **WASTE-4**, **WASTE-5**, **WASTE-7**, **WASTE-9**, and **WASTE-10** require the project owner to ensure that the project site is investigated and remediated as necessary; demonstrate that project wastes are managed properly; and ensure clean-up of future spills or releases of hazardous substances or wastes are properly reported, cleaned-up, and remediated as necessary.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Waste Management.

FINDINGS OF FACT

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

1. The Stanton Energy Reliability Center will generate hazardous and non-hazardous wastes during demolition, construction, and operation.
2. Condition of Certification **WASTE-1** requires the project owner to provide a Soils Management Plan.
3. Condition of Certification **WASTE-1** also requires the project owner to adequately characterize the site and complete remediation in accordance with applicable laws, ordinances, regulations, and standards under the oversight of the Energy Commission Compliance Project Manager.
4. Conditions of Certification **WASTE-2** and **WASTE-3** put procedures in place to properly identify, handle, and dispose of contaminated soil with oversight from the Energy Commission Compliance Project Manager and the California Department of Toxic Substances Control.
5. Condition of Certification **WASTE-4** requires the project owner to file a Construction and Demolition Environmental Resources Management and Recycling Plan for demolition and construction wastes generated by the project and shall submit a copy of the plan to the Orange County's Public

Works/Planning Department for review, and to the Energy Commission Compliance Project Manager for review and approval.

6. The Orange County requirement to divert or recycle a minimum of 65 percent of waste generated during construction will be achieved through implementation of Condition of Certification **WASTE-4.**

7. Condition of Certification **WASTE-5** puts procedures in place to properly identify, handle, and dispose of asbestos with oversight from the South Coast Air Quality Management District and the Energy Commission Compliance Project Manager.

8. The Stanton Energy Reliability Center will generate approximately 95 tons of solid waste during demolition and construction.

9. Before demolition and construction can begin, Condition of Certification **WASTE-6** requires the project owner to report new or temporary hazardous waste generator identification numbers from the United States Environmental Protection Agency.

10. Recyclable materials will be separated and removed to recycling facilities.

11. Non-recyclable materials will be collected by a licensed hauler and disposed of in a solid waste facility in accordance with applicable laws, ordinances, regulations, and standards.

12. Condition of Certification **WASTE-7** requires the project owner to notify the Energy Commission's Compliance Project Manager if any construction waste management related enforcement action is initiated by a regulatory agency.

13. Before operations can begin, Condition of Certification **WASTE-8** requires the project owner to develop and implement an Operation Waste Management Plan describing how the project will divert, to the maximum extent feasible, the recyclable materials that will be generated during construction and operation of the facility.

14. Approximately 10 tons per year of nonhazardous waste will be produced during operation.

15. Condition of Certification **WASTE-9** requires the project owner/operator to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with all applicable federal, state, and local requirements.

16. Nonhazardous waste that is not recycled will be disposed of in a California Class III landfill.

17. Condition of Certification **WASTE-10** ensures that SERC disposal activities will comply with the Orange County Waste and Recycling requirements.

18. There are three Class III waste disposal facilities in the project vicinity that are available to receive the project's nonhazardous solid wastes: the Prima Descheca Sanitary Landfill in San Juan Capistrano; the Olinda Alpha Sanitary Landfill in Brea; and the Frank R. Bowerman Sanitary Landfill in Irvine.

19. Hazardous wastes will be transported to Clean Harbors Buttonwillow Landfill (Class I) in Kern County and/or Waste Management Kettleman Hills Landfill (Class I, II, and III) in Kings County.

20. There is sufficient remaining capacity at Clean Harbors Buttonwillow Landfill and Chemical Waste Management Kettleman Hills Landfill to receive the project's hazardous wastes during its operating lifetime.

21. Impacts from disposal of Stanton Energy Reliability Center generated non-hazardous and hazardous wastes will have a less than significant impact on the remaining capacity of the landfills identified herein.

22. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

CONCLUSIONS OF LAW

1. Implementation of the conditions of certification contained in **Appendix A** of this Decision, and the waste management practices described in the evidentiary record, will reduce potential adverse impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.

2. Implementation of the conditions of certification contained in **Appendix A** of this Decision will ensure that the management of Stanton Energy Reliability Center project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management.

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 project-related activities 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.

The evidence contained in the record describes the biological resources in the vicinity of the Stanton Energy Reliability Center (SERC) site, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

Evidence on the topic of Biological Resources is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 12, 28, 39, 48, 49, 50, 65, 66, 68, 69, 70, 76, 80, 88, 90, 91, 92, 96, 100, 103, 104, 300, 302, 303, 304, 306, and 307.[1]

SETTING AND PROJECT DESCRIPTION

The regional setting of the SERC encompasses a 10-mile radius around the project site and off-site linear facilities, as well as associated construction parking and staging areas. The project site lies within the Los Angeles Plain subsection of the Southern California Coast Section, which is characterized by nearly level flood plains and terraces to gently sloping alluvial fans with small areas of marine terraces. Land use in the vicinity of the SERC area primarily includes light industrial areas, electricity generation and transmission facilities, and residential development. Further from the SERC site, land uses also include commercial development, scattered parks and recreational facilities, and small strips of open space. Native habitats no longer exist in the project vicinity due to the development of commercial, industrial, and residential areas as the city of Stanton has urbanized from historical ranch land.[2]

[1] 8/2/18 RT pp. 29:20 – 30:14.
[2] Ex. 300, p. 4.2-4.

The Santa Ana River (now channelized) is located approximately six miles east of the project site. The site is located on a relatively flat coastal plain of the Los Angeles Basin. Extensive urban and industrial development throughout the region has replaced most of the natural communities, which are restricted to scattered open space preserves and other protected areas.[3]

The SERC site consists of two legal parcels totaling approximately four acres.[4] Stormwater from both parcels will discharge into the Stanton Storm Channel. The Stanton Storm Channel bisects the two parcels, which is a concrete-lined drainage channel and part of Orange County's Bolsa Chica drainage system that drains into the Pacific Ocean at Huntington Harbor. The eastern parcel (1.76 acres) is previously disturbed and currently undeveloped land covered in ruderal vegetation. The western parcel (2.21 acres) is currently used for vehicle and pallet storage with both paved, unpaved, and graveled areas.[5]

The SERC is located in a region with several important ecological reserves, wetland preservation sites, and designated open space areas. The Bolsa Chica Ecological Reserve, Fairview Park, Huntington Beach Wetlands, Huntington State Beach, Peter F. Schabarum Regional County Park, Puente Hills, Seal Beach National Wildlife Refuge, and Talbert Nature Preserve are all within approximately 10 miles of the SERC site. Several of these areas may support salt marsh, dune scrub, and foredunes communities and represent some of the best remaining native habitat in the region providing important habitat for migratory birds along the Pacific Flyway as well as habitat for several special-status plants and animals. Critical habitat for the federally-listed San Diego fairy shrimp, coastal California gnatcatcher, and western snowy plover occurs in Fairview Park, Puente Hills, and Bolsa Chica Ecological Reserve, respectively.[6]

Biological resource surveys conducted in 2016 and 2017 found that the project site has no natural habitats or wetlands within the project area; the cement-lined Stanton Storm Channel bisects the site. On the west side of the storm channel, the site is paved or graveled, and on the east side of the channel the site is mostly unpaved with patches of graveled areas and ruderal grassland that is regularly mowed for fire prevention.[7] No vegetation was detected within the storm channel during the surveys. The majority of the plant species observed on site were non-native to the region with many considered to be invasive. The SERC site, off-site staging areas, worker parking areas, and associated

[3] Ex. 300, p. 4.2-5.
[4] 8/2/18 RT 36:7 – 38:19; Ex. 104.
[5] Ex. 300, p. 4.2-3.
[6] Ex. 300, pp. 4.2-5 - 8.
[7] Ex. 300, p. 4.2-9.

linear features are primarily disturbed land with relatively compacted soils and ruderal and ornamental vegetation.[8]

Due to the disturbed state of the SERC site, including the off-site linear facilities, worker parking area, off-site staging areas, and ongoing disturbance from surrounding industrial areas, this site does not provide habitat capable of supporting a diverse assemblage of wildlife. While ruderal habitats generally have lower value for wildlife, many species found in grassland and cropland habitats may tolerate the conditions of ruderal habitats such as the western fence lizard (*Sceloporus occidentalis*), Brewer's blackbird (*Euphagus cyanocephalus*), lesser goldfinch (*Spinus psaltria*), and California ground squirrel (*Otospermophilus beecheyi*); however, none of these species were observed during surveys of the SERC site.[9]

Surveyors documented the presence of common bird species including the common raven, barn swallow, house finch, mourning dove, northern mockingbird, white crowned sparrow, rock pigeon, Brewer's blackbird (*Euphagus cyanocephalus*), song sparrow (*Zonotrichia leucophrys*), black phoebe, California towhee (*Meozone crissalis*), and house sparrow. The surveyors documented eight inactive nests. Seven inactive nests were located in the ornamental trees located along the west and south barriers of the SCE Barre Peaker Plant, which is east of the SERC site, and one inactive nest was located in a bougainvillea (*Bougainvillea spectabillis*) along the southern fence line. One red-tailed hawk (*Buteo jamaicensis*) was observed perching at the SCE Barre Substation and adjacent towers; however, no raptor nests were observed on any of the towers in or adjacent to the survey area.[10]

Biological Resources Table 1 identifies the occurrences of special-status species reported in the California Natural Diversity Database and California Native Plant Society's Inventory of Rare and Endangered Plants that have the potential to occur in the habitats near the SERC site; however, the majority of the species are not likely to occur on site.[11]

[8] Ex. 300, p. 4.2-10.
[9] Ex. 300, p. 4.2-12.
[10] Ex. 300, p. 4.2-13.
[11] Ex. 300, p. 4.2-14.

Biological Resources Table 1
Special-status Species Known to Occur or Potentially Occurring in the SERC Area and Vicinity

Common Name (*Scientific Name*)	Conservation Status Fed/State/ CRPR/G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
PLANTS		
Chaparral sand-verbena (*Abronia villosa* var. *aurita*)	__/__/1B.1/ G5T3T4/S2	Not Likely to Occur
Ventura Marsh milk-vetch (*Astragalus pycnostachyus var. lanosissimus*)	FE/SE/1B.1/ G2T1/S1	Not Likely to Occur
Parish's brittlescale (*Atriplex parishii*)	__/__/1B.1/ G1G2/S1	Not Likely to Occur
Davidson's saltscale (*Atriplex serenana* var. *davidsonii*)	__/__/1B.2/ G5T1/S1	Not Likely to Occur
Lewis' evening-primrose (*Camissoniopsis lewisii*)	__/__/3/G4/S4	Not Likely to Occur
Southern tarplant (*Centromadia parryi* ssp. *australis*)	__/__/1B.1/ G3T2/S2	Low
Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*)	FE/SE/1B.2/ G4?T1/S1	Not Likely to Occur
Southern California Black Walnut (*Juglans californica*)	_/_/4.2/G3/S3	Low
Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*)	__/__/1B.1/ G4T3/S2.1	Not Likely to Occur
Mud nama (*Nama stenocarpum*)	__/__/2B.2/ G4G5/S1S2	Not Likely to Occur
Coast woolly-heads (*Nemacaulis denudata* var. *denudata*)	__/__/1B.2/ G3G4T3?/ S2.2	Not Likely to Occur
California Orcutt grass (*Orcuttia californica*)	FE/SE/1B.1/G1/S1	Not Likely to Occur
South coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*)	__/__/3.2/G5?T3/S3	Not Likely to Occur
Brand's star phacelia (*Phacelia stellaris*)	__/__/1B.1/ G1/S1	Not Likely to Occur
Salt spring checkerbloom (*Sidalcea neomexicana*)	__/__/2B.2/ G4?/S2S3	Not Likely to Occur
Estuary seablite (*Suaeda esteroa*)	__/__/1B.2/ G3/S2	Not Likely to Occur
San Bernardino aster (*Symphyotrichum defoliatum*)	__/__/1B.2/ G2/S2	Low

Common Name (*Scientific Name*)	Conservation Status Fed/State/ CRPR/G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
WILDLIFE		
Invertebrates		
Crotch bumble bee (*Bombus crotchii*)	__/__/ G3G4/S1S2	Not Likely to Occur
Western tidal-flat tiger beetle (*Cicindela gabbii*)	__/SA/G4/S1	Not Likely to Occur
Sandy beach tiger beetle (*Cicindela hirticollis gravida*)	__/SA/G5T2/S1	Not Likely to Occur
Western beach tiger beetle (*Cicindela latesignata latesignata*)	__/SA/G4T1T2/S1	Not Likely to Occur
Senile tiger beetle (*Cicindela senilis frosti*)	__/SA/G4T1/S1	Not Likely to Occur
Monarch Butterfly – California overwintering population (*Danaus plexippus* pop. 1)	__/__/G4T2T3/S2S3	Low
Wandering (=saltmarsh) skipper (*Panoquina errans*)	__/__/ G4G5/S2	Not Likely to Occur
Dorothy's El Segundo Dune weevil (*Trigonoscuta dorothea dorothea*)	__/SA/G1T1/S1	Not Likely to Occur
Mimic tryonia (=California brackishwater snail) (*Tryonia imitator*)	__/SA/G2G3/S2S3	Not Likely to Occur
Reptiles and Amphibians		
Pacific green sea turtle (*Chelonia mydas*)	FT/__/G3/S1	Not Likely to Occur
Western pond turtle (*Emys marmorata*)	__/SSC/G3G4/S3	Low
Coast horned lizard (*Phrynosoma blainvillii*)	__/SSC/G4G5/S3S4	Not Likely to Occur
Fish		
Santa Ana sucker (*Castostomus santaanae*)	FT/__/G1/S1	Not Likely to Occur
Birds		
Tricolored blackbird (*Agelaius tricolor*)	BCC/SSC/G2G3/S2	Not Likely to Occur
Great blue heron – Nesting Colony (*Ardea herodias*)	__/__/G5/S4	Low
Burrowing owl (*Athene cunicularia*)	BCC/SSC/G4/S2	Low

Common Name (*Scientific Name*)	Conservation Status Fed/State/ CRPR/G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Ferruginous hawk (*Buteo regalis*)	BCC/WL/G4/S3S4	Not Likely to Occur
Swainson's hawk (*Buteo swainsoni*)	BCC/ST/G5/S3	Low
Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*)	BCC/SCC/G5T3Q/S3	Not Likely to Occur
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT/BCC/SSC/ G4T3/S2	Not Likely to Occur
Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*)	FT/BCC/SE/G5T2T3/ S1	Not Likely to Occur
American peregrine falcon (*Falco peregrinus anatum*)	FD/SD/G4T4/S3S4	Not Likely to Occur
Yellow-breasted chat (*Icteria virens*)	__/SSC/ G5/S3	Not Likely to Occur
Coastal California gnatcatcher (*Polioptila californica californica*)	FT/SSC/ G3T2/S2	Not Likely to Occur
Belding's savannah sparrow (*Passerculus sandwichensis beldingi*)	__/SE/G5T3/S3	Not Likely to Occur
Light-footed clapper rail (*Rallus longirostris levipes*)	FE/SE, FP/__/ G5T1T2/S1	Not Likely to Occur
Bank swallow (*Riparia riparia*)	__/ST/__/ G5/S2S3	Not Likely to Occur
Black skimmer (*Rynchops niger*)	BCC/SSC/__/ G5/S1S3	Not Likely to Occur
Yellow warbler (*Setophaga petechial*)	BCC/SCC/__/ G5/S3S4	Not Likely to Occur
California least tern (*Sternula antillarum browni*)	FE/SE, FP/ G4T2T3Q/S2S3	Not Likely to Occur
Least Bell's vireo (*Vireo bellii pusillus*)	FE/SE/__/ G5T2/S2	Not Likely to Occur
Mammals		
Mexican long-tongued bat (*Choeronycteris Mexicana*)	__/SSC/ G4 /S1	Not Likely to Occur
Western mastiff bat (*Eumops perotis californicus*)	__/SSC/ G5T4/S3?	Low
Silver-haired bat (*Lasionycteris noctivagans*)	__/SA/__/ G5/S3S4	Not Likely to Occur
Western yellow bat (*Lasiurus xanthinus*)	__/SSC/G5/S3	Not Likely to Occur
South coast marsh vole (*Microtus californicus stephensi*)	__/SSC/G5T1T2/ S1S2	Not Likely to Occur

Common Name (*Scientific Name*)	Conservation Status Fed/State/ CRPR/G-Rank/S-Rank	Potential for Occurrence in Project Impact Area
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	__/SSC/G4/S2S3	Not Likely to Occur
Southern California saltmarsh shrew (*Sorex ornatus salicornicus*)	__/SSC/G5T1?/S1	Not Likely to Occur

Sources: Ex. 300, pp. 4.2-14 – 4.2-18.

Jurisdictional Waters and Wetlands

There are no creeks, drainages, or wetlands on or adjacent to the project site or off-site linear facilities, staging areas, or worker parking areas. However, there are two waters under the jurisdiction of the United States Army Corps of Engineers (USACE) that occur at the SERC site and along the linear facilities: the Stanton Storm Channel and the Carbon Creek Channel. The SERC site is bisected by the Stanton Storm Channel, which drains into the Bolsa Chica Channel that ultimately flows into Huntington Harbor. The Stanton Storm Channel is composed of reinforced concrete and engineered earth, which is maintained by the Orange County Public Works Department. The Carbon Creek Channel is located approximately 1.6 miles north from the SERC site and the Applicant proposes to have the new natural gas pipeline cross this waterway. Carbon Creek flows from the foothills into Coyote Creek and joins the San Gabriel River to ultimately drain into Anaheim Bay. The Carbon Creek Channel is a flood protection work constructed by the USACE. It is maintained by the Orange County Flood Control District and is composed of reinforced concrete and engineered earth.[12]

For a general project description including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

A project will result in significant impacts to biological resources under the California Environmental Quality Act (CEQA) if it would result in:

- a substantial adverse effect[13] to wildlife species that are federally-listed or state listed or proposed to be listed, and a substantial adverse effect to wildlife species of special

[12] Ex. 300, pp. 4.2-19 – 4.2-20.
[13] Cal. Pub. Res. § 21068; Cal. Code. Regs., tit. 14, § 15064.

concern to the California Department of Fish and Wildlife (CDFW), candidates for state listing, or animals fully protected in California;

- a substantial adverse effect to plant species considered by CDFW, the U.S. Fish and Wildlife Service (USFWS), or the California Native Plant Society (CNPS) to be rare, threatened, or endangered in California or with strict habitat requirements and narrow distributions, and a substantial impact to a sensitive natural community (i.e., a community that is especially diverse, regionally uncommon, or of special concern to local, state, and federal agencies);
- substantial adverse effects on habitats that serve as breeding, foraging, nesting, or migrating grounds, or that are limited in availability or that serve as core habitats for regional plant and wildlife populations;
- substantial interference with the movement of any native resident or migratory fish or wildlife species with established native resident or migratory wildlife corridors, or that impede the use of native wildlife nursery sites;
- a substantial adverse effect on important riparian habitats or wetlands and any other "Waters of the U.S." or state jurisdictional waters; or
- a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.[14]

Construction and Operations Impacts and Mitigation

General

The project owner must employ a Designated Biologist and Biological Monitor(s) to ensure implementation of the mitigation measures described below to avoid or minimize potentially adverse impacts to the sensitive biological resources (plants, wildlife, habitats, and jurisdictional waters) described in **Biological Resources Table 1**. The selection criteria and minimum qualifications of the Designated Biologist and Biological Monitor(s) are described in Conditions of Certification **BIO-1** (Designated Biologist Selection) and Condition of Certification **BIO-3** (Biological Monitor Selection). The duties and authority of the Designated Biologist and Biological Monitor are described in Condition of Certification **BIO-2** (Designated Biologist Duties) and Condition of Certification **BIO-4** (Designated Biologist and Biological Monitor Authority). The Designated Biologist and/or Biological Monitor is responsible, in part, for developing and implementing the Worker Environmental Awareness Program (WEAP) (see Condition of Certification **BIO-5**), which

[14] Ex. 300 p. 4.2-21; see also CEQA Guidelines, App. G, §IV.

is a mechanism for training the project construction and maintenance personnel as well as project site visitors regarding protection of sensitive biological resources and the consequences of non-compliance. Condition of Certification **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) provides for the preparation of the BRMIMP, which consolidates all project resource mitigation, monitoring, and compliance measures, as well as other information necessary to ensure compliance with, and effectiveness of, all impact avoidance, minimization, and mitigation measures.[15]

Regionally unique habitat or habitat capable of supporting special-status species is not present within the SERC area. Construction activities require the removal of weedy vegetation. New plantings as part of a visual screening landscape plan, will replace ruderal vegetation along the north and east boundaries of the SERC site with drought-tolerant species that include evergreen trees, medium-size shrubs, and ornamental grasses (refer to the **VISUAL RESOURCES** section of this Decision for additional information). Significant impacts to native vegetation will not occur and no mitigation is proposed.[16]

The SERC area provides marginally suitable nesting habitat for a variety of common bird species. Birds could nest in the ruderal vegetation on site as well as the scattered trees and shrubs along the perimeter and adjacent to the SERC site. The Migratory Bird Treaty Act (MBTA) and California Fish and Game Code protect nestlings and eggs of ground-nesting birds or birds nesting on scattered trees that would be vulnerable to impacts during project construction. If initial site grading or vegetation removal were to occur during nesting season, then it could destroy bird nests including eggs or nestling birds. Condition of Certification **BIO-8** (Preconstruction Nest Surveys and Impacts Avoidance and Minimization Measures for Breeding Birds) requires a survey for birds in advance of any work conducted between February 15, and August 31, 2019, and establishment of a 500-foot, no-disturbance buffer if a nest is identified.[17] Additionally, general measures presented in Condition of Certification **BIO-7** (Impact Avoidance and Minimization Measures) avoid and minimize impacts to nesting birds. With implementation of Conditions of Certification **BIO-7** and **BIO-8**, significant impacts to nesting birds will not result from proposed project construction and site clearance activities and the project will comply with the MBTA and California Fish and Game codes.

Wildlife can become entrapped in open trenches during construction, especially if trenches remain open during inactive construction periods. Condition of Certification **BIO-**

[15] Ex. 300, p. 4.2-22.
[16] Ex. 300, pp. 4.2-22 - 4.2-23.
[17] Ex. 300, p. 4.2-24.

7 requires exclusion measures for open trenches (e.g., fencing or covering), inspection of trenches prior to resuming construction activities each day, and installation of escape ramps so that animals that fall in the trench could escape. Implementation of this measure will mitigate adverse impacts to wildlife from entrapment.[18]

Existing conditions in the SERC area are not likely to support any special-status plants, and none has been recorded at either the SERC site, off-site staging or worker parking areas, or along the generator tie-line route within the SCE Barre Substation property. The SERC site and the off-site laydown area and off-site worker parking areas are either within existing paved areas or in vacant and previously developed parcels with no natural habitat. Ongoing maintenance of undeveloped areas, including mowing and vegetation removal for fire prevention, would prevent any rare plant seedlings that colonize on the site from surviving and establishing a population. Therefore, direct impacts to special-status plants from construction will not likely occur.[19]

Similarly, there are no special-status wildlife species expected to occur at the project site or off-site worker parking and staging areas, and none are expected to forage, roost, or breed in adjacent areas. Therefore, direct and indirect impacts to special-status wildlife from construction or associated site clearance will not occur and no mitigation is imposed.[20]

A Closure Plan will be prepared by the project owner and approved by the Energy Commission compliance project manager prior to the commencement of closing the facility. Facility closure requirements are discussed in more detail in the **COMPLIANCE MONITORING PLAN** section. Facility closure mitigation measures will also be included in the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) prepared by the project owner and described in Condition of Certification **BIO-6**.[21]

Construction Impacts to Jurisdictional Waters

Indirect impacts to biological resources may result if construction contaminants, sediment, or untreated storm water effluent from the SERC area enter the Stanton Storm Channel or Carbon Creek Channel. The Applicant has committed to relevant procedures and best management practices for sedimentation prevention to avoid potential water quality impacts from construction in accordance with the SERC's Storm Water Pollution Prevention Plan (SWPPP) and General Construction National Pollutant Discharge Elimination System (NPDES) Permit, which is a requirement of Condition of Certification

[18] Ex. 300, p. 4.2-24.
[19] Ex. 300, pp. 4.2-24 - 4.2-25.
[20] Ex. 300, p. 4.2-25.
[21] Ex. 300, p. 4.2-45.

SOIL&WATER-1. Please refer to the **SOIL AND WATER RESOURCES** section of this Decision for additional information.[22]

Two bridges will cross the Stanton Storm Channel as part of the SERC; a vehicle bridge and a utility bridge. Impacts to biological resources located downstream could occur if work was conducted in or if debris entered the Stanton Storm Channel during construction. In addition, the natural gas pipeline will be located under the Carbon Creek Channel on Dale Avenue. Jack and bore drilling under the channel will be necessary to install the natural gas line underground for the entire route. Impacts could occur if jack and bore drilling activities result in drilling fluid inadvertently escaping and moving through the soil into the channels. Prior to construction, the Applicant must contact the USACE Engineering Division to determine whether a section 408 permit is required and provide the CPM with copies of the applicable permits or agreements, pursuant to Condition of Certification **SOIL&WATER-7**. USACE would cover associated clean-up work under Nationwide Permit 12, which authorizes temporary structures, fills, and work necessary for the remediation of inadvertent returns of drilling fluids to waters of the United States through sub-soil fissures or fractures that might occur during horizontal directional drilling activities conducted for the purpose of installing or replacing utility lines.[23]

Bridge construction will not be conducted in, over, or under a navigable water of the United States because the Stanton Storm Channel is not a navigable water or tidally influenced. Therefore, this activity would not be regulated under section 10 of the Rivers and Harbors Act. Bridge construction will not result in a discharge of dredged or fill material into waters of the United States (section 404) as no ground disturbance will take place within the Stanton Storm Channel. The evidence shows that a 404 permit from the USACE is not needed for either the vehicle or utility bridge installation.[24]

The Applicant provided a completed CDFW Form 2023 for the Utility and Vehicle Bridge Crossing and a completed CDFW Form 2023 for the Carbon Creek Channel Crossing.[25] CDFW informed Energy Commission staff that while the SERC would be subject to the notification requirement in Fish and Game Code section 1602, a Lake or Streambed Alteration Agreement would not be required.[26]

In order to minimize impacts to Carbon Creek Channel, Condition of Certification **BIO-9** requires the Designated Biologist or Biological Monitor to visually inspect the drill path, monitor the water body for evidence of release, examine the drilling fluid pressures and

[22] Ex. 300, p. 4.2-25.
[23] Ex. 300, pp. 4.2-25 - 4.2-26.
[24] Ex. 300, p. 4.2-26.
[25] Ex. 79.
[26] Ex. 300, p. 4.2-26.

return flows, approve drilling/boring setup locations, and verify the perimeter of the work site is adequately flagged during jack and bore drilling under the channel to avoid an accidental release of drilling fluid into the channel. If any of the boring operations lead to discharge of drilling fluid or the fluid pressures and return-flows drop, the Designated Biologist or Biological Monitor will order all equipment to be shut down. The Applicant would then need to apply for Nationwide Permit 12 coverage for any remediation work, as USACE does not issue them prior to being required. In addition, see Condition of Certification **SOIL&WATER-7**, which requires the development and implementation of a drilling fluid discharge plan that will specify the emergency and remedial measures to protect Carbon Creek Channel in the event drilling mud releases to the creek or creek bed.[27]

We find that with implementation of the measures discussed in this subsection, both (1) indirect and direct water quality impacts and (2) associated impacts to biological resources located downstream in adjacent jurisdictional waters will be less than significant.

Noise

Construction and associated site clearance noise is expected to be a constant noise source lasting approximately 14 months. Noise from construction and operation activities could discourage wildlife from foraging and nesting near the SERC area, due to interference with communication, disturbance or disruption of activities, or startling from loud noises.

Avian species are most likely to be adversely impacted by construction noise. Noise may affect birds in several ways, including reducing reproductive success; raising the level of stress hormones; interfering with sleep; causing permanent injury to the auditory system; and interfering with acoustic communication by masking important sounds. Site clearance and construction will generate sudden or loud startling noises, and could result in flushing birds. Flushing of nesting birds could increase the risk of predation or cause nest failure if birds repeatedly leave the nest and eggs are not properly incubated, or eggs or nestlings are knocked from the nest by a flushing parent. In addition, many bird species rely on vocalizations during the breeding season to attract a mate within their territory, and noise from construction and associated site clearance activities could adversely affect nesting behavior and other activities.[28]

[27] Ex. 300, p. 4.2-26.
[28] Ex. 300, pp. 4.2-27 - 4.2-28.

There are no special-status species known or potentially occurring on the SERC site, off-site worker parking area, off-site staging areas, along the linear facilities, or in adjacent areas that may be affected by construction and associated site clearance noise. However, common wildlife such as birds protected by the MBTA and California Fish and Game Code[29] have the potential to nest on the ground or in ruderal vegetation and trees in and adjacent to the SERC area. Construction activities will typically occur between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays and will cause a short-term, temporary increase in the ambient noise level.[30]

Pre-construction nesting bird surveys and monitoring nesting activities as part of construction and associated site clearance activities will determine whether nests could potentially be disturbed. If an active nest of a species protected under the MBTA and California Fish and Game Code is found, any construction activity would be limited within an appropriately sized buffer around the nest, which would be monitored by a qualified biologist to avoid impacts to the nest.[31]

Condition of Certification **NOISE-6** (Construction Noise Restrictions) restricts noisy equipment and limits the hours of construction. It ensures that construction work will be performed in a manner that prohibits excessive noise and reduces the potential for noise complaints as much as practicable. It also requires haul trucks and other engine-powered equipment be equipped with adequate mufflers and other state-required noise attenuation devices.[32]

The project owner must complete pre-construction nesting bird surveys under Condition of Certification **BIO-8**, (Pre-construction Nest Surveys and Impact Avoidance and Minimization Measures for Breeding Birds). With implementation of Condition of Certification **BIO-8** and Condition of Certification **NOISE-6**, we find impacts to nesting birds will be less than significant.

Birds at the site are expected to be acclimated to the noise of the nearby industrial and commercial facilities, the adjacent roads, the Union Pacific Railroad, and human development noise created by residential uses to the northwest and southeast of the site. As described in more detail in the **NOISE AND VIBRATION** section of this Decision, ambient daytime noise levels at the sound monitoring locations, LT-1 and LT-2, are estimated to be 68 dBA and 59 dBA, respectively. Operational noise levels at LT-1 and LT-2 will be 49 dBA and 43 dBA, respectively. LT-1 is near the SCE Barre Substation.

[29] California Fish and Game Code sections 3503 and 3513.
[30] Ex. 300, p. 4.2-28.
[31] Ex. 300, p. 4.2-23.
[32] Ex. 300, p. 4.2-29.

LT-2 is in a residential area near the northwestern edge of the SERC site. While birds could nest closer to the SERC site than LT-2, the evidence indicates that since the operational noise level will be less than the ambient noise level, SERC operational noise impacts to breeding birds will be less than significant. [33]

Condition of Certification **NOISE-4** (Operational Noise Restrictions and Survey) requires the SERC to meet the Stanton Noise Ordinance limit of 50 dBA during operations. With implementation of this condition, impacts associated with operational noise will be less than significant.

Lighting

Construction and demolition activities will typically occur between 7:00 a.m. and 8:00 p.m. Monday through Saturday; however, some critical and time-sensitive construction activities could continue past 8:00 p.m. into a nightshift. During some construction periods and the startup phase, work could continue for 24 hours per day, seven days a week. Bright lighting at night could disturb the nesting, foraging, or mating activities of wildlife in nearby undeveloped areas such as the ruderal grassland under the SCE Barre-Ellis 220-kV transmission line corridor, and make wildlife more visible to predators. Night lighting could be disorienting to migratory birds and, if placed on tall structures, may increase the likelihood of collision. Although existing operations at SCE's Barre Substation and Barre Peaker Unit, industrial and commercial facilities adjacent to the SERC site, and nearby vehicle traffic provide an elevated ambient level of lighting to which local species have acclimated, potentially significant impacts to sensitive wildlife from increased night lighting could occur.[34]

Condition of Certification **VIS-3** (Site Lighting - Project Construction and Commissioning) requires temporary night-construction lighting to be focused and directed on the work areas and away from nearby residences (refer to **Appendix A** of this Decision for the full text of this condition). With implementation of this condition, impacts to wildlife from construction night lighting will be less than significant.[35]

SERC operational lighting will be designed in accordance with the Illuminating Engineering Society of North America and meet safety standards in compliance with the Occupational Safety and Health Administration. Lighting will be installed to provide security and ambient general approach lighting for the SERC site. Control equipment enclosures and operator interface locations will utilize motion-sensitive directional lights.

[33] Ex. 300, p. 4.2-31.

[34] Ex. 300, pp. 4.2-29 - 4.2-30.

[35] Ex. 300, p. 4.2-30.

There will be manually controlled lighting for operation and maintenance activities at other locations on the SERC site.

Operational lighting for the SERC will be shielded and/or directed downward to minimize glare or spillover onto adjacent properties. Condition of Certification **VIS-4** (Lighting Management Plan – Project Operation) will minimize backscatter of light to the sky and ensure that lighting does not obtrude beyond the project site (refer to the **Appendix A** section of this Decision for the full text of this condition). With implementation of this condition, we find impacts to wildlife from operational night lighting will be less than significant.[36]

Invasive Weeds

The spread of invasive weeds destroys wildlife habitat and forage, threatens endangered species and native plants, and increases soil erosion and groundwater loss. Invasive weeds can easily colonize areas of disturbance and the spread of invasive plants is a major threat to biological resources because non-native plants can displace native plants and supplant wildlife foods that are important to herbivorous species, resulting in overall habitat degradation. Construction activities and soil disturbance could introduce new invasive weeds to areas adjacent to the SERC site or areas downstream via the Stanton Storm Channel, and could further spread weeds already present in the project vicinity. The Stanton Storm Channel drains into the Bolsa Chica Channel, which flows into Huntington Harbour and the Seal Beach National Wildlife Refuge on the US Naval Weapons Station. The Refuge is part of Anaheim Bay, which flows to the ocean. Huntington Harbour also connects with the Bolsa Chica Ecological Reserve, which also flows to the ocean. These protected areas support special-status species and other native plants and wildlife.[37]

No substantial invasive weed populations exist within the SERC area as it is currently maintained by regular mowing. However, populations of foxtail brome and yellow star thistle were detected during surveys on both parcels of the SERC site and at natural gas line staging areas. To avoid and minimize the spread of existing weeds and the introduction of new ones, Condition of Certification **BIO-7** includes a number of weed prevention measures, including the requirement that vegetation and ground disturbance be limited to the minimum required for construction of the project, and that ingress/egress be limited along defined routes. Further, straw bales and other sediment control features will be required to be weed-free, and invasive non-native species will be prohibited from being used as landscape plantings. Storm-water runoff will be contained and excluded

[36] Ex. 300, p. 4.2-32.
[37] Ex. 300, p. 4.2-30.

from draining to adjacent habitats; thereby preventing weed propagules from washing into the storm channel (pursuant to Condition of Certification **SOIL&WATER-1**). Implementation of Conditions of Certification **BIO-7** and **SOIL&WATER-1** will reduce potential impacts from the introduction and spread of invasive weeds into downstream sensitive habitats to less than significant.[38]

Storm-water Runoff

There are no creeks, drainages, or wetlands on the SERC site, off-site laydown area, or off-site parking areas. However, storm channels that bisect the site could be impacted from storm-water runoff during construction and associated site clearance if appropriate measures are not taken to prevent water from draining off site. Toxic materials washed from the site into downstream aquatic resources can injure or kill wildlife and vegetation, and degrade habitat. During construction and associated site clearance, storm water will discharge to the Stanton Storm Channel via an existing NPDES permit.[39]

The Applicant will prepare a Storm Water Pollution Prevention Plan (SWPPP) prior to construction and employ best management practices (BMP) to prevent sediment from entering watercourses during and after construction. SERC BMPs include installation of silt fencing, berms, straw bales, and detention basins to control runoff from construction and associated site clearance areas. Sediment barriers such as straw bales or silt fences will be installed to slow runoff and trap sediment. Condition of Certification **SOIL&WATER-1** requires a site-specific construction SWPPP. With implementation of these measures, the SERC's impacts to biological resources from storm-water runoff will be less than significant.[40]

Storm water runoff from open areas on both parcels of the SERC site during operation will also be discharged into the Stanton Storm Channel. Storm water runoff will be conveyed in accordance with the existing statewide NPDES permit for construction storm water and in compliance with the existing Orange County NPDES permit for discharges to the municipal storm-water system. For more information on water quality impacts, see the **SOIL AND WATER RESOURCES** section of this Decision. Condition of Certification **BIO-7** requires BMPs from the project SWPPP to be implemented during all phases of the SERC to control storm-water runoff, which will result in less than significant impacts to biological resources from storm-water runoff.[41] Avian Collision and Electrocution

[38] Ex. 300, p. 4.2-33.
[39] Ex. 300, p. 4.2-31.
[40] Ex. 300, p. 4.2-32.
41 Ex. 300, p. 4.2-33.

Birds can collide with transmission lines, exhaust stacks, and other structures associated with the proposed project causing injury or mortality. Collision rates generally increase in low-light conditions, during inclement weather, during strong winds, and during panic flushes (when birds are startled by a disturbance or are fleeing danger). Collisions are more probable near wetlands, within valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths.[42]

The SERC site is in a highly urbanized area adjacent to existing industrial and commercial facilities, including SCE's Barre Peaker Unit and Barre Substation, and existing transmission lines, including the SCE Barre-Ellis 220-kV transmission line, allowing resident birds to acclimate to these current conditions. In addition, there are no wetlands adjacent to the SERC site or other known concentration areas for resident and migratory birds. The nearest significant ecological area that attracts a high concentration of resident and migratory birds is Seal Beach, which is seven miles southwest of the SERC site. These factors greatly reduce the potential for direct impacts through avian collision with SERC structures.[43]

Although collisions may occur, it is not likely that avian collisions will increase with construction and operation of the SERC. The two 70-foot-tall exhaust stack enclosures will be the tallest features of the SERC. Although slightly taller than some of the adjacent buildings, the SERC exhaust stack enclosures will be similar in size to nearby energy facilities, such as the SCE Barre Peaker Unit across Dale Avenue and, therefore, are not expected to appreciably increase the potential for avian collisions.[44]

The SERC will interconnect to the regional electrical grid via a new approximately 0.35-mile underground transmission line.[45] Therefore, direct and indirect impacts to birds from collision with the transmission structures will be avoided and will be less than significant.

Air Emissions – Nitrogen Deposition

Nitrogen deposition is the input of nitrogen oxide (NO_x)- and ammonia (NH_3)-derived pollutants, primarily nitric acid (HNO_3), from the atmosphere to the biosphere. Nitrogen deposition sources are primarily vehicle and industrial emissions. Mechanisms by which nitrogen deposition can lead to impacts on sensitive species include direct toxicity, changes in species composition among native plants, and enhancement of invasive species. The increased dominance and growth of invasive annual grasses is especially prevalent in low-biomass vegetation communities that are naturally nitrogen-limited. Such

[42] Ex. 300, pp. 4.2-32 - 4.2-33.
[43] Ex. 300, p. 4.2-32.
[44] Ex. 300, p. 4.2-33.
[45] *Id*.

vegetation communities that occur within 10 miles of the SERC project include intertidal salt marshes, intertidal wetlands, freshwater marsh/wetlands, coastal dunes, chaparral, coastal sage scrub, oak woodlands, desert scrub, and annual grassland. Some of these vegetation types support critical habitat for federally-listed species.[46]

The potential effects of nitrogen deposition from the SERC would occur within a six-mile radius of the site. Evidence shows that by the time a power plant's air emissions have traveled this distance, concentrations of NOx- and NH3- derived pollutants become indistinguishable from background concentrations, and their impacts would be considered less than significant. There are no sensitive natural communities listed in CDFW's California Natural Diversity Database or any designated critical habitat for federally-listed species that are considered sensitive to nitrogen deposition within the six-mile radius of the SERC site. Therefore, nitrogen deposition impacts from the SERC will be less than significant.[47]

With the implementation of the relevant conditions of certification in the **NOISE AND VIBRATION, SOIL & WATER,** and **AIR QUALITY** sections of this Decision, we find that potential impacts of the SERC on special-status species during operation are mitigated to a level below significant.

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[48]

The SERC site provides no habitat for special-status species; however, adjacent ruderal areas may provide nesting habitat for birds protected under the MBTA. The SERC site is located on partially-developed and previously-developed land in an industrial area without significant biological resources nearby. The projects identified in the master cumulative project list are too far in distance from the SERC and will not result in impacts that overlap spatially or geographically. No other projects with similar indirect cumulative effects were identified within one mile of the SERC site and the SERC impacts are not cumulatively significant with mitigation required for effects to breeding birds and from lighting, invasive weeds, or storm-water runoff (Conditions of Certification **BIO-1** through **BIO-9**).[49] We find

[46] Ex. 300, p. 4.2-34.

[47] Ex. 300, p. 4.2-34.

[48] Cal. Code Regs., tit. 14, §§ 15130, 15355.

[49] Ex. 300, pp. 4.2-34 - 4.2-35.

that the SERC will not contribute cumulatively considerable impacts to biological resources.

CONCLUSIONS REGARDING ENVIRONMENTAL IMPACTS

Based on the evidence, we find that the SERC will have no direct, indirect or cumulative impacts on federal or state listed plant or wildlife species, or habitat, including riparian habitat, wetland or jurisdictional waters. Further, we find that the SERC will not interfere with the movement of migratory birds or wildlife, nor will it conflict with any habitat conservation plan.

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

The SERC must comply with LORS that address state and federally-listed species, as well as other sensitive biological resources. The evidence shows that development of the SERC does not conflict with provisions of an adopted Habitat Conservation Plan (HCP), Natural Community Conservation Plan (NCCP), or other approved local, regional, or state habitat conservation plan because there are no applicable HCPs or NCCPs for this area. **Biological Resources Table 2** summarizes the SERC's consistency with applicable LORS.[50]

Biological Resources Table 2
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Federal		
Endangered Species Act (Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq.)	Designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat. Take of federally-listed species as defined in the Endangered Species Act is prohibited without incidental take authorization, which may be obtained through Section 7 consultation (between federal agencies) or Section 10 Habitat Conservation Plan. The administering agencies are the USFWS the National Oceanic Atmospheric Administration (NOAA), and the National Marine Fisheries Service.	**Compliant.** Construction and operation of the SERC will not result in any impacts to federally-listed species or their critical habitat.

[50] Ex. 300, p. 4.2-35.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26))	Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the U.S. Army Corps of Engineers (USACE) for a discharge from dredged or fill materials into Waters of the U.S., including wetlands. Section 401 requires a permit from a regional water quality control board for the discharge of pollutants.	**Compliant.** Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are on site during construction to ensure no activities take place within the Stanton Storm Channel. Condition of Certification **BIO-9** requires a qualified biologist to monitor all activities pertaining to drilling under the Carbon Creek Channel.
Migratory Bird Treaty (Title 16, United States Code, sections 703 through 711)	Makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird including nests with viable eggs). The administering agency is the USFWS.	**Compliant.** Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are available during construction. Condition of Certification **BIO-8** requires pre-construction nest surveys, protective buffers, and monitoring if nests are found. The project owner is required to implement a WEAP (**BIO-5**) to educate workers about compliance with environmental regulations, including the MBTA.
State		
California Endangered Species Act of 1984 (Fish and Game Code, sections 2050 through 2098)	Protects California's rare, threatened, and endangered species. The administering agency is CDFW.	**Compliant.** Construction and operation of the SERC will not result in any impacts to state listed rare, threatened, and endangered species. Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are available during construction. Condition of Certification **BIO-8** requires pre-construction nest surveys, protective buffers, and monitoring if nests are found. The project owner is required to implement a WEAP (**BIO-5**) to educate workers about compliance with environmental regulations.
California Code of Regulations Title 14, sections 670.2 and 670.5	Lists the plants and animals of California that are declared rare, threatened, or endangered. Take of state listed species is prohibited without an incidental take authorization, according to Section 2081 or 2080.1 of the Endangered Species Act. The administering agency is CDFW.	**Compliant.** Construction and operation of the SERC will not result in any impacts to state listed rare, threatened, and endangered species. Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are available during construction. Condition of Certification **BIO-8** requires pre-construction nest surveys, protective buffers, and monitoring if nests are found. The project owner is required to implement a WEAP (**BIO-5**) to educate workers about compliance with environmental regulations.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Fully Protected Species (Fish and Game Code sections 3511, 4700, 5050, and 5515); Title 14, California Code of Regulations, section 670.7.	Designates certain species as fully protected and prohibits the take of such species unless for scientific purposes (see also Title 14, California Code of Regulations, section 670.7). The administering agency is CDFW.	**Compliant.** Construction and operation of the SERC will not result in any impacts to state listed rare, threatened, and endangered species. Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are available during construction. Condition of Certification **BIO-8** requires pre-construction nest surveys, protective buffers, and monitoring if nests are found. The project owner is required to implement a WEAP (**BIO-5**) to educate workers about compliance with environmental regulations.
Fish and Game Code section 3503	Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird. The administering agency is CDFW.	**Compliant.** Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are available during construction. Condition of Certification **BIO-8** provides for pre-construction nest surveys, protective buffers, and monitoring if nests are found. Condition of Certification **BIO-5** requires the project owner to implement a WEAP to educate workers about compliance with environmental regulations, including Fish and Game Code.
Fish and Game Code section 3513	Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the MBTA or any part of such migratory nongame birds. The administering agency is CDFW.	**Compliant.** Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are on site during construction. Condition of Certification **BIO-8** provides for pre-construction nest surveys, protective buffers, and monitoring if nests are found. Condition of Certification **BIO-5** requires the project owner to implement a WEAP to educate workers about compliance with environmental regulations, including Fish and Game Code.
Fish and Game Code sections 1600 et seq.	Regulates activities that may divert, obstruct, or change the natural flow or the bed, channel, or bank of any river, stream, or lake in California designated by CDFW in which there is at any time an existing fish or wildlife resource or from which these resources derive benefit. Impacts to vegetation and wildlife resulting from disturbances to waterways are also reviewed and regulated during the permitting process. The administering agency is CDFW.	**Compliant.** Conditions of Certification **BIO-1**, **BIO-2**, and **BIO-4** ensure qualified biologists conduct pre-construction surveys and are on site during construction to ensure no activities take place within the Stanton Storm Channel. Condition of Certification **BIO-9** requires a qualified biologist to monitor all activities pertaining to drilling under the Carbon Creek Channel.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Native Plant Protection Act of 1977, Fish and Game Code, §1900 et seq. t	Designates state rare and endangered plants and provides specific protection measures for identified populations. The act also includes a salvage provision, enabling the administering agency, CDFW, to collect rare and endangered plants from properties in advance of construction or other activities that would destroy the plants.	**Compliant.** Construction and operation of the proposed project will not result in any impacts to state rare and endangered plants on the SERC site or along the natural gas line route.
Local		
County of Orange General Plan	The Resources Element of the General Plan contains Orange County's policies on the conservation and management of resources. The principal natural resources of concern are vegetation and wildlife habitat as well as landforms. It identifies and addresses concerns about the county's natural resources (land, air, water and plant/animal species) and establishes decision-making guidelines for advancing development, maintaining, preserving and conserving these resources. It includes discussion of Orange County's Central-Coastal Natural Community Conservation Plan (NCCP)/ Habitat Conservation Plan (HCP).	**Compliant.** Construction and operation of the proposed project will not result in any conflicts with the General Plan Goals, Policies, or Objectives.

AGENCY AND PUBLIC COMMENTS

We have received no comments relating to Biological Resources.

FINDINGS OF FACT

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

1. The Stanton Energy Reliability Center site, including its off-site staging and parking areas, are previously disturbed such that vegetation is limited primarily to weedy species and ornamental landscaping.

2. With the implementation of Condition of Certification **BIO-7,** impacts from invasive weeds will be mitigated to a less than significant level.

3. The evidence contains an analysis of potential adverse impacts upon biological resources, including special-status species, which may potentially be affected by construction and operation of the Stanton Energy Reliability Center.

4. Significant impacts to native or rare vegetation will not occur.

5. The Stanton Energy Reliability Center site does not contain suitable habitat for special-status plant or wildlife species.

6. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.

7. With the implementation of Conditions of Certification **BIO-1** through **BIO-8**, the potential impacts of the Stanton Energy Reliability Center on special-status species during construction will be mitigated to a less than significant level.

8. With the implementation of Conditions of Certification **BIO-7** and **BIO-8**, impacts to common bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code sections 3503 and 3513 will be reduced to a less than significant level.

9. The Stanton Storm Channel (which bisects the Stanton Energy Reliability Center site) and the Carbon Creek Channel (which would be crossed by the related natural gas pipeline) are under the jurisdiction of the United States Army Corps of Engineers, Regional Water Quality Control Board, and California Department of Fish and Wildlife.

10. With the implementation of Conditions of Certification **SOIL&WATER-1** and **BIO-9**, impacts to jurisdictional waters will be reduced to a less than significant level.

11. The project owner will implement a construction mitigation management plan by educating workers on habitat protection, and designating a qualified biologist and biological monitors with authority to halt activities to avoid impacts to sensitive resources.

12. The project owner will submit a Biological Resources Mitigation Implementation and Monitoring Plan incorporating all biological mitigation and compliance measures required by applicable local, state, and federal laws, ordinances, regulations, and standards.

13. With the implementation of Condition of Certification **BIO-7**, transmission lines will be designed to reduce the risk of avian collisions and electrocutions.

14. With the implementation of Condition of Certification **VIS-1**, impacts to wildlife from construction night lighting will be less than significant.

15. Operational nighttime lighting will be designed to avoid disruption to wildlife.

16. With the implementation of Conditions of Certification **SOIL&WATER-1** and **BIO-7**, indirect water quality impacts to adjacent wetland habitats will be less than significant.

17. With the implementation of Condition of Certification **SOIL&WATER-1**, project impacts to biological resources from storm water runoff during construction and operations will be less than significant.

18. With the implementation of Conditions of Certification **BIO-8**, **NOISE-4** and **NOISE-6,** construction and operational noise impacts to wildlife at the Stanton Energy Reliability Center will be less than significant.

19. The Stanton Energy Reliability Center's nitrogen deposition impacts to listed species and sensitive habitats during operations will be less than significant.

20. The Stanton Energy Reliability Center will have no cumulatively-considerable effects on biological resources.

21. Facility Closure mitigation measures contained in the Biological Resources Mitigation Implementation and Monitoring Plan will minimize or avoid impacts to biological resources so that demolition impacts to biological resources will be less than significant.

CONCLUSIONS OF LAW

1. Implementation of the mitigation measures described in the record and contained in the conditions of certification set forth in **Appendix A** of this Decision, ensures that the Stanton Energy Reliability Center will comply with all applicable laws, ordinances, regulations, and standards related to biological resources.

2. Implementation of the mitigation measures described in the evidentiary record and contained in the conditions of certification ensures that the Stanton Energy Reliability Center will not result in significant direct, indirect, or cumulative impacts to biological resources.

SOIL AND WATER RESOURCES

INTRODUCTION

This section focuses on the soil and water resources associated with the proposed Stanton Energy Reliability Center (SERC), including the potential for the project to induce erosion and sedimentation, exacerbate flood conditions, adversely affect water supplies, and degrade water quality. The analysis also considers site contamination and any potential cumulative impacts to water quality in the vicinity of the project, as well as the SERC's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to soil and water resources.

Evidence on the topic of Soil and Water is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 21, 25, 27, 28, 29, 31, 33, 34, 35, 58, 69, 61, 76, 79, 84, 88, 89, 91, 92, 94, 96, 100, and 300.[1]

SETTING

Soils

The project site for the SERC is an area of extensive historical disturbance. Native soils may or may not be present in the upper soil profiles. The evidence indicates that the site is located completely within a zone of Hueneme fine sandy loam deposited along an alluvial fan within the coastal plain. This underlying soil is likely well drained and relatively flat. This soil type is moderately susceptible to wind and water erosion. The linear facilities will also cross non-native fill and various loamy soil types.[2]

A Phase I Environmental Site Assessment (ESA) conducted in September 2016 found that an underground storage tank was removed from the western portion of the site and residual petroleum hydrocarbon impacts remain in place beneath the former underground storage tank. The report indicated that this is considered to be a historical recognized environmental condition in connection with the site.[3]

The Phase I ESA report also states that numerous containers of used oil and other chemical products that left stains in the soil and pavement at several spots suggest chemicals may have been released from those containers. The released chemicals appear to be surficial in nature, and are not considered recognized environmental conditions. Nevertheless, a Phase II ESA was conducted concurrent with the

[1] 8/2/18 RT pp. 29:20 – 30:14.
[2] Ex. 300, p. 4.10-9.
[3] Ex. 300, p. 4.10-10.

Phase I ESA. During the Phase II ESA, several soil samples were collected for analysis. The Phase II ESA concluded that there are no recognized environmental conditions at the site that could make it unsuitable for construction of the SERC.[4]

Groundwater

The SERC project site is within the Coastal Plain of Orange County Groundwater Basin, Orange County Basin. The Orange County Basin lies along the coast and has a surface area of 350 square miles. The entire basin underlies the lower Santa Ana River watershed. The basin is not adjudicated and has a total capacity of approximately 38,000,000 acre-feet. Orange County Water District (OCWD) manages groundwater in the Orange County Basin, and monitors the water level in the basin using an extensive network of 521 monitoring wells. OCWD observes trends of groundwater levels and correlates them with pumping and recharge activities. OCWD also monitors the groundwater quality in the basin.[5]

There are several municipal and irrigation wells throughout the basin with average yields of 4,000 to 6,000 gallons per minute. Average groundwater levels exhibited a decline of several feet by 1990, but they have risen by about 15 feet following that decline, according to the California Department of Water Resources. Historical groundwater flow was generally toward the ocean in the southwest, but modern pumping has caused water levels to drop below sea level inland of the Newport-Inglewood fault zone. This trough-shaped depression causes seawater to migrate inland, contaminating the groundwater supply. Strategic lines of wells in the Alamitos and Talbert Gaps inject imported and reclaimed water to create a mound of water seaward of the pumping trough to protect the basin from seawater intrusion.[6]

In general, the water quality of the subbasin is considered highly variable. Water within the basin is primarily of sodium-calcium bicarbonate character. Total dissolved solids (TDS) range from 232 to 661 mg/L and average 475 mg/L. The average total dissolved solids content of 240 public supply wells is 507 mg/L with a range of 196 to 1,470 mg/L.[7]

Surface Water

The SERC site lies within the boundaries of the 2,800 square mile Santa Ana river drainage basin. Drainage headwaters are in the San Bernardino and San Gabriel mountains, east of the SERC project site.

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[4] Ex. 300, p. 4.10-10.
[5] Ex. 300, p. 4.10-9.
[6] Ex. 300, p. 4.10-9.
[7] Ex. 300, p. 4.10-9.

The SERC project will discharge stormwater to the Stanton Storm Channel. The Stanton Storm Channel drains to the Bolsa-Chica Channel, which drains to Huntington Harbour, and ultimately to the Pacific Ocean. The site drainage is separated from the Pacific Ocean by about 10 miles of man-made channels.

The SERC site is located within a flood "Zone X," which is designated by the Federal Emergency Management Agency (FEMA) as an area of "0.2% annual chance of flood" which is also known as a 500-year flood zone.[8]

Project Water Supply

The construction and operations water supply will be potable water provided by Golden State Water Company via a connection adjacent to the SERC site within the existing Dale Avenue roadway corridor. The evidence indicates 5.6 acre-feet is needed for construction. During operations, the SERC will also use potable water for its one onsite restroom and landscaping. Annual potable water use during operations is estimated to average 13-acre-feet, and 34 acre-feet per year at maximum.[9]

Wastewater Discharge

The SERC wastewater will discharge to the city of Stanton's sanitary sewer system, which is ultimately received and treated by the Orange County Sanitation District (OCSD). OCSD owns and operates two wastewater treatment plants with a total capacity of 187 million gallons per day (MGD). Most of the treated wastewater is released into the ocean via a 10-ft diameter offshore pipeline that extends five miles from shore to a point approximately 200 feet below the ocean surface. OCSD also sends about 130 MGD of treated wastewater to the OCWD, which reclaims and reuses it for landscaping, injection into the seawater intrusion barrier to protect groundwater, and for the Groundwater Replenishment System (GWRS). The GWRS produces and injects recycled water to supplement native groundwater in the basin. Since part of the potable water delivered by the Golden State Water Company is groundwater that mixes with injected recycled water in the basin, the SERC facility will be indirectly using recycled water for operation.[10]

PROJECT DESCRIPTION

The SERC will install a 98-megawatt, natural gas power plant, comprised of two General Electric LM6000 PC natural gas-fired combustion turbine generators, with integrated batteries for hybrid operation, and a clutch gear for synchronous

[8] Ex. 300, p. 4.10-8.
[9] Ex. 300, p. 4.10-6.
[10] Ex. 300, pp. 4.10-10 - 4.10-11.

condenser operation. The project requires the installation of combustion turbines, installation of a battery array, underground transmission, and connection to the local natural gas, sanitary sewer, and municipal water supplies.[11]

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

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

According to Appendix G of the California Environmental Quality Act (CEQA) Guidelines, soil and water resources impacts are considered significant if the project would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality;
- substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    - result in substantial erosion or siltation on- or off-site;
    - substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
    - create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
    - impede or redirect flood flows;
- adversely impact open space used for production of resources by, among other things:
    - substantially impeding groundwater recharge;
    - causing substantial soil erosion or the loss of topsoil;
    - reducing areas that are needed for the protection of water quality and water supply , such as wellhead protection areas and wetlands;

[11] Ex. 300, p. 4.10-1.

- require or result in the construction of new or expanded water, wastewater treatment, or stormwater drainage facilities, the construction of which could cause significant environmental effects;
- have insufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years;
- result in a determination by the wastewater treatment provider that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- have impacts that are individually limited, but cumulatively considerable; or
- have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.[12]

Impact Assessment and Mitigation

Construction and Operation Soil Erosion and Stormwater Discharges

Soil erosion can occur during construction and grading activities, when disturbed soil is exposed and most vulnerable to detachment by wind and water. Increased sedimentation, over and above the amount that enters the water system by natural erosion, can cause many adverse impacts on aquatic organisms, water supply, and wetlands. Contamination of a nearby water body can also occur from direct discharge of wastewater or stormwater runoff that has been in contact with toxic materials or surfaces. Contaminants and toxic substances can also attach to sediments and travel in sediment-laden runoff.[13]

SERC construction will disturb approximately four acres, including the site footprint, and the linear and substation construction elements. Therefore, the project is subject to construction-related stormwater permit requirements of the federal Clean Water Act's National Pollutant Discharge Elimination System (NPDES) and California's *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Construction General Permit) administered by the State Water Resources Control Board (SWRCB) and enforced by the Regional Water Quality Control Boards. These requirements apply to construction sites and linear underground and overhead utility projects. Prior to construction activity that would disturb one or more acres of land, an applicant

[12] Ex. 300, pp. 4.10-2 – 4.10-3.
[13] Ex. 300, p. 4.10-11.

must demonstrate that it would comply with the Construction General Permit, which includes preparation of a Stormwater Pollution Prevention Plan (SWPPP).[14]

Condition of Certification **SOIL&WATER-1** requires a SWPPP to be prepared in compliance with the requirements of the Construction General Permit. The project owner will also provide the compliance project manager (CPM) with copies of the SWPPP and any correspondence between the project owner and the SWRCB or the Santa Ana Regional Water Quality Control Board (SARWQCB) regarding compliance with the permit.[15]

The evidence indicates that proper implementation of a SWPPP and Best Management Practices (BMPs) during construction will minimize impacts on water quality. Since the SERC's construction activities are subject to stormwater regulatory requirements and compliance with the Construction General Permit, we find the impacts of SERC's construction on surface water quality will be less than significant.[16]

During Operations, newly constructed impervious surfaces can send an increased volume of runoff containing oils, heavy metals, and other contaminants into adjacent water bodies. To protect the SERC's receiving water bodies (Stanton Storm Channel, Bolsa-Chica Channel, Huntington Harbour, and eventually the Pacific Ocean) from site stormwater discharges, the SERC will be required to comply with Orange County's post-construction stormwater design guidelines.[17]

The SERC must comply with the the Orange County Hydrology Manual as well as the Orange County Model Water Quality Management Plan (WQMP), based on the project's redevelopment activity that results in the creation or replacement of 5,000 square feet or more of impervious surface area on an already developed site. The SERC will create an impervious area of approximately 1.02 acres, or 44,431 square feet, significantly more than the threshold. The site drainage design relies on the use of infiltration piping and infiltration inlet structures to mitigate for the expected increases in runoff volume and peak flow, and shortening of the time-of-concentration from the impervious areas.[18]

To meet the requirements of the Model WQMP, calculations are performed for Drainage Management Areas (DMA) that are subareas of the larger project site believed to have similar drainage characteristics. Key compliance criteria are:

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[14] Ex. 300, pp. 4.10-11 – 4.10-12.
[15] Ex. 300, p. 4.10-12.
[16] Ex. 300, pp. 4.10-11 – 4.10-12.
[17] Ex. 300, p. 4.10-15.
[18] Ex. 300, p. 4.10-15.

- Post-development runoff volume for the 2-year, 24-hour storm event must be within 105 percent of the pre-development condition.
- Post-development time-of-concentration (Toc) for the 2-year, 24-hour storm event cannot be less than 95 percent of the pre-development condition.
- Post-development peak discharge for the 2-year, 24-hour storm event must be within 110 percent of the pre-development condition.[19]

Soil and Water Resources Tables 1 and **2** contain estimates of pre- and post-development runoff volume, time-of-concentration, and peak discharge for the three DMAs delineated by the Applicant. DMA 1 is on the eastern side of the Stanton Storm Channel that bisects the SERC site, while DMAs 2 and 3 are on the western side. The site drainage design relies on a series of perforated drainpipes underlain by a gravel retention rock base and stormwater retention chamber units to infiltrate and regulate flows within DMAs 1, 2, and 3.[20]

The drainage design for DMA 1 would include 1,047 ft. of perforated storm drain underlain by one foot of gravel substrate. Weirs within the inlet structures will cause storm flows to be retained and infiltrated. The farthest downstream inlet unit will have a 0.5 ft. by 0.2 ft. orifice to cause detention of flow within the storm drain system. Flows from DMA 1 will ultimately discharge to the eastern bank of the Stanton Storm Channel via the existing outlet.

DMA 2 will drain to a single low point where flows will be conveyed to an eight-inch pipe to a Stormtech chamber system for retention and subsequent infiltration. Flows from DMA 2 will ultimately drain to an existing 36-inch storm drain and discharge to the western bank of the Stanton Storm Channel via the existing outlet.[21]

DMA 3 will also drain to a Stormtech chamber system where stormwater will be retained and infiltrated. Onsite inlets will be equipped with filters to provide pretreatment of stormwater. Flows from DMA 3 will ultimately drain to an existing 36-inch storm drain and discharge to the western bank of the Stanton Storm Channel via the existing outlet.[22]

Soil and Water Resources Table 1 shows that the pre-construction discharge from DMA 1 is 1,743 ft.^{3} therefore, 105 percent of the pre-development condition (maximum post-development condition specified in criteria listed above) is 1,830 ft^3. **Soil and Water Resources Table 2** shows that with the proposed drainage

[19] Ex. 300, p. 4.10-16.
[20] Ex. 300, p. 4.10-16.
[21] Ex. 300, p. 4.10-16.
[22] Ex. 300, p. 4.10-16.

system, the runoff volume would be reduced to 453 ft^3. This would be significantly less than the requirement that post-development runoff volume be within 105 percent of the pre-development condition. The discharge volume would be similarly reduced in the post-construction condition for DMA 2 and DMA 3, and the total site discharge would also be reduced from 14,075 ft^3 to 1,814 ft^3 in the post-construction condition.

Soil & Water Resources Table 1
Pre-Construction Site Discharge

	DMA 1	DMA 2	DMA 3	Total
area (acres)	1.75	0.80	0.81	3.36
volume (ft^3)	1,743	6,970	7,105	14,075
peak flow (ft^3/s)	0.79	1.43	1.33	-
Toc (min)	30.77	5.74	7.08	-

Source: Ex. 300, p. 4.10-17**.**

Soil & Water Resources Table 2
Post-Construction Site Discharge

	DMA 1	DMA 2	DMA 3	Total
area (acres)	1.75	0.80	0.81	3.36
volume (ft^3)	453	0	1,361	1,814
peak flow (ft^3/s)	0.67	0.93	0.86	-
Toc (min)	66.2	81.2	24.5	-

Source: Ex. 300, p. 4.10-17**.**

The pre- and post-construction peak discharge conditions shown in **Soil and Water Resources Table 1** and **2** indicate that the SERC project peak discharge from each DMA will be less than the existing condition peak discharge, which is less than 110 percent of the pre-development condition. Therefore, the SERC's site drainage design will conform to the County's compliance criteria.

The pre- and post-construction Toc of discharge shown in **Soil and Water Resources Table 1** and **Soil and Water Resources Table 2** also establish that the Toc of discharge from each DMA would be greater with the SERC, which is not

less than the minimum of 95 percent of the pre-development condition. Again, the SERC's site drainage design would conform to the County's compliance criteria.[23]

The preliminary design for installation of the proposed retention and infiltration structures, in conjunction with the proposal to implement source controls like disconnection of impervious areas, will be adequate for the treatment of stormwater in the post-construction condition. Staff testified that the drainage design as described is expected to meet the requirements of the Model WQMP.

We impose Condition of Certification **SOIL&WATER-2**, which requires the project owner to comply with the local site design criteria for its post-construction stormwater control BMPs and prepare a WQMP. With the implementation of this condition of certification, impacts from hydromodification, soil erosion, and polluted runoff will be avoided or reduced during operation to less than significant.[24]

Construction and Operation Groundwater Quality Impacts

Construction activities can potentially affect both groundwater quantity and quality. Temporary pumping could lower the groundwater level at the pumping site (drawdown) which could potentially reduce the well yield of any nearby wells, reduce required supply for any nearby groundwater-dependent habitat, and induce intrusion of nearby subsurface contaminants. Additional water quality impacts could occur if construction activities allow onsite contaminants to reach groundwater, either directly (when excavation reaches groundwater level) or through soil infiltration.

The evidence indicates that the depth to groundwater under the SERC project site is approximately 20 feet. Therefore, it is unlikely that dewatering activities will be required for project construction. In addition, the evidence indicates that significant impacts on groundwater resources are unlikely because groundwater will not be used for construction activities and compliance with the Construction General Permit will minimize or eliminate pollutant spills that could potentially infiltrate to groundwater. Condition of Certification **SOIL&WATER-3** ensures that any contaminated groundwater collected during hydrostatic testing and/or dewatering will be properly disposed in accordance with applicable LORS. We find that with implementation of Condition of Certification **SOIL&WATER-3**, the impacts of SERC construction on groundwater quality will be less than significant.[25]

Groundwater quality impacts could occur if the SERC operation allows contaminants to reach groundwater through soil infiltration. However, the same

[23] Ex. 300, pp. 4.10-15 – 4.10-17.
[24] Ex. 300, p. 4.10-17.
[25] Ex. 300 p. 4.10-13.

measures implemented to avoid or reduce impacts from polluted runoff will also protect groundwater quality. Wastewater generated during operation will be managed to reduce impacts to groundwater. Finally, the operation of SERC does not include any groundwater pumping, so the project will not directly cause groundwater drawdown. For these reasons, we find that the operational impacts of SERC on groundwater quality will be less than significant.[26]

Construction and Operation Water Supply

The construction water supply will be potable water provided by Golden State Water Company. The SERC will use approximately 5.6-acre feet during construction. Golden State Water Company has provided a will-serve letter demonstrating that they have an adequate supply available and are able to serve the project during both the construction and operation phases. Because the amount of water used for construction will be relatively small, the SERC's construction activities will have a less than significant impact on the Golden State Water Company's potable water supplies. Construction sanitary wastewater will be collected in portable toilets (no discharge) supplied by a licensed contractor for collection and disposal at an appropriate receiving facility. The evidence indicates that since the water during construction and operation of the SERC is so limited, no further detailed availability analysis or water supply assessment was required in accordance with Water Code Section 10910. Specifically, the SERC is less than 40 acres, will have less than 650,000 square feet of floor area, and will use less water than a 500 dwelling unit project.[27]

During operations, the SERC facility will be unstaffed. However, the project will have a restroom onsite for the use of maintenance crews and other staff that will visit the project. Sanitary wastewater from the restroom facility on the west side of the site will discharge to the city of Stanton's sanitary sewer system. The new sewer line will be installed on the western half of the property, within the city of Stanton's Pacific Street right-of-way near the Fern Avenue intersection. The total sewer line length from the restroom location to the city of Stanton sanitary sewer line is approximately 140 feet. During project operations, the estimated average potable water use is 13-acre-feet per year, and at maximum, 34 acre-feet per year.[28]

We find that the use of potable water for the SERC project will not adversely impact the city's potable water supplies. Compliance with Conditions of Certification

[26] Ex. 300, p. 4.10-18.
[27] Ex. 300, pp. 4.10-6; 4.10-14; 4.10-22
[28] Ex. 300, pp. 4.10-8; 4.10-18.

SOIL&WATER-4 and **SOIL&WATER-5** ensure the project owner will comply with the water use limits consistent with this analysis.

The record contains a discussion regarding recycled water for project operation. The closest recycled water connection to the SERC site is about 8 miles away, and given the relatively small amount of water needed for the project, we find that it would be economically infeasible to require the SERC to use recycled water.[29]

Wastewater Management

Wastewater generated during construction would include sanitary waste, stormwater runoff, equipment wash-down water, concrete-washout wastewater, and wastewater from hydrostatic testing. Wastewater that is not properly disposed of could potentially contaminate groundwater through soil infiltration, as well as a nearby water body through direct discharge or contact runoff.

The evidence indicates that all SERC construction-related wastewater will be classified as hazardous or nonhazardous and managed according to appropriate LORS. Hazardous wastewater will be collected by a licensed hazardous waste hauler for disposal at a licensed hazardous waste facility. Compliance with the Construction General Permit will follow BMPs to properly manage stormwater runoff, equipment wash-down water, concrete-washout wastewater, and sanitary waste. Compliance with the NPDES permit which regulates discharges of low threat wastewater, including hydrostatic test water and construction dewatering water (if required), to surface waters in the region will ensure that the project's construction wastewater discharges on soil and water resources will be less than significant. This permit specifies discharge prohibitions, effluent limitations, and monitoring and reporting requirements to achieve the minimum water quality standards.

During operations, the industrial wastewater from the SERC site will primarily consist of reverse osmosis reject water, therefore it will not introduce any external chemicals or metals into the waste stream, and therefore, an industrial wastewater discharge permit is not required. Condition of Certification **SOIL&WATER-3** requires the SERC to comply with the applicable permits based on project discharges and provide the CPM with copies of any correspondence between the project owner and the relevant water board(s) related to permit compliance. Additional Conditions of Certification in the **WASTE MANAGEMENT** section of this Decision require reports of hazardous waste disposal in accordance with all applicable federal, state, and local requirements.[30]

[29] Ex. 300, pp. 4.10-11; 4.10-19; 4.10-26.
[30] Ex. 300, pp. 4.10-14 – 4.10-15.

The SERC facility will have both sanitary and operation wastewater discharges during project operation. Sanitary wastewater volumes will be minimal since the SERC will be unstaffed for extended time periods. Operation wastewater is primarily reverse osmosis filter backwash wastewater. If wastewater is not properly disposed, then contamination could potentially occur to a nearby water body or groundwater could become contaminated through soil infiltration.

The applicant estimates wastewater discharge during industrial operation to be between 42 and 52 gpm. OCSD Ordinance No. OCSD-48 specifies the fees that must be paid by entities receiving sanitary sewer service within the OCSD, as well as the sewerage system design and connection requirements. As stated in the Application for Certification, the project owner has been informed that the city of Stanton will accept the project wastewater. The project owner will also direct payments for sewer service to the city of Stanton. Condition of Certification **SOIL&WATER-6** requires the project owner to pay the fees normally required by the city for sanitary sewer connections.[31]

We find that with the implementation of Conditions of Certification **SOIL&WATER-1** through **SOIL&WATER-6**, the SERC will have no significant impacts to soil resources, groundwater resources, potable water supplies, or water quality.

Linear Construction

Operation of the SERC will require water, sewer, and natural gas pipelines as well as underground transmission and communications cables. The natural gas pipeline will disturb approximately 0.13 acres and the transmission equipment installation will disturb approximately 0.04 acres. Potential construction pollutants associated with these linear features are sediment from areas of soil disturbance, concrete and cement-related mortars, spilled oil, fuel, and fluids from vehicles and heavy equipment. With the exception of a portion of the natural gas pipeline, all other pipelines or underground cables will be constructed exclusively within city of Stanton streets, and potential impacts to soil and water resources will be mitigated through the preparation and implementation of the construction SWPPP.

The SERC project proposes a jack and bore construction operation to drill under Carbon Creek to install a portion of the natural gas pipeline. The jack and bore process could cause unexpected and temporary impacts to water quality from drilling mud flowing through soil fractures to the surface and into Carbon Creek. Condition of Certification **SOIL&WATER-7** requires the project owner to submit a Frac-Out Plan for approval prior to the commencement of the jack and bore operation. The Frac-Out Plan will specify emergency and remedial actions to

[31] Ex. 300, p. 4.10-19.

protect Carbon Creek in the event that drilling releases mud to the creek or creek bed. The evidence indicates that the Frac-Out Plan will mitigate the impacts from the jack and bore operation.

Any work that might affect an Army Corps of Engineers (ACOE) structure requires a section 408 permit. While the permit is issued by ACOE, in Orange County, applications for section 408 permits are processed through the Orange County Public Works Department. Because Carbon Creek is managed as an ACOE flood control structure, a section 408 permit for the jack and bore activities associated with the installation of the gas pipeline is required. The purpose of this permit is to ensure there is no damage to the channel flood control capacity and function.

To minimize impacts to Carbon Creek from pit excavation and drilling, the Applicant must also obtain Clean Water Act, section 401 and 404 permits, administered by the Water Board and ACOE, respectively. The purpose of these permits is to address construction activities associated with the jack and bore operation that have the potential for adverse impacts to water quality from surface or sub-surface pollutants. Condition of Certification **SOIL&WATER-7** requires the project owner to provide the CPM with proof that the section 401, 404, and 408 permits were obtained.[32]

Flooding

Flooding is an overflow of water onto land that is normally dry. Potential flooding of the SERC site may occur from:

- construction that substantially alters the existing drainage patterns of the site (due to site grading, increasing impervious surfaces, or placing the project in a location that would alter the course of a stream or river);
- riverine flooding caused by rapid accumulation of stormwater runoff in a watershed;
- failure of regional floodplain management (such as failure of a dam or levee); and
- tsunamis and seiches caused by geological events (see the **GEOLOGY AND PALEONTOLOGY** section of this Decision).[33]

Project-Induced Offsite Flooding Potential

The evidence establishes that the SERC site receives run-on to both parcels. The western parcel takes on drainage from about one acre of the lot to the north. The

[32] Ex. 300, pp. 4.10-12 – 4.10-13.
[33] Ex. 300, p. 4.10-19.

eastern parcel takes on about a half-acre of drainage from Dale Avenue. Both of these areas are covered by the onsite drainage system. The SERC project will collect all onsite stormwater in its drainage system, which discharges to the Stanton Storm Channel. The total runoff volume and peak flow from the site, post-construction, should closely match the pre-construction runoff conditions, as required by Orange County's 2011 Model WQMP. Condition of Certification **SOIL&WATER-2** requires the project owner to submit a final WQMP to Orange County for review and comment and to the CPM for review and approval. The evidence indicates that the SERC site will not need to redirect a significant amount of flow or induce offsite flooding.[34]

Flooding Impact on Reliability

Although the Stanton Storm Channel bisects the site, it is not located within a designated flood zone. The site is located within a flood "Zone X," which is otherwise known as the 500-year flood zone, or above the 100-year flood zone. Projects constructed within the 100-year flood zone are usually subject to additional design and insurance requirements. Since the SERC site is outside of the 100-year flood zone, no additional requirements for flood protection are required. The evidence shows that the risk of the site flooding from the Stanton Storm Channel is low, and the site has no unusual risk to reliability from flooding.[35]

Vehicle and Utility Bridge Installation

The SERC project will require the installation of a vehicle bridge across the Stanton Storm Channel to allow access to both sides of the project site. The project will also install a utility bridge to convey stormwater from the eastern parcel to a drainage basin in the western parcel. The Applicant does not expect to build within the channel or cause any obstruction to flow, and Staff does not anticipate any impacts to channel flow capacity or the floodway. Condition of Certification **SOIL&WATER-8** requires the project owner to obtain an encroachment permit from the Orange County Public Works Department to ensure that the bridges are constructed in accordance with the Orange County requirements and will not cause an obstruction to channel flow.[36]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the

[34] Ex. 300, p. 4.10-20.
[35] Ex. 300, p. 4.10-20.
[36] Ex. 300, p. 4.10-20.

effects of (1) past projects; (2) other current projects; and (3) probable future projects.[37]

The SERC Master Cumulative Project List is contained within the **PROJECT DESCRIPTION** section of this Decision. The record identified three projects within six miles of the SERC site that are approved, under review, or under construction. These projects have the potential to contribute to increased local soil erosion and stormwater runoff. Without the use of stormwater BMPs and erosion control BMPs, these changes could incrementally increase local soil erosion and stormwater runoff, leading to significant impacts to the quality of receiving water bodies. By ensuring all projects comply with all applicable erosion and stormwater management LORS, including the NPDES Construction General Permit and the Orange County Model WQMP, these projects combined with the SERC project will avoid or substantially lessen the potential cumulative impact. The SERC contribution will not be cumulatively considerable and, therefore, not significant.[38]

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

Soil and Water Table 4 provides an assessment of the SERC's compliance with applicable LORS pertaining to soil and water resources.

Soil and Water Table 4
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Federal		
The Clean Water Act (CWA) (33 USC § 1257 et seq.)	The primary objective of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation's surface waters. CWA section 401: Requires a water quality certification from the regional water quality control board when a Section 404 permit is requested of the US Army Corps of Engineers (USACE) for dredge or fill activity in waters of the US. CWA section 402: Direct and indirect discharges and stormwater discharges into waters of the U.S. must be made pursuant to a	**Compliant.** With implementation of Conditions of Certification **SOIL&WATER-1**, **SOIL&WATER-3,** and **SOIL&WATER-7** the SERC will comply with the CWA because it will obtain the water quality certification and NPDES permit.

[37] Tit. 14, Cal. Code Regs. § 15130.

[38] Ex. 300, pp. 4.10-21 – 4.10-22.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
	National Pollutant Discharge Elimination System (NPDES) permit. CWA section 404: Requires a permit from the USACE for dredge or fill activity in waters of the US. CWA section 408: Requires a permit from the USACE to ensure that any proposed alteration to a USACE civil works project will not be injurious to the public interest and will not affect the project's ability to meet its authorized purpose.	
State		
California Constitution, Article X, section 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.	**Compliant.** The SERC minimizes water use. The project also does not have reasonable access to recycled water The record shows that the SERC's water use will be minimal.
Water Code Sections 10910-10915	Requires public water systems to prepare water supply assessments (WSA) defined development projects subject to the California Environmental Quality Act. Lead agencies determine, based on the WSA, whether protected water supplies will be sufficient to meet project demands along with the region's reasonably foreseeable cumulative demand under average-normal-year, single-dry-year, and multiple-dry-year conditions.	**Compliant.** The proposed water use does not meet the criteria to require a WSA. The record shows that the SERC's water use will be minimal.
The Porter-Cologne Water Quality Control Act of 1967, California Water Code Section 13000 et seq.	The State Water Resources Control Board (SWRCB) has the ultimate authority over State water rights and water quality policy. Porter-Cologne also establishes nine Regional Water Quality Control Boards (RWQCB) to oversee water quality on a day-to-day basis at the local/regional level. Section 13550: Requires the use of recycled water for non-potable uses subject to recycled water being available and upon other criteria such as the quality and quantity of the recycled water are suitable for the use, the cost is reasonable, the	**Compliant.** With implementation of Conditions of Certification **SOIL&WATER-1** and **-3**. The SERC also does not have reasonable access to recycled water. The record shows that the SERC's water use will be minimal.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
	use is not detrimental to public health, and the use will not impact downstream users or biological resources.	
Fish and Game Code, section 1602	Requires an entity to obtain a permit from California Department of Fish and Wildlife (CDFW) prior to commencing any activity that may: • Substantially divert or obstruct the natural flow of any river, stream or lake; • Substantially change or use any material from the bed, channel or bank of any river, stream, or lake; or • Deposit debris, waste or other materials that could pass into any river, stream or lake.	**Compliant.** With implementation of Conditions of Certification **SOIL&WATER-7** which requires the SERC to apply for Section 401, 404, 408 permits and Streambed Alteration Agreement as appropriate.
Local		
Orange County Code – Titles 4, Division 13 and Title 9, Division 1 – Stormwater Management and Urban Runoff	Requires construction and development projects that meet applicability criteria to control stormwater runoff pollution using approved construction and post-construction best management practices (BMPs).	**Compliant.** With implementation of Condition of Certification **SOIL&WATER-1** and **-2** and approved BMPs, the SERC will comply with this ordinance.
Orange County Code – Title 9, Division 2, Article 2, Sections 9-2-40 and 9-2-50 – Flood Control Encroachment Permit	Outlines the procedures and fees associated with the issuance of an encroachment permit for activities near flood control structures.	**Compliant.** With implementation of Condition of Certification **SOIL&WATER-8**, the SERC will obtain the required encroachment permit.
Orange County Sanitation District Ordinance No. OCSD-48	Specifies the fees that must be paid by entities receiving sanitary sewer service within the OCSD as well as the sewage system design requirements.	**Compliant.** With implementation of Condition of Certification **SOIL&WATER-6**, the SERC will pay all relevant fees under this ordinance.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Soil and Water.

FINDINGS OF FACT

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

1. Without mitigation, construction and operation of the Stanton Energy Reliability Center could potentially induce erosion and sedimentation, adversely affect water supplies, and/or degrade water quality.
2. The depth to groundwater at the Stanton Energy Reliability Center site is approximately 20 feet, which makes the likelihood of dewatering very low.
3. Average water use during construction will not exceed 5.6-acre feet per year.
4. During operations, the Stanton Energy Reliability Center's potable water use will not exceed the 34-acre feet per year provided by Golden State Water Company for process and sanitary use.
5. Conditions of Certification **SOIL&WATER-4** and **SOIL&WATER-5** ensure the project owner complies with the water use limits.
6. Condition of Certification **SOIL&WATER-1** will reduce or avoid impacts of soil erosion and stormwater runoff to surface water and groundwater quality during construction.
7. Condition of Certification **SOIL&WATER-1** requires a construction Stormwater Pollution Prevention Plan for the Stanton Energy Reliability Center site to prevent all construction pollutants, including erosion products, from contacting stormwater, and requires inspection and monitoring.
8. Condition of Certification **SOIL&WATER-2** requires the use of post-construction BMPs to control stormwater and reduce soil erosion impacts during operations to less than significant levels.
9. Potential impacts from project wastewater streams will be mitigated to less than significant levels during construction through compliance with Condition of Certification **SOIL&WATER-2**stormwater and **SOIL&WATER-3**.
10. Potential impacts from project wastewater streams will be mitigated to less than significant levels during operations with Condition of Certification **SOIL&WATER-6**.
11. In light of the Stanton Energy Reliability Center's low water use and long distance to a recycled water source, it is economically infeasible to require the project owner to construct access to recycled water.

12. During project operation, wastewater generation by the Stanton Energy Reliability Center will discharge to the city of Stanton's sewer system.

13. Condition of Certification **SOIL&WATER-6** requires compliance with the city of Stanton's ordinances and requires documentation from the Applicant demonstrating that the city of Stanton's fees associated with sewer connections have been paid.

14. Condition of Certification **SOIL&WATER-7** requires documentation of applicable permits and the preparation of a Frac-Out Plan detailing how jack and bore activities will be conducted to ensure no significant impacts to Carbon Creek.

15. Condition of Certification **SOIL&WATER-8** requires the Applicant to obtain an Orange County Public Works Department Flood Control Encroachment Permit for the construction of a vehicle bridge and a utility bridge.

16. The impact from disposal of wastewater through the city of Stanton's sewer line will be less than significant.

17. There is an adequate supply of potable water for the Stanton Energy Reliability Center and the project will not cause a significant impact on potable water supply.

18. A water supply assessment is not required for the Stanton Energy Reliability Center because it is not a "project" as defined by California Water Code Section 10912.

19. With the implementation of Conditions of Certification **SOIL&WATER-1** through **SOIL&WATER-5,** the Stanton Energy Reliability Center will have no significant impacts to soil resources, groundwater resources, potable water supplies, or water quality.

20. The likelihood of flooding at the site is low.

21. Flooding impacts from construction and operation of the Stanton Energy Reliability Center will be less than significant.

22. The impact of the Stanton Energy Reliability Center on soil and water resources, in conjunction with other past and proposed projects in the area, will not be cumulatively considerable.

23. The incremental effects of the Stanton Energy Reliability Center on regional water supply, or the quality of surface water and groundwater, will not be cumulatively considerable.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification listed in **Appendix A** of this Decision, the Stanton Energy Reliability Center will comply with the applicable laws, ordinances, regulations, and standards regarding soil and water resources.

2. With implementation of the Conditions of Certification listed in Appendix A of this Decision, the Stanton Energy Reliability Center will not cause a significant direct, indirect or cumulative environmental impact to soil and water resources.

C. CULTURAL RESOURCES

INTRODUCTION

This section reviews the structural and cultural evidence of human development in the project vicinity where cultural resources could be disturbed by excavation and construction. Cultural resources such as artifacts, structures, or land modifications reflect the history of human development. Places that are important to Native Americans or other ethnic groups are considered valuable cultural resources. State laws require a lead agency, or its delegatee, to develop and implement mitigation measures to minimize potential adverse impacts to significant cultural resources.

Evidence on the topic of Cultural Resources is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 10, 13, 28, 30, 31, 51, 52, 55, 56, 69, 76, 82, 88, 92, 100, 300, and 302.[1]

SETTING AND PROJECT DESCRIPTION

The prehistoric project area of analysis (PAA) is the area within a one-mile radius surrounding the Stanton Energy Reliability Center (SERC) site, the natural-gas pipeline, and the generator tie line. For ethnographic resources, the PAA is expanded to take into account sacred sites, traditional cultural properties (places), and larger areas such as ethnographic landscapes that can be more encompassing, including viewsheds that contribute to the historical significance of such cultural resources. The PAA used by Energy Commission staff (Staff) to identify ethnographic resources included the area from the Santa Ana River west to the San Gabriel River, north to the Coyote Hills, and south to the Pacific Ocean.[2]

The built-environment (architectural) PAA is defined as the area within a one-parcel radius around the proposed project site, the northern and southern alternative natural-gas pipelines, and the generator tie line.[3]

The evidentiary record contains a detailed account of the methods and processes employed by Staff and the Stanton Energy Reliability Center, LLC (Applicant) to ascertain the extent of the cultural resources present in the PAA, analyze potential impacts and recommend mitigation in the event of a potentially significant impact. Staff and Applicant conducted a full cultural resource inventory for the PAA of the SERC site and linear facility routes, including both archival research and field surveys of the area.[4]

For a general project description, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

[1] 8/2/18 RT pp. 29:20 – 30:14.
[2] Ex. 300, p. 4.3-11.
[3] Ex. 300, p. 4.3-11.
[4] Ex. 300, p. 4.3-11.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The term "cultural resource" is used broadly to include the several categories of resources, such as ethnographic, prehistoric and historic archaeological sites, buildings, structures, objects, and historic districts. Ethnographic resources are those resources important to the heritage of a particular ethnic or cultural group, such as Native Americans. When a cultural resource is determined to be significant (that is, an historical resource or unique archaeological resource), it is eligible for listing in the California Register of Historical Resources (CRHR). An archaeological resource that does not qualify as a historical resource may be considered a "unique" archaeological resource under the California Environmental Quality Act (CEQA). Structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. Since there is often a five-year lag between resource evaluation and the date that eligibility is decided, cultural resource specialists may use 45 years as a criterion for considering potential eligibility.[5]

Direct impacts to archaeological resources can occur as a result of surface and subsurface ground disturbance of known or unknown deposits during construction activities. Direct impacts to historic structures can occur when they are moved to make way for new construction, when vibrations or emissions from new construction impair the stability or degrade the materials of historic structures, or when new buildings are stylistically incompatible with historic structures. New construction can also cause indirect impacts to archaeological or historic resources such as soil erosion, inadvertent damage and/or vandalism due to increased public access to the resources.[6]

Impact Assessment and Mitigation

Ethnographic Resources

The Gabrielino people and representative tribes are the Native Americans most directly related to the project vicinity. The Gabrielino Tongva have traditionally been split into four subgroups based on the dialect of the Gabrielino Tongva language spoken: those of the Los Angeles Basin/Gabrielino proper, those of the northern mountainous area including the inland San Fernando Valley/Fernandeño, those of Santa Catalina and San Clemente islands, and those of San Nicolas Island. Today, the names Gabrielino, Tongva, or Gabrielino Tongva seem to be the preferred references of the indigenous groups from the Los Angeles Basin. The name Gabrielino Tongva will be used for the purposes of this Decision, except when referring to specific tribal entities that identify by other names. The SERC project is located in the inland portion of the Gabrielino Tongva's mainland territory

[5] Ex. 300, pp. 4.3-1 - 4.3-2.

[6] Ex. 300, p. 4.3-26.

and in between the (now channelized) San Gabriel and Santa Ana Rivers. The city of Stanton, and Orange County more generally, have experienced rapid development over the past 100 years that, coupled with the older Spanish and Mexican occupations, pushed Gabrielino people out of their traditional areas, often resulting in the loss of the knowledge of these places. This constrained the employment of common ethnographic methods as described below.[7]

The closest recorded Gabrielino village sites to the proposed SERC project were Hotuuknga and Pasbenga, both of which were located close to the Santa Ana River. Staff made efforts to seek, obtain, and assess culturally relevant information from various archival sources related to Hotuuknga and Pasbenga, and the relationship between these villages and other archaeological sites in the vicinity of the SERC project. The evidence establishes that no ethnographic resources were identified.[8]

Outreach Efforts

Staff contacted the Native American Heritage Commission (NAHC) on October 27, 2016, and requested a search of the Sacred Lands File and a California Native American tribe contacts list for the SERC project. The NAHC responded November 10, 2016, with a list of California Native American tribes interested in consulting on development projects in the project area. A check of the NAHC Sacred Lands File failed to indicate any Native American traditional sites/places within the proposed project site. Staff sent letters to all of the NAHC-listed tribes, and additional culturally-affiliated California Native American tribes not on the NAHC list on March 21, 2017. The letters and emails sent to tribes invited them to comment on the proposed project and offered to hold face-to-face consultation meetings if any were requested. An email was received from one group on March 23, 2017, indicating interest in the project and a request that the depth of disturbance of project construction be provided. The evidence indicates that has not received any additional responses.[9]

Literature Review and Records Search

The archival research included records searches at the South Central Coastal Information Center (SCCIC) of the California Historical Resources Information System (CHRIS). The literature review and records search indicated that 13 previous cultural resource studies were conducted in the records search area. Of these, two cultural resource studies were conducted within the SERC's archaeological, ethnographic, and built environment PAA. The records search revealed that there were no previously identified cultural resources on the project site, though 21 cultural resources were previously recorded in the records

[7] Ex. 300, p. 4.3-20.
[8] Ex. 300 pp. 4.3-23, 4.3-60.
[9] Ex. 300, p. 4.3-16.

search area. Only one, the Hobby City Doll and Toy Museum, was previously identified as eligible for listing on the National Register of Historic Places (NRHP) and the CRHR.[10]

Staff examined ethnographic sources concerning the Gabrielino and nearby Native American groups such as the Luiseno and Juaneno to ascertain any pertinent information regarding potential ethnographic resources in the PAA. Staff also examined prehistoric and historic literature to supplement their analysis. The record demonstrates that Staff and Applicant both conducted a thorough review of the relevant literature. The evidence indicates that the SERC will not have any effect on any previously recorded archaeological resources that are located outside the SERC project boundaries.[11]

Field Surveys

The field efforts to identify cultural resources in the PAA consist of the Applicant's pedestrian archaeological and historic built-environment surveys, archaeological, built-environment, monitoring reports for other projects in the PAA, and Staff's field visits to the SERC project site and vicinity. No surficial prehistoric or historic resources were identified during either of the Applicant's pedestrian survey efforts.[12]

Historic Built Environment Survey

The Applicant surveyed a one-parcel buffer around the project site. USGS topographic maps and historic aerial photographs guided the survey effort to determine which buildings were 45-years or older. There were five properties of historic age identified by the Applicant and confirmed by Staff within the PAA. These are listed in **Cultural Resources Table 1**.[13]

Cultural Resources Table 1
Newly Recorded Cultural Resources within the PAA

Address	Site Components	Year Constructed	NRHP/CRHR Eligibility	Location relative to Stanton Energy Reliability Center
8230 Pacific Street	Concrete lined storm drain	c. 1960	Not eligible	Within project site
10680 Fern Avenue	Two related buildings on same parcel	c. 1960	Not Eligible	Adjacent to project site
Multiple	Transmission towers	c. 1960	Not eligible	Within project site
Southern Pacific Railroad	Rail line	c. 1890	Not eligible	Immediately south of project site
8662 Cerritos Ave	Barre Substation	1939-1940	Not eligible	~0.2 miles

[10] Ex. 300, pp. 4.3-12 -4.313; 4.3-25.
[11] Ex. 300, p. 4.3-12.
[12] Ex. 300 p, 4.3-21.
[13] Ex. 300 p, 4.3-22.

As listed in **Cultural Resources Table 1**, all five resources are industrial properties. The Applicant recorded and evaluated the historic significance of the five resources.[14] The undisputed evidence indicates that all five of the resources are ineligible for listing on the CRHR, and therefore any potential project impact to these resources will be less than significant.

Construction Impacts and Mitigation

The SERC project will not impact any known prehistoric, ethnographic, and historical resources. Because the site has moderate potential to contain buried archaeological resources, we will impose Conditions of Certification **CUL-1** through **CUL-8**. These conditions of certification are intended to facilitate the identification and assessment of previously unknown prehistoric and historic archaeological resources encountered during construction and to mitigate any significant project impacts on any newly found historical resources. To accomplish this, the conditions provide for:

- The hiring of a Cultural Resources Specialist, Cultural Resources Monitors, and Cultural Resources Technical Specialists;
- The preparation of a Cultural Resources Mitigation and Monitoring Program;
- The archaeological and Native American monitoring of ground-disturbing activities in native soils;
- The recovery of significant data from discovered archaeological deposits;
- The writing of a technical archaeological report on monitoring activities and findings;
- The curation of any recovered artifacts and associated notes, records, and reports; and
- Cultural resources surveys, if the Applicant chooses to use a private soil borrow or disposal site rather than a commercial one.[15]

With the implementation of Conditions of Certification **CUL-1** through **CUL-8**, any impacts to unknown historical archaeological resources newly discovered in the project impact areas will be mitigated to a less than significant level.

[14] Ex. 300 p, 4.3-23.
[15] Ex. 300 p, 4.3-27.

Assessment of Direct Impacts and Proposed Mitigation

Prehistoric and Historic Archaeological Resources on the Surface of the PAA

No archaeological resources were recorded on the surface of the PAA where direct impacts could occur. Thus, there are no surficial historical resources for the purposes of CEQA and there will be no impacts to any surficial historical resources.[16]

Buried Archaeological Resources in the PAA

There is no positive identification of buried prehistoric or historic archaeological resources in the record. However, the sediments under the SERC site are of the appropriate age and depositional nature to have supported the formation and preservation of archaeological resources throughout the span of human occupation in the vicinity of the project and surrounding area. If present, the SERC project could result in damage to buried archaeological resources.[17]

The record establishes that expectable ground-disturbance impacts on buried archaeological resources will best be minimized by implementing a comprehensive cultural resources mitigation and monitoring program. Implementation of a well-planned mitigation and monitoring program, including Native American monitors, will reduce the potential project impacts to a less-than-significant level.[18]

Assessment of Direct Impacts on Ethnographic Resources

The evidence establishes that no ethnographic resources were recorded or identified in the PAA where direct impacts from the SERC project could occur. Thus, there are no ethnographic or tribal cultural resources for the purposes of CEQA, and no impacts will occur to resources of this type.

Assessment of Direct Impacts on Built-Environment Resources and Proposed Mitigation

Applicant and Staff reviewed the literature search materials and other available studies as noted herein, engaged in independent research and performed on-site and off-site reconnaissance surveys. The only historical built environment resource identified within the literature search area is the Hobby City Doll and Toy Museum. Due to its distance from the project site (0.7-mile in a highly urban area), this resource will not be impacted by the SERC construction or operation. Based on the information available, we find that the SERC project will have no direct impacts on known built environment historical resources. Therefore, no mitigation measures for built environment resources are required

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[16] Ex. 300 p, 4.3-27.
[17] Ex. 300 p, 4.3-27.
[18] Ex. 300 p, 4.3-27.

Indirect Impacts

No indirect impacts were identified on any cultural resources that qualify as historical resources or unique archaeological resources under CEQA. Based on this record, we find that the SERC project will have no indirect impacts on known prehistoric, ethnographic, or historic resources. Therefore, no mitigation measures for built environment resources are required.[19]

CUMULATIVE IMPACTS

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[20]

Cumulative impacts to cultural resources in the project vicinity could occur if any other existing or proposed projects, in conjunction with the proposed SERC, had or would have impacts on cultural resources that considered together would be significant.[21] For both prehistoric and historic archaeological resources, the cumulative projects area of analysis is comprised of a six-mile-radius that encompasses the SERC site and geographic qualities that were likely of concern to the prehistoric inhabitants of the project vicinity. Staff identified a total of 54 cumulative projects in the six-mile buffer, all of which could contribute to a cumulative impact to archaeological resources because they involve ground disturbance.

The ground disturbance related to construction of the SERC in combination with other past, present, and reasonably foreseeable projects in the vicinity could have a cumulative impact on buried, as-yet unknown archaeological deposits, either historical or unique archaeological resources as defined under CEQA. However, Conditions of Certification **CUL-1** through **CUL-8** will reduce project-specific impacts to a less-than-significant level, and therefore the SERC's contribution to cumulative impacts on prehistoric and historic archeological resources will be less than cumulatively considerable.

The SERC will not directly impact any known ethnographic or built environment historical resource, thus it will not contribute to any cumulative impact to these types of historical resources.[22]

[19] Ex. 300, p. 4.3-28.

[20] Cal. Code Regs., tit. 14, § 15130.

[21] Ex. 300, p. 4.3-29.

[22] Ex. 300, p. 4.3-29.

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

The following federal, state, and local laws and policies apply to the protection of human remains and grave goods. The record examines the project's compliance with these requirements.

Cultural Resources Table 2
Laws, Ordinances, Regulations, and Standards[23]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
State		
Pub. Resources Code, section 5097.98 (b and e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until s/he confers with the Native American Heritage Commission (NAHC) identified most likely descendants (MLD) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.	**Compliant.** Conditions of certification require the property owner to coordinate with the NAHC and consult with the MLD to consider treatment options in the event Native American human remains are found on the project site. With the adoption of **CUL-1** through **CUL-8** the project as proposed is consistent with Public Resources Code §§5097.98(b) and (e).
Pub. Resources Code, section 5097.99	This code prohibits the disturbance or removal of human remains found outside a cemetery. It also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.	**Compliant.** Conditions of certification call for monitoring by a qualified Cultural Resources Specialist (CRS) and Native American monitor during ground disturbing activity. All discoveries are required to be reported to the Energy Commission Compliance Project Manager (CPM). With implementation of Conditions of Certification **CUL-1** through **CUL-8**, the project will comply with Public Resources Code section 5097.99.
Health and Safety Code, section 7050.5	Makes it a misdemeanor to disturb or remove human remains found outside a cemetery. It also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.	**Compliant.** Conditions of Certification **CUL-1** through **CUL-8** require the preparation of a Cultural Resources Monitoring and Mitigation Plan (CRMMP), which will describe the response and notification procedures described in this section of the Health and Safety Code. Construction workers will be instructed in these matters during the Workers Environmental Awareness Program (WEAP) required by Condition of Certification **CUL-5**. The CRS and Native American

[23] Ex. 300, pp. 4.3-3 – 4.3-5.

		monitor are authorized to halt work in the event human remains are discovered and required to notify the county coroner and CPM.
Civil Code, section 1798.24	Provides for non-disclosure of confidential information that may otherwise lead to harm of the human subject divulging confidential information.	**Compliant.** Participants who may come into contact with confidential cultural resources information are bound by confidentiality policies, standards, and formal contracts that ensure confidential cultural resource information will not be disclosed as a result of the SERC project. Any confidential information submitted to the Energy Commission is required to be submitted under Confidential Cover. The SERC will not lead to the disclosure of confidential site information maintained by any of the entities listed in Civil Code §1798.24.
Local		
Orange County General Plan 2015	Chapter VI, Resources Element Goal 4: Conserve open space lands needed for recreation, education, and scientific activities, as well as cultural-historic preservation.	**Compliant.** With the adoption of Conditions of Certification **CUL-1** through **CUL-8** the project as proposed is consistent with the Orange County General Plan, Chapter VI.
City of Anaheim Citywide Historic Preservation Plan 2010 (Plan)	The Plan is intended to assist the City and its residents in recognizing the importance of historic resources that are located throughout Anaheim, and to provide a framework for the identification and designation of those resources.	**Compliant.** The SERC will not impact historic resources identified in the Plan.

There were no cultural resources identified in the PAA that qualify as historical or unique archaeological resources for the purposes of CEQA. Thus, the evidence establishes that the SERC will comply with all identified LORS. Impacts to as-yet-unidentified prehistoric and historic archaeological resources that qualify as historical or unique under CEQA could occur during construction of the project. However, the record shows that Conditions of Certification **CUL-1** through **CUL-8** would mitigate such impacts to less-than-significant levels.[24]

AGENCY AND PUBLIC COMMENT

No agency or public comments were received on the topic of Cultural Resources.

[24] Ex. 300, p. 4.3-31.

FINDINGS OF FACT

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

1. The Applicant's consultants conducted archival research and pedestrian surveys of the project area of analysis.
2. Energy Commission staff and the Applicant conducted a full cultural resource inventory for the Stanton Energy Reliability Center site and linear facility routes, including both archival research and field surveys of the area.
3. Archival research at the South Central Coastal Information Center of the California Historical Resources Information System revealed that although 21 previously recorded resources had been identified within the project area of analysis surrounding the Stanton Energy Reliability Center project site, no previously identified cultural resources occurred on the project site.
4. The Stanton Energy Reliability Center will not have any effect on any previously recorded archaeological resources that are located outside the project boundaries.
5. The concrete lined storm drain located at 8230 Pacific Street is not eligible for listing on the California Register of Historic Resources and does not qualify as a historical resource under the California Environmental Quality Act.
6. The two late 1960s lattice-type steel transmission towers located on the project site are not eligible for listing on the California Register of Historic Resources and do not qualify as a historical resource under the California Environmental Quality Act.
7. The two buildings located at 10680 Fern Avenue are not eligible for listing on the California Register of Historic Resources and do not qualify as a historical resource under the California Environmental Quality Act.
8. The section of the Southern Pacific Railroad Los Alamitos Branch line analyzed in the record is not eligible for listing on the California Register of Historical Resources and does not qualify as a historical resource under the California Environmental Quality Act.
9. The Barre Substation is not eligible for listing on the National Register of Historic Places or the California Register of Historical Resources and does not qualify as a historical resource under the California Environmental Quality Act.
10. There are no significant historic structures either on or near the project site or linear routes that will be directly or indirectly affected by the project.
11. The Gabrielino Tongva and representative tribes are the Native Americans most directly related to the project vicinity.

12. The evidentiary record contains no positive identification of buried prehistoric archaeological resources on the Stanton Energy Reliability Center site.

13. Ground disturbance activities during construction of the Stanton Energy Reliability Center could damage unknown buried prehistoric archaeological resources.

14. Conditions of Certification **CUL-1** through **CUL-8** ensure that unknown archaeological deposits will be properly identified and treated so that project-related impacts thereto are reduced to insignificance.

15. The evidence does not identify any potential operational impacts to any California Register of Historic Resources eligible historical built-environment resources qualifying as historical resources under the California Environmental Quality Act.

16. Conditions of Certification **CUL-1** through **CUL-8** will mitigate impacts that may occur during repairs made to underground utilities during operations.

17. The project owner will implement a Cultural Resources Monitoring and Mitigation Plan to protect known and unknown resources, including avoidance, worker education, archeological monitoring, Native American monitoring, authority of a Cultural Resources Specialist to halt construction, and the filing of a periodic Cultural Resources Report.

18. There is no evidence that the Stanton Energy Reliability Center's incremental effect on cultural resources in conjunction with other projects in the area will be cumulatively considerable.

CONCLUSIONS OF LAW

1. Implementation of the mitigation measures described in the Conditions of Certification in **Appendix A** of this Decision ensures that the Stanton Energy Reliability Center will comply with all applicable laws, ordinances, regulations, and standards relating to cultural resources.

2. Implementation of the mitigation measures described and contained in the conditions of certification in **Appendix A** of this Decision, ensures that the Stanton Energy Reliability Center will not result in any significant direct, indirect, or cumulative impacts to cultural resources.

D. GEOLOGICAL AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

This section summarizes the Stanton Energy Reliability Center (SERC) project's potential exposure to geologic hazards as well as its potential impacts on geologic, mineralogical, and paleontological resources. The analysis includes whether the SERC 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 evaluates whether project construction or operation could potentially result in adverse impacts on geologic or mineralogical resources in the area. Finally, the analysis examines whether paleontological resources, such as fossilized remains or trace remnants of prehistoric plants or animals, could be present at the site and, if so, whether the SERC's potential impacts on these resources will be adequately mitigated.

Evidence on the topic of Geological and Paleontological Resources is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 14, 18, 28, 30, 31, 43, 53, 55, 56, 64, 65, 69, 92, 96, 100, and 300.[1]

SETTING AND PROJECT DESCRIPTION

The SERC site consists of two vacant parcels encompassing about four acres. It is located in an industrial area within the city of Stanton, Orange County, California at 10711 Dale Avenue, south of Standustrial Street and north of a railroad right-of-way (**Geological and Paleontological Resources - Figure 1**). The site is located on a gently sloping coastal plain that drains southwesterly towards the Pacific Ocean. The SERC site and the gas and water supply pipeline routes traverse flat terrain. The planned final grade of the site will vary from 71.8 feet above mean sea level in the east to 69.2 feet above mean sea level in the west. The generator transmission tie-line will run along a 0.35-mile-long, 66-kilovolt underground generator tie-line to Southern California Edison Barre Substation adjacent to the site.[2]

The SERC site is located in the southeastern portion of the Central Plain of the Los Angeles Basin between the Newport-Inglewood and Whittier fault zones within the Peninsular Ranges geomorphic province (see **Geological and Paleontological Resources Figure 1**).[3]

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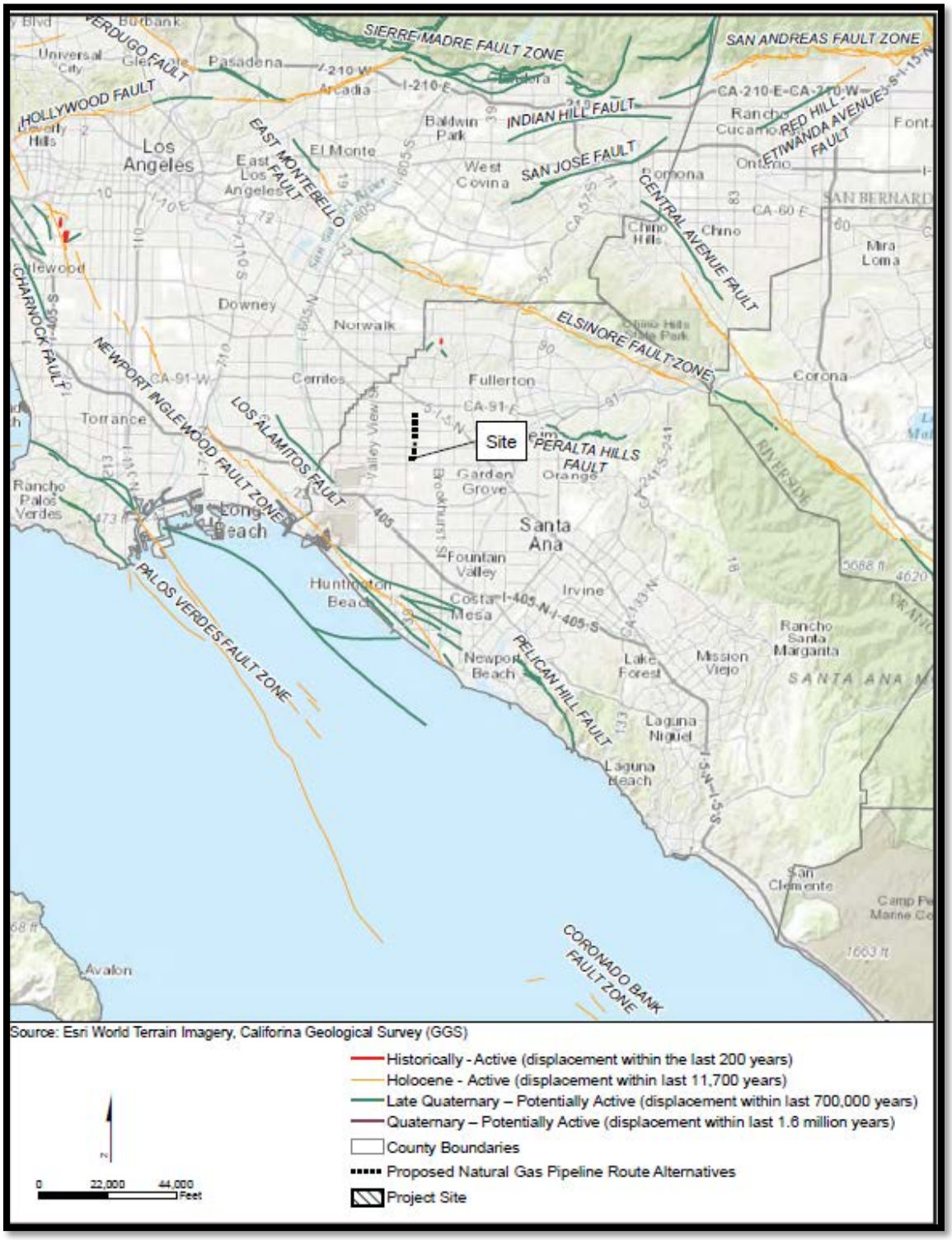
[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 300, pp. 5.2-1; 5.2-6; 5.2-8.

[3] Ex. 300Ex. 300, p. 5.2-7.

Geological and Paleontological Resources Figure 1 – Regional Fault Map



Source: Ex. 300, p. 5.2-42.

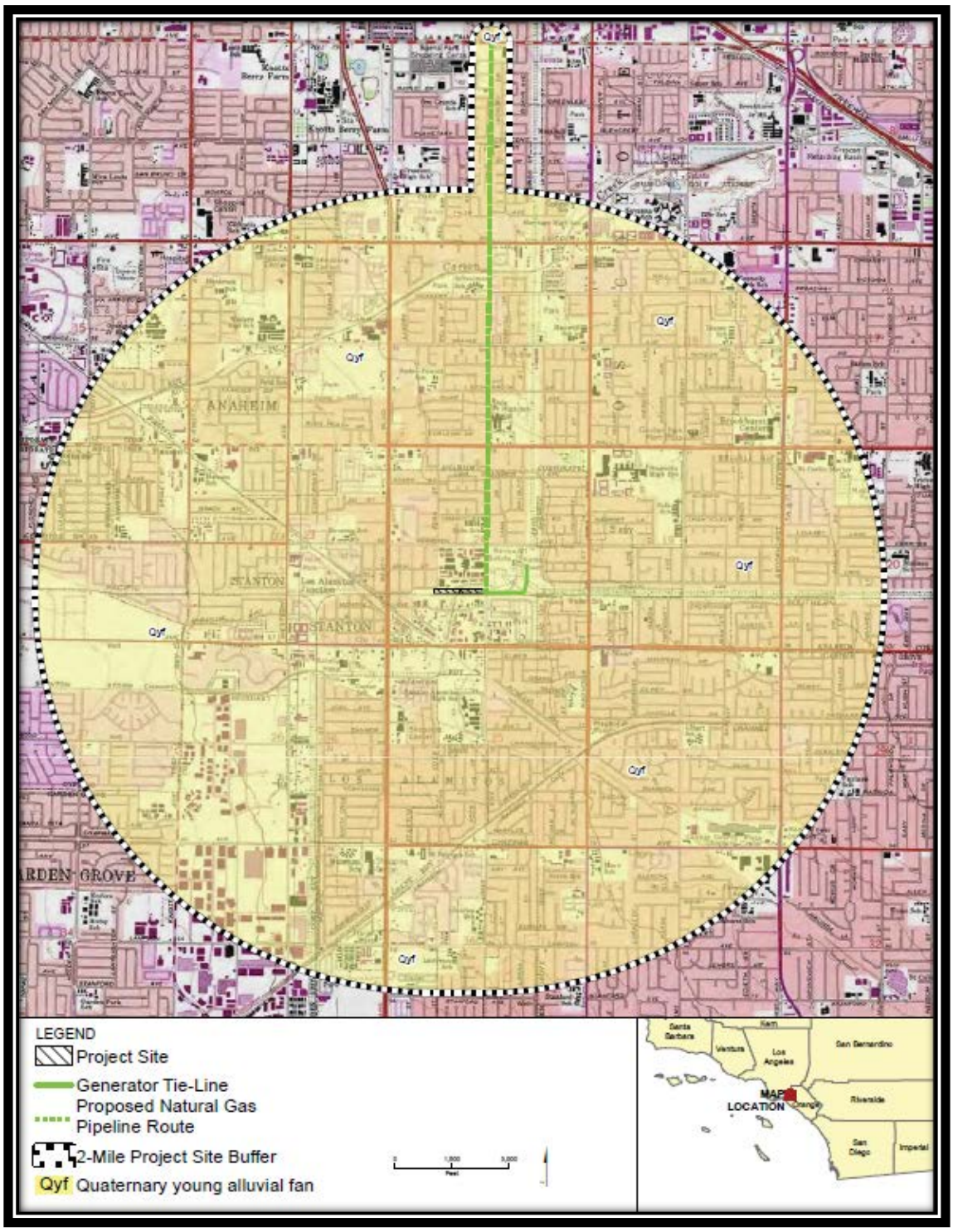
Regional geological maps of Orange County indicate that the surface of the SERC site is occupied by Holocene-age alluvium extending to a depth of about 75 feet. These are primarily silts, sands, and gravels, underlain by non-indurated to poorly indurated marine and non-marine Pleistocene-age sediments of the Lakewood and San Pedro formations. The Pleistocene units extend to depths of several hundred feet. The depth to the top of Tertiary-age sedimentary rock is more than 1,000 feet, and crystalline basement rock is about 24,000 feet deep in the site region.[4]

The surficial geology in the immediate vicinity of the SERC site is composed entirely of Quaternary age alluvial deposits (see **Geological and Paleontological Resources Figure 2**). The city of Stanton is about 6.5 miles west of the course of the Santa Ana River and two miles south of a fault zone running along the base of the Coyote Hills. The record indicates that agricultural activity has occurred across the eastern portion of the site, and the western portion of the site has been disturbed by current industrial activities. A one-foot layer of disturbed sediment and fill covers the entire site area. Below this fill are late Holocene age alluvial fan deposits. Quaternary-aged alluvium is encountered at the depth of 51.5 feet below the ground surface. The material underlying the entire project site is loose to moderately dense sand. Groundwater was encountered in all geotechnical borings at a depth of approximately 20 feet below ground surface.[5]

[4] Ex. 300Ex. 300, p. 5.2-7.

[5]Ex. 300Ex. 300, pp. 5.2-8 – 5.2-9.

Geological and Paleontological Resources Figure 2 – Surface Geology



For a general project description, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

Appendix G of the California Environmental Quality Act (CEQA) Guidelines provides a checklist for evaluating whether a project site could expose persons or structures to geologic hazards based on site-specific conditions, or destroy a unique paleontological resource or site, or a unique geological feature, or affect mineral resources or a mineral resource recovery site.[6]

The California Building Standards Code[7] provides geotechnical and geologic investigation and design standards, which engineers must follow when designing a facility subject to geologic hazards.[8]

GEOLOGIC AND MINERALOGIC RESOURCES

The evidence indicates that no viable mineral resources have been identified or developed in the area. The geological units at the surface and in the subsurface of the SERC site are widespread alluvial deposits that occur throughout the Los Angeles Basin area. There are no known commercial petroleum deposits and aggregate deposits present at the SERC site or in the immediate surrounding area. Construction of the SERC will not result in a loss of availability of a known mineral resource of value to the region and the residents of the state. According to undisputed expert testimony, the SERC project will have no effect on geological or mineralogical resources of commercial value or on the availability of such resources, and will not have any significant adverse direct or indirect impacts to potential geologic and mineralogical resources.[9]

PALEONTOLOGIC RESOURCES

The records search produced no evidence indicating that the alluvial sediments, upon which the SERC and its proposed natural-gas pipeline are sited, possess paleontological sensitivity. This is consistent with the young age of sediments on the SERC site and its manner of deposition. The area surrounding the SERC site is entirely developed, being covered with the concrete and asphalt composing the buildings and roads of metropolitan Orange County. There is no expectation of fossils or fossiliferous sediments at or near the surface because the project site is

[6] Cal.Code Regs., tit. 14, § 15000, **Appendix G**, sections V and XI.
[7] Cal.Code Regs., tit. 24.
[8] Ex. 300, pp. 5.2-9 – 5.2-10.
[9] Ex. 300, pp. 5.2-10 – 5.2-11.

on a coastal plain that is a region consisting of younger Quaternary (Holocene) sediments devoid of outcrops. Where bare ground is visible, its origin (native or fill) is uncertain. The currently undeveloped eastern portion of the site has been previously disturbed with grading and agricultural activities. No paleontological resources were identified in any of the 24 bag samples or 63 core samples obtained from the six geotechnical borings that extended 51.5 feet below the ground surface. Construction-related excavations at the project site, including the proposed natural-gas pipeline to depths of less than three feet, will affect sediments of no paleontological sensitivity and will result in no adverse impacts on paleontological resources. However, excavations for foundations and other components of the power generation facility itself will extend deeper than three feet, and may encounter older alluvial deposits.[10]

Although there is a low potential for significant fossils to be encountered in excavations in older alluvium at the site, we consider monitoring of construction activities necessary. Conditions of Certification **PAL-1** to **PAL-8** are designed to mitigate any potential paleontological resource impacts to a less than significant level. These conditions require a worker education program in conjunction with monitoring of earthwork activities by qualified professional paleontologists and recovery of any important paleontological resources.[11]

Any time potential fossils are recognized by either the paleontological monitor or a worker, earthwork will be halted in the immediate area of the find. A paleontological resource specialist (PRS) will be retained for the SERC project by the project owner to produce a monitoring and mitigation plan, conduct worker training, and provide on-site monitoring.

In accordance with Condition of Certification **PAL-3**, the Applicant will prepare a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) for approval by Energy Commission staff (Staff). The PRMMP functions as the formal guide for identifying where monitoring will occur based on sensitivity. The PRMMP will also define the reporting protocol should paleontological resources be discovered and identify collecting and sampling methods where monitoring is conducted. Earthwork would be halted in the immediate area of a find any time potential fossils are recognized by either the paleontological monitor or the worker. When properly implemented, the conditions of certification will yield a net gain to the science of paleontology since fossils that would not otherwise have been discovered can be collected, identified, studied, and properly curated.[12]

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[10] Ex. 300, pp. 5.2-10 – 5.2-12.

[11] Ex. 300, pp. 5.2-12 – 5.2-13.

[12] Ex. 300, p. 5.2-13.

GEOLOGICAL HAZARDS

Faulting and Seismicity

The tectonic setting of Southern California is complex and is made up of numerous fault systems, including strike-slip, oblique, thrust, and blind thrust faults. The tectonic deformation between the Pacific and North American plates is accommodated primarily by a zone of northwest trending strike-slip faults associated with the on-land portion of the San Andreas Fault system. In addition to the on-land faults, the tectonic shear is shared with faults in the offshore inner Continental Borderland region. However, within this complex zone of shear, areas of compression also occur. Major active and potentially active faults in the region are shown on **Geological and Paleontological Resources Figure 1**.

Review of geologic maps and literature pertaining to the SERC site area indicates that the site is not located within a state-designated earthquake fault zone. In addition, there are no known major or active faults mapped on the project site. Evidence for active faulting at the site was not observed during the geotechnical investigation.[13]

The record contains a detailed analysis of the active faults near the SERC site, including the Newport-Inglewood fault zone, Elsinore fault zone, Whittier fault, and Compton-Los Alamitos fault. The SERC site area can be characterized as an active seismic area, with potentially large-magnitude earthquakes.

Preliminary seismic design parameters for the SERC project site were developed according to current laws, ordinances, regulations, and standards (LORS). These parameters are based on the project's location, site "type" and site class, and can be updated as appropriate following the results presented in a project-specific geotechnical investigation report performed for the site. The assumed "Structure Risk Category" is "III," which is based on its inherent risk to people and the need for the structure to function following a damaging event. Risk categories range from I (non-essential) to IV (critical).[14]

The ground acceleration values presented are typical for the area. Other developments in the adjacent area would also be designed to accommodate strong seismic shaking. The potential for and mitigation of the effects of strong seismic shaking during an earthquake must be addressed in a project-specific geotechnical report, as required by the 2016 California Building Code (or the current version), Condition of Certification **GEO-1,** and Facility Design Conditions of Certification **GEN-1, GEN-5,** and **CIVIL-1**. Compliance with these conditions of certification

[13] Ex. 300, p. 5.2-14.

[14] Ex. 300, pp. 5.2-14 – 5.2-18.

ensure the SERC will be built to current seismic standards and potential impacts mitigated to insignificant levels in accordance with current standards of engineering practice.

Liquefaction

Liquefaction is a condition in which a saturated cohesionless soil may lose shear strength because of a sudden increase in pore water pressure caused by an earthquake. The SERC project site is mapped in a Liquefaction Investigation Zone on the State of California Seismic Hazard Zone Map for the Anaheim Quadrangle, which means that mitigation is required.[15]

The evidence indicates that some of the soil layers underlying the SERC site are susceptible to liquefaction. The analysis indicated that the liquefaction-induced settlements of up to 6 inches would occur within the loose to medium dense sand layers beneath the footprint of proposed structures for the design-event earthquake. In addition, differential settlements could be expected.[16]

The analyses in the record indicate that there is a significant potential for liquefaction, seismically-induced settlement and associated ground damage for the design-event earthquake. Soils in structure foundation areas will be removed to a horizontal plane at a minimum depth of three feet below the bottom of the deepest foundation or five feet below existing grade, whichever is deeper, generally extending five feet laterally beyond the perimeter of foundations. The exposed soil surface will be scarified to a depth of 12 inches, moisture conditioned, and compacted to a minimum of 90 percent relative compaction prior to placing any fill. A minimum of two layers of 12-inch-thick, geogrid–wrapped crushed aggregate base, compacted to at least 95 percent relative compaction, will be placed at the bottom of the over-excavated area. The reinforcing geogrids will be Tensar TriAx T160 or equivalent, overlapped a minimum of three feet for the bottom layer and one foot for the two upper layers.[17]

The detailed analysis and preliminary geotechnical design in evidence indicate appropriate measures are being considered for mitigation of potential impacts to structures. These methods of foundation improvement must be consistent with the requirements of the 2016 California Building Code (CBC), or the current version succeeding that code. Compliance with proposed Condition of Certification **GEO-1**, and **Facility Design** Conditions of Certification **GEN-1**, **GEN-5,** and **CIVIL-1** ensure the appropriate final design is implemented.[18]

[15] Ex. 300, p. 5.2-18.
[16] Ex. 300, p. 5.2-19.
[17] Ex. 300, p. 5.2-19.
[18] Ex. 300, p. 5.2-19.

Tsunamis, Seiches, and Sea Level Rise

Tsunamis are large-scale, seismic-sea waves caused by offshore earthquakes, submarine landslides, and/or volcanic activity. Tsunamis may be manifested in the form of wave bores or a gradual upwelling of sea level. Because the SERC will be located roughly 70 feet above mean sea level and more than eight miles from the Pacific Ocean, there is no potential for a tsunami event that would affect the site.

Seiches are defined as oscillations in confined or semi-confined bodies of water due to earthquake shaking. Because there are no large bodies of water near the project site, there is no potential for a seiche to impact the SERC.

The SERC project site is located more than eight miles inland from the Pacific Ocean and is not subject to the effects of sea-level rise.[19]

Corrosive Soils

Corrosive soils are typically considered as having chloride levels greater than 500 ppm, sulfate levels greater than 2,000 ppm, pH less than 5.5, or an electrical resistivity of less than 1,000 ohm-centimeters. Corrosive soil conditions may exacerbate the corrosion hazard to buried conduits, foundations, and other buried concrete or metal improvements. Corrosive soil could cause premature deterioration of underground structures or foundations. Constructing project improvements on corrosive soils could have a significant impact to the project.

Laboratory testing was performed on a representative sample of the on-site soils to evaluate the pH, minimum resistivity, chloride, and soluble sulfate content. The soil had a chloride content of 43 ppm, a soluble sulfate content of 120 ppm, a pH of 8.0, and a resistivity of 1,000 ohm-centimeters. Based on these analytical results, the site is considered “not corrosive” due to the chloride and sulfate concentrations. However, the potential for, and mitigation of, the effects of corrosive site soils must be addressed in a project-specific geotechnical report as required under the 2016 CBC (or the current subsequent version) and Condition of Certification **GEO-1**, as well as Facility Design Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1**. Typical mitigation techniques include epoxy and metallic protective coatings, the use of alternative (corrosion resistant) materials, and selection of the appropriate type of cement and water/cement ratio.[20]

Other Geologic Hazards

Based on the evidence, the likelihood of other geologic hazards such as subsidence, hydrocompaction, compressible soils, expansive soils, and mass

[19] Ex. 300, p. 5.2-23.

[20] Ex. 300, p. 5.2-22.

wasting occurring at the project site is considered low. However, the presumed low risk of these geologic hazards at the site must be confirmed in the project-specific geotechnical investigation. Implementation of **Facility Design** Conditions of Certification **GEN-1, GEN-5** and **CIVIL-1** will ensure that potential impacts related to these phenomena are reduced to less than significant levels.[21]

Operation Impacts and Mitigation

The evidence indicates that operation of the SERC plant facilities will not have any adverse impact on geologic, mineralogical, or paleontological resources. Once the plant is constructed and operating, there will be no further disturbances that could affect these resources.[22]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[23]

The SERC Master Cumulative Project List is contained within the **PROJECT DESCRIPTION** section of this Decision. The record identified three projects within six miles of the SERC site that are approved, under review, or under construction. The SERC will not cause adverse impacts on geological resources and will not cause an exposure of people or property to geological hazards. Additionally, there are no minor impacts that could combine cumulatively with those of other projects. Thus, the SERC will not result in a cumulatively considerable impact.[24]

No surface or near surface geologic and mineralogical resources have been identified in the project area. Development of the SERC is not expected to lead to a significantly cumulative effect on geologic and mineralogical resources within the project area.

There is a low potential for significant fossils to be encountered in excavations at the site. However, if significant paleontological resources are uncovered during construction, they will be protected and preserved in accordance with Conditions of Certification **PAL-1** to **PAL-8**. These conditions will also mitigate any potential cumulative impacts.

[21] Ex. 300 pp. 5.2-20 – 5.2-23.
[22] Ex. 300 pp. 5.2-23 – 5.2-24.
[23] Cal. Code Regs., tit. 14, § 15130.
[24] Ex. 300, p. 5.2-24.

The proposed SERC site will be situated in an active geologic environment. Strong ground shaking potential must be mitigated through foundation and structural design as required by the 2016 CBC, or the most current version succeeding that code. The potential for lateral spreading and liquefaction will be addressed and mitigated through appropriate facility design. Soils that may be subject to settlement due to liquefaction and dynamic compaction will be addressed and mitigated in accordance with a design-level geotechnical investigation as required by the 2016 CBC, or the most current subsequent version, and Condition of Certification **GEO-1**, and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5,** and **CIVIL-1**.[25]

Based on the foregoing, we find that the potential adverse cumulative impacts to project facilities from geologic hazards during its design life are not cumulatively considerable. Similarly, the record shows the potential adverse cumulative impacts to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the SERC project, if any, are not cumulatively considerable.

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

Geological and Paleontological Table 1 provides an assessment of the SERC's compliance with applicable LORS pertaining to geological and paleontological resources.

Geological and Paleontological Resources Table 1
Laws, Ordinances, Regulations, and Standards [26]

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
State		
California Building Code (CBC), 2016, as amended by the city of Stanton	Includes a series of standards that are used in project investigation, design, and construction (including seismicity, grading and erosion control). The CBC has adopted provisions in the International Building Code and has been amended by the city of Stanton.	**Compliant.** Condition of Certification **GEO-1** requires the project owner to submit a *Soils Engineering Report* to the Chief Building Official (CBO) for design review. This report must include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity; liquefaction; dynamic compaction; compressible soils; and corrosive soils. In addition, the report must also include recommendations for ground improvement and/or foundation systems

[25] Ex. 300, p. 5.2-24.

[26] Ex. 300Ex. 300, pp. 5.2-3 – 5.2-5.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
		necessary to mitigate these potential geologic hazards, if present.
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), §§2621–2630 (PRC 2016a)	Directs the California Geological Survey to identify known active faults in California and directs that mitigation for surface fault rupture of known active faults beneath occupied structures be implemented. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings.	**Compliant.** Condition of Certification **GEO-1** requires the project owner to submit a *Soils Engineering Report* to the CBO for design review. This report must include a thorough discussion of seismicity.
Seismic Hazards Mapping Act, PRC §§2690–2699 (PRC, 2016b)	Identify areas (zones) that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches. Requires a geotechnical report be prepared that defines and delineates any seismic hazard prior to approval of a project located in a seismic hazard zone.	**Compliant.** Condition of Certification **GEO-1** requires the project owner to submit a *Soils Engineering Report* to the CBO for design review. This report must include a thorough discussion of seismicity and recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.
Professional Engineers Act (Business and Professions Code §§6700-6799); Geologist and Geophysicist Act (Business and Professions Code §§7800-7887)	Establishes the criteria for professional licensing of Engineers, Geologists and Geophysicists in California, and defines what constitutes professional work in the fields of engineering, geology and geophysics that require the signature and seal of a licensed professional.	**Compliant.** Condition of Certification **GEO-1** requires the project owner to submit a Soils Engineering Report to the CBO for design review. A California licensed professional is required to sign and seal this report. **Compliant.** Condition of Certification **PAL-7** requires the portions of the Soils Engineering Report that involve an independent judgment or analysis of the earth's crust and the rocks and other materials which compose it, be done by or under the responsible charge of an appropriately licensed person.
Local		

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
City of Stanton General Plan 2013	Addresses public safety and welfare in the city through implementation of its General Plan. General Plan policies specific to geologic, soil, and seismic hazards are listed in the Public Safety Element.	**Compliant.** Condition of Certification **GEO-1** requires the project owner to submit a *Soils Engineering Report* to the CBO for design review. This report must include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity; liquefaction; dynamic compaction; compressible soils; and corrosive soils. In addition, the report must also include recommendations for ground improvement and/or foundation systems necessary to mitigate these potential geologic hazards, if present.
County of Orange General Plan 2005 as amended in 2012, including 2015 Land Use Element	A blueprint for growth and development of Orange County. Chapter IV of the plan requires assessment and mitigation of affected natural resources.	**Compliant.** There are no known or expected geologic resources at the site. Conditions of Certification **PAL-1** through **PAL-8** were developed based upon the guidance provided by the Society for Vertebrate Paleontology (SVP) and Bureau of Land Management (BLM) standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction.
Society for Vertebrate Paleontology (SVP, 2010)	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 (PRPA) of 2009. The SVP impact mitigation guidelines establish criteria for identifying and assessing significant paleontological resources. Additionally, these guidelines include standards and procedures to be employed prior to site disturbance, in monitoring during disturbance, and in	**Compliant.** Conditions of Certification **PAL-1** through **PAL-8** were developed based upon the guidance provided by the SVP and BLM standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. Conditions of Certification **PAL-1** through **PAL-8** require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.

APPLICABLE LORS	DESCRIPTION	DISCUSSION/CONCLUSION
	preservation/mitigation of identified resources.	
BLM Instructional Memorandum 2008-009	The Potential Fossil Yield Classification (PFYC) System for Paleontological Resources on Public Lands (IM 2008-009) provides an up-to-date classification system for paleontological resources, which is based on the potential for the occurrence of significant paleontological resources and the risk for impacts to the resource. Although primarily a classification guide IM 2008-009 also provides guidance on pre-construction and construction activities necessary to implement the classification, management, and protection of paleontological resources on lands managed by the BLM. While not required on non-BLM lands, the methodologies are useful for all paleontological studies, regardless of land ownership.	**Compliant.** Conditions of Certification **PAL-1** through **PAL-8** were developed based upon the guidance provided by the BLM and SVP standards to ensure that, if present, paleontological resources would be properly identified and appropriate protection or salvage measures implemented to mitigate the loss of these resources due to construction. Conditions of Certification **PAL-1** through **PAL- 8** require identification of a qualified Paleontological Resource Specialist, identification of qualified Paleontological Resource Monitors, training of site workers, periodic reporting, and collection, documentation and archival of any significant paleontological resources identified.

With implementation of Condition of Certification **GEO-1,** and Conditions of Certification **PAL-1** through **PAL-8**, we find that the SERC will be designed and constructed in accordance with all applicable LORS, and in a manner that both protects geologic, mineralogical, and paleontological resources, and assures public safety.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Geological and Paleontological Resources.

FINDINGS OF FACT

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

1. The project site and linear facilities are located on a coastal plain that drains southwesterly towards the Pacific Ocean within the Peninsular Ranges geomorphic province of Southern California.
2. The Stanton Energy Reliability Center site is mapped as an area with no aggregate significance and no known active areas of mining for mineral resources.
3. The Stanton Energy Reliability Center project will have no effect on oil and gas production or on other geologic resources of commercial value or on the availability of such resources.
4. The Stanton Energy Reliability Center will not have any significant adverse direct or indirect impacts to potential geological and mineralogical resources.
5. There is a low potential for significant fossils to be encountered in site excavations during construction.
6. Conditions of Certification **PAL-1** through **PAL-8** require a worker education program in conjunction with monitoring of earthwork activities by a qualified paleontological resource specialist.
7. A paleontological resource specialist will produce a monitoring and mitigation plan and provide on-site monitoring.
8. Conditions of Certification **PAL-1** through **PAL-8** will mitigate any potential paleontological resource impacts to a less than significant level.
9. No active faults are shown on published maps as crossing the boundary of new construction on the Stanton Energy Reliability Center power plant site or associated linear facilities.
10. The probability that the Stanton Energy Reliability Center site will experience surface fault rupture during the project's design life is considered low.
11. The potential for and mitigation of the effects of strong seismic shaking during an earthquake must be addressed in a project-specific geotechnical report, as required by the most current version of the California Building Standards Code (California Code of Regulation title 24).
12. Condition of Certification **GEO-1** and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** address the design requirements

for strong ground shaking consistent with the Seismic Hazards Mapping Act and the California Building Standards Code.

13. Compliance with these conditions of certification will ensure the project is built to current seismic standards and potential impacts will be mitigated to insignificant levels in accordance with current standards of engineering practice.

14. The potential for liquefaction to occur at the site is moderate based on the depth and thickness of the liquefiable soil, while the potential for surface expression of liquefaction is considered low.

15. Groundwater levels must be confirmed and the liquefaction potential on the Stanton Energy Reliability Center site must be addressed in a project-specific geotechnical report as required by the most recently adopted version of the California Building Standards Code.

16. The entire Stanton Energy Reliability Center site lies at an elevation of roughly 70 feet above mean sea level and is more than eight miles from the Pacific Ocean.

17. There is no potential for a tsunami event that would affect the Stanton Energy Reliability Center site.

18. There is no potential for a seiche event that would affect the Stanton Energy Reliability Center site.

19. The Stanton Energy Reliability Center site soils are classified as not corrosive.

20. The potential for corrosive soils on the Stanton Energy Reliability Center site must be addressed in a project-specific geotechnical report, pursuant to the most current version of the California Building Standards Code, and Condition of Certification **GEO-1**, as well as **FACILITY DESIGN** Conditions of Certification **GEN-1, GEN-5,** and **CIVIL-1**.

21. Compliance with the project-specific geotechnical report, pursuant to requirements of the most current version of the California Building Standards Code, Condition of Certification **GEO-1**, and **FACILITY DESIGN** Conditions of Certification **GEN-1**, **GEN-5,** and **CIVIL-1** will ensure that any potential corrosive soil hazard is mitigated to insignificant levels.

22. The likelihood of geologic hazards such as lateral spreading, dynamic compaction, hydrocompaction, compressible soils, expansive soils, landslide, flooding, seiches, and volcanic hazards occurring at the Stanton Energy Reliability Center site is considered low.

23. Operation of the Stanton Energy Reliability Center plant facilities will not have an adverse impact on geologic, mineralogical, or paleontological resources.

24. Potential adverse cumulative impacts to potential geologic, mineralogical, and paleontological resources from the construction, operation, and closure of the Stanton Energy Reliability Center project, if any, are not cumulatively considerable.

25. The Stanton Energy Reliability Center will be designed and constructed in accordance with all applicable laws, ordinances, regulations, and standards, and in a manner that both protects geologic, mineralogical, and paleontological resources and assures public safety.

CONCLUSIONS OF LAW

1. Implementation of the **FACILITY DESIGN** and **GEOLOGICAL AND PALEONTOLOGICAL RESOURCES** conditions of certification contained in **Appendix A** of this Decision ensure that project activities will not cause significant adverse direct, indirect, or cumulative impacts to geologic, mineralogical, or paleontological resources.

2. Compliance with the **FACILITY DESIGN** and **GEOLOGICAL AND PALEONTOLOGICAL RESOURCES** conditions of certification contained in **Appendix A** will ensure that the Stanton Energy Reliability Center will conform to all applicable laws, ordinances, regulations, and standards related to geologic, mineralogical, and paleontological resources.

VI. LOCAL IMPACT ASSESSMENT

In the following sections of this Decision, we review whether the Stanton Energy Reliability Center (SERC) will result in significant local impacts on nearby population centers, including an excessive burden on community services; unmitigated noise, increased traffic congestion, and/or adverse visual effects. These potential impacts are discussed under the technical topics of **LAND USE**, **SOCIOECONOMICS**, **NOISE**, **TRAFFIC AND TRANSPORTATION**, and **VISUAL RESOURCES**.

A. LAND USE

INTRODUCTION

This land use analysis addresses the SERC's compatibility with existing or reasonably foreseeable[1] land uses; consistency with applicable laws, ordinances, regulations, and standards (LORS); and potential project related direct, indirect, and cumulative environmental effects.[2]

Evidence on the topic of Land Use is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 16, 28, 29, 30, 31, 33, 34, 46, 55, 56, 60, 100, 104, 300, 302 and 307.[3]

SETTING AND PROJECT DESCRIPTION

The SERC site is located in the city of Stanton, Orange County, California. The approximate three-square mile sized city borders the cities of Anaheim, Cypress, Garden Grove, and Westminster.[4] The project site is located near the center of the city of Stanton's main "industrial" district. The industrial district includes a mix of uses: industrial, heavy commercial, and residential. The location, setting, and equipment of the SERC is described in more detail in the **PROJECT DESCRIPTION** section of this Decision.[5]

Existing land uses immediately adjacent to and nearby the SERC site include overhead high voltage transmission power lines and towers within a transmission corridor to the north; the Barre Substation, Barre Peaker plant (49 megawatts), transmission lines, towers and poles to the east; railroad track and self-storage facility, and the city of Stanton

[1] Whether a project is reasonably foreseeable (i.e., a "probable future project") for purposes of cumulative impact analysis depends on the nature of the resource in question, the location of the project, and the type of project. (Cal. Code Regs., tit. 14, §15130(b)(2)).
[2] Ex. 300, p. 4.6-1.
[3] 8/2/18 RT pp. 29:20 – 30:14; 35:25 – 38:19
[4] Ex. 300, p. 4.6-3.
[5] Ex. 300, p. 4.6-4.

Corporation Yard to the west. Single- and multi-family residences are farther west and to the southeast.[6]

General Plan Land Use and Zoning Designations

City of Stanton General Plan Land Use and Zoning Designations

City of Stanton General Plan

The City of Stanton General Plan designates the SERC site as "Industrial."

City of Stanton Zoning

The Project site is located in the Industrial General (IG) zone. The SERC is a utility service facility and thus would require a conditional use permit (CUP).[7] In addition, structures in the IG zone may not exceed 32 feet in height. The SERC's two combustion turbine generators will have a 50-foot tall exhaust stack with an exhaust diffuser; together the structure would be approximately 70 feet in height. Each exhaust stack would be housed in a 70-foot tall enclosure that would contain acoustic barriers. Also, the SERC's gas turbine variable bleed valve duct would be 43-feet tall. These structures would require a variance under the city of Stanton Municipal Code.[8]

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

According to the California Environmental Quality Act (CEQA)[9], a project results in significant land use impacts if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.
- Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural uses.

[6] Ex. 300, pp. 4.6-4, 4.6-6; 4.6-8; 4.6-12.

[7] Stanton Municipal Code, §§ 2.220.020, 20.550.060.

[8] Stanton Municipal Code, §2.555.050; Ex. 300, pp. 4.6-16; 4.6-20.

[9] The CEQA statute, California Public Resources Code § 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 may refer to the statute and the Guidelines collectively as "CEQA".

- Physically divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction, over the project. This includes, but is not limited to, a General Plan, community or specific plan, local coastal program, airport land use compatibility plan, or zoning ordinance.
- Create individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts.[10]

In addition, a power plant and its related facilities may be incompatible with existing or planned land uses, resulting in potentially significant impacts, if they create unmitigated noise, dust, or a public health or safety hazard or nuisance; result in adverse traffic or visual impacts; or preclude, interfere with, or unduly restrict existing or future uses. Please see other sections of this document, as noted, for a detailed discussion of any additional potential project impacts and recommended mitigation and conditions of certification.

Impact Assessment and Mitigation

Conversion of Farmland

The evidence shows that the SERC site does not contain, and would therefore not convert, any farmland that has been designated as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, or Farmland of Local Importance to non-agricultural use.[11]

We therefore find that the SERC will have no impact with respect to farmland conversion.

Conflict with existing Agricultural Use Zoning

The evidence shows that the SERC is located on land zoned “industrial” and thus would not conflict with agricultural zoning.[12]

We therefore find that the SERC will not conflict with or have an impact on existing agricultural use or zoning and therefore have no impact.

Conflict with Williamson Act Contracts

[10] CEQA Guidelines, tit. 14, App. G, §§ II, X.
[11] Ex. 300, p. 4.6-6.
[12] Ex. 300, p. 4.6-6.

The California Land Conservation Act, commonly referred to as the Williamson Act, enables local governments to enter into contracts with private landowners that restrict specific parcels of land to agricultural or related open space uses.[13] The evidence establishes that the SERC is not located on land that is under a Williamson Act contract.[14]

We therefore find that there is no conflict between a Williamson Act contract and the SERC and, accordingly, no significant impact to Williamson Act lands.

Conflict with Timberland Production and Zoning

The evidentiary record establishes that the SERC site is not zoned for forestland, timberland, or for timberland production. In addition, there is no land zoned for such purposes within one mile of the project site.[15]

We therefore find there will be no conflict with, or cause for, rezoning of forestland or timberland and as a result there will be no impact to forestland or timberland.

Physically Divide an Existing Community

The SERC would be infill development in an industrial use area that borders a high-voltage transmission line corridor approximately 150 feet wide. This use has been present since at least 1967.[16]

We therefore find that the SERC will not physically divide or disrupt any community within the city of Stanton.

Conflict with Habitat Conservation Plan or Natural Community Conservation Plan

The evidence establishes that the SERC is not located within either a Habitat Conservation Plan or a Natural Community Conservation Plan.[17]

We therefore find that there will be no conflicts with a conservation plan because of the SERC and thus there is no impact.

Conflict with Any Applicable Land Use Plan, Policy, or Regulation

For a discussion of the SERC's consistency with applicable LORS for land use planning, policy, or regulation, please see the discussion in **Land Use Table 2**, below. Based on the evidence, we have found that the SERC would be entitled to a conditional use permit and a variance, but for the exclusive power plant jurisdiction of the Energy Commission

[13] Gov. Code §§ 51200—51207.
[14]Ex. 300, p. 4.6-6.
[15] Ex. 300, p. 4.6-6.
[16] Ex. 300, p. 4.6-7.
[17] Ex. 300, p. 4.6-8.

as explained in the Compliance with LORS section, below (see **Land Use Table 2**).[18] We find that the SERC will not have a significant effect on the environment under this criterion.[19]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects; (2) other current projects; and (3) probable future projects.[20]

The "SERC Master Cumulative Project List" is contained in the **PROJECT DESCRIPTION** section of this Decision. Energy Commission staff (Staff) reviewed the SERC Master Cumulative Project List for projects that would contribute land use impacts in conjunction with the SERC. Four projects were found within the vicinity of the SERC that could possibly contribute to land use impacts. Those projects are listed in **Land Use Table 1**.[21]

Land Use Table 1
Cumulative Projects

	Project Title	Description	Location	Distance to Stanton (Miles)	Status
1	PPD-780	Construction of a 2,418 square foot fast food restaurant with drive-through	7952 Cerritos Ave. and 10511-10529 Beach Blvd., Stanton	0.39	Tentative Completion - Summer 2017
2	PPD-774	Construction of a four unit condominium project	7921 Second St., Stanton	0.58	Building Plan Check
3	PPD-783	Two new commercial office buildings	10441/10425 Magnolia Ave., Stanton	0.74	Still in entitlement process
4	PPD-777	Construct commercial development including a retail pad building, drive-through restaurant, gas station and a drive through car wash	11382-11430 and 11462 Beach Blvd., Stanton	0.76	Building Plan Check

Ex. 300, p. 4.6-9.

The SERC and the four projects will not make a significant contribution to regional impacts related to new development and growth. The project is planned to serve the existing and anticipated electrical needs of the growing population in the project area by connecting to

[18] Public Resources Code § 25500.
[19] Ex. 300, pp. 4.6-7 – 4.6-8.
[20] Cal. Code Regs, tit. 14, §§ 15065, subd. (a)(3); 15130.
[21] Ex. 300, p. 4.6-9

the existing electric system and other utility infrastructure. The evidence establishes that the land use effects of the SERC, in combination with past, present, and reasonably foreseeable projects in the area, would not be cumulatively considerable.[22]

Based on the evidentiary record, we find that cumulative land use impacts of the SERC will be less than significant.

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

Land Use Table 2 lists the local land use LORS applicable to the SERC. There are no identified applicable federal or state LORS.[23]

Land Use Table 2
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
City of Stanton General Plan Chapter 2: Community Development Resolution No. 2008-36 adopted September 23, 2008	The Community Development chapter (element) describes the type of appropriate land uses including development intensity and density throughout the city, encourages investment to improve and maintain the quality of existing neighborhoods and business districts in the city, and establishes goals and policies to promote appropriate development and redevelopment within the city. The General Plan Land Use Diagram illustrates the land use concept. It shows the pattern and extent of future land uses and highlights four mixed-use districts as the focus of specific opportunities for future enhancement. The General Plan Land Use Diagram should be used as general guide for the identification of the location of	**Compliant.** The project site is designated Industrial as shown on the city's General Plan Land Use Diagram. The four-acre site is surrounded by commercial and light industrial uses. Presently the eastern portion of the project site is undeveloped. The western portion of the project site has a couple of single story wood structures, truck parking, and wooden pallet storage. Letter from the City states, "The City of Stanton has been working closely with Stanton Energy Reliability Center, LLC (SERC LLC) regarding the development of the Stanton Energy Reliability Center (Stanton) to be located within the City of Stanton at 10711 Dale Avenue. The City of Stanton agrees that the use of the site for the Stanton project is consistent with our zoning ordinance and General Plan designations."[24]

[22] Ex. 300, p. 4.6-8 – 4.6-10.
[23] Ex. 300, p. 4.6-3.
[24] Ex. 300, pdf pgs. 420-421 of 948.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
	various land uses in the city. The map should be used in combination with the written goals and policies in the Community Development Element. "The Industrial designation is intended to provide for a variety of industrial and office uses. Uses include manufacturing, processing, research and development, product assembly, storage, warehousing and distribution, and industrial services. Development in the designation is intended to: Provide a high-quality, safe and healthy working environment for employees; Retain a high-quality, campus like feel throughout; and Minimize conflict between the industrial uses in the designation and adjacent land uses, especially residential and open space/recreation designations. Development within this designation should be contained on large or multiple parcel areas that should retain a similar look and feel between them. Floor area ratios (FAR) for development are limited to a maximum of 1.0 though increases are available for situations where there is a special need." (COS 2008, pp. 2-5–2-6)	The SERC facility would not be open to the public. It would be unstaffed and operated remotely. A "floor area ratio" (FAR) affects volume, shape, and spacing of buildings on the land. The FAR[25] for the proposed project is conservatively estimated to be 0.7 which is less than the 1.0 maximum set forth in the General Plan policy.[26]

[25] "In practice, this ratio is constant for a zone. A floor area ratio of 1.0 means that floor area may equal lot area. FAR 5.0 means that the floor area may be up to five times as large as the lot area; and FAR 0.5 that it may be no more than half the lot area." (American Planning Association, "Floor Area Ratio," <https://www.planning.org/pas/reports/report111.htm>).

[26] Ex. 300, p. 4.6-11.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
City of Stanton Municipal Code Title 20 Chapter 20.220 Industrial Zone	Section 20.220.020 Industrial Zone Land Uses and Permit Requirements Synopsis from Section 20.220.020 Table 2-7 Allowed Uses and Permit Requirements; Conditional Use Permit; Utility Service Facilities Table 2-8 Development Standards; Industrial Zones Height Requirement; 32 feet – primary structure and accessory structure	**Compliant.** The project site is in the Industrial General (IG) zone as shown on the city Zoning Map. The proposed use would be allowed in the zone pending the granting (approval) of a conditional use permit (CUP) for a utility service facility. The project also would require approval of a variance to allow structures to exceed the 32-foot height requirement of the IG zone. The city of Stanton CUP and variance procedures are subsumed in the Energy Commission certification process because of the Commission's exclusive permitting authority over thermal power projects.[27] The city of Stanton CUP findings from section 20.550.060, and variance findings from section 20.555.050 of the Zoning Code are discussed below.
SECTION 20.550.060 - CONDITIONAL USE PERMIT		**FINDINGS AND DECISION**
	Required findings. To grant a conditional use permit, the following findings are required: 1. The proposed use is consistent with the General Plan and any applicable specific plan; 2. The proposed use is allowed within the applicable zone and complies with all other applicable provisions of this Zoning Code and the Municipal Code; 3. The design, location, size, and operating characteristics of the proposed activity will be compatible with the existing and future land uses in the	**Compliant**. The SERC site designated Industrial, which "is intended to provide for a variety of industrial and office uses. Uses include manufacturing, processing, research and development, product assembly, storage, warehousing and distribution, and industrial services. . ." The four–acre project site is in the Industrial General (IG) zone. The SERC is allowed in this zone with our approval of a CUP for a utility service facility. Land adjoining the project site to the north serves as a high-voltage transmission line corridor. The transmission lines enter the 35-

[27] Pub. Res. Code § 25500.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
	vicinity; 4. The site is physically suitable in terms of: a. Its design, location, shape, size, and operating characteristics of the proposed use; b. The provision of public and emergency vehicle (e.g., fire and medical) access; c. Public protection services (e.g., fire protection, police protection, etc.); d. The provision of utilities (e.g., potable water, schools, solid waste collection and disposal, storm drainage, wastewater collection, treatment, and disposal, etc.); and e. Served by highways and streets adequate in width and improvement to carry the kind and quantity of traffic the proposed use would likely generate. 5. The site's suitability ensures that the type, density, and intensity of use being proposed will not adversely affect the public convenience, health, interest, safety, or general welfare, constitute a nuisance, or be materially detrimental to the improvements, persons, property, or uses in the vicinity and zone in which the property is located; and 6. The applicant agrees in writing to comply with any and all of the conditions imposed by the review authority in the approval of the Conditional Use Permit or Minor Use Permit.[28]	acre Barre Substation to the east. To the south is a railroad track and self-storage facility. The city of Stanton Corporate Yard is to the west. There are no schools, parks, or recreational areas adjacent to the project site. The project is located on the west side of Dale Avenue between West Cerritos and Katella Avenues. Dale Avenue is a north-south four-lane divided road with a continuous left-turn lane. It is a secondary corridor. A right-of-way apron on Dale Avenue serves the project site. Emergency service vehicles would have access to the SERC site from Dale Avenue and Pacific Street (a secondary access). State Route 39 (Beach Boulevard), an eight-lane divided roadway with a raised median, is a half-mile away. Beach Boulevard is a primary corridor. It provides local access to residential, commercial, retail, and industrial centers. The project owner will be required to provide a traffic control/management plan to address movement of workers, vehicles, and materials including arrival and departure schedules. Refer to the **Traffic and Transportation** section of this Decision. The project owner will be required to provide a fire protection and prevention program to Energy Commission staff and the Orange County Fire Authority prior to the construction and operation of the project, so they can confirm the adequacy of proposed fire

[28] Stanton Municipal Code, §20.550.060, subd. (b).

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
		protection measures. Refer to the **Worker Safety and Fire Protection** section of this Decision. The **Hazardous Materials Management** section of this Decision requires a construction site security plan, and an operation security plan that includes a protocol for contacting law enforcement and Energy Commission staff in the event of suspicious activity or emergency, and response times for hazardous material incidents. Water for the SERC will be supplied by Golden State Water Company via a connection adjacent to the project site within Dale Avenue. In addition, wastewater from the project would be discharged to the city of Stanton's sanitary sewer system, whose flow is ultimately received and treated by Orange County Sanitation District. See the **Soil & Water** section of this Decision. We find that the SERC is entitled to a Conditional Use Permit in compliance with Stanton Municipal Code section 20.550.060, and pursuant to Public Resources Code section 25500, grant the Conditional Use Permit.
SECTION 20.555.050 - VARIANCE		**FINDINGS AND DECISION**
	A variance may be granted only where: 1. There are special circumstances or conditions applicable to the subject property (e.g., location, shape, size, surroundings, topography, or other physical features, etc.) that do not apply generally to other properties in the vicinity under	**Compliant.** Primary and accessory structures in the IG zone are limited to 32 feet, unless a variance is granted. The SERC's turbine generators exhaust stacks and exhaust diffusers will be housed in an approximately 70-foot tall structure, and its gas turbine variable bleed valve duct will be 43-feet tall. Because of its exclusive permitting authority over

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
	an identical zoning classification; 2. Strict compliance with Zoning Code requirements would deprive the subject property of privileges enjoyed by other property in the vicinity and under an identical zoning classification; 3. Approving the Variance or Minor Variance would not constitute a grant of special privilege inconsistent with the limitations on other properties in the same vicinity and zone in which the subject property is situated; and 4. The requested Variance or Minor Variance would not allow a use or activity that is not otherwise expressly authorized by the regulations governing the subject parcel.[29]	thermal power projects, the Energy Commission's certification process subsumes jurisdiction to make the required findings for a variance.[30] A special condition(s) applicable to the subject property due to its location exists that does not apply to other properties in the vicinity in the IG zone. The project site to the north adjoins a high-voltage transmission line corridor. Two steel lattice dead-end towers standing about 185-feet tall are within this portion of the corridor. This segment of the transmission line corridor is within the IG zone. The high voltage lines feed into the Barre Substation across the street from the project site. The 35-acre substation, constructed 1939-41, has a feeder bay, transformer structure, racks, and transmission towers that exceed 100-feet tall. Also on the substation site is the Barre Peaker Plant that began commercial operation in 2007 and has an 80-foot tall flue gas stack. The 66kV transmission tap line serving the Barre Plant stands approximately 90-feet tall.[31] The Barre Substation is in the IG zone. Approving the variance would not constitute a grant of special privilege inconsistent with the limitation on other properties in the same vicinity and zone as the subject property. The City Manager of Stanton indicated that the city supports approval of the height variance with the proposed architectural cladding of the stacks.[32] In light of the foregoing, We find that the SERC is entitled to a

[29] Stanton Municipal Code, § 20.555.050, subd. (B).

[30] Pub. Res. Code § 25500.

[31] Ex. 300, p. 4.6-15

[32] Ex. 300, p. 4.6-20.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/ CONCLUSION
		variance in compliance with Stanton Municipal Code section 20.555.050, and pursuant to Public Resources Code section 25500, grant the variance.

We find that the SERC is consistent with the land use policies, plans, and regulations of the city of Stanton.

AGENCY AND PUBLIC COMMENT

No public or agency comments were received on the topic of Land Use**.**

FINDINGS OF FACT

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

1. The Stanton Energy Reliability Center will not result in conversion of farmland to non-agricultural uses.
2. The Stanton Energy Reliability Center is not subject to a Williamson Act contract.
3. The Stanton Energy Reliability Center will be adjacent to other existing industrial uses and will not physically divide or disrupt an established community.
4. The Stanton Energy Reliability Center will not conflict with a natural community conservation plan or a habitat conservation plan.
5. The Stanton Energy Reliability Center will be built on private land and its related natural gas line, potable water, wastewater lines, and transmission line will be built within public right of ways.
6. The Stanton Energy Reliability Center will not contribute to a significant cumulative impact to land use inconsistencies within the area surrounding the project site.
7. The Stanton Energy Reliability Center site has a City of Stanton General Plan designation of Industrial Use.
8. The Stanton Energy Reliability Center is subject to the zoning regulations for Industrial General.
9. The Stanton Energy Reliability Center would require a variance and a conditional use permit but for the exclusive licensing jurisdiction of the California Energy Commission.
10. The evidence supports a finding in favor of a variance under the Stanton Municipal Code and we therefore grant the variance.

11. The evidence supports a finding in favor of a conditional use permit under the Stanton Municipal Code and we therefore grant the conditional use permit.

12. The Stanton Energy Reliability Center is compatible with surrounding land uses and will not result in any unmitigated public health or other environmental impacts to sensitive receptors.

CONCLUSIONS OF LAW

1. The evidentiary record contains an adequate analysis of the land use laws, ordinances, regulations, and standards that are relevant to the project and establishes that the Stanton Energy Reliability Center will not create any unmitigated, significantly adverse land use effects as defined under the California Environmental Quality Act.

2. With the making of the necessary findings for a variance and conditional use permit, the Stanton Energy Reliability Center is consistent with the land use policies, plans, and regulations of the city of Stanton.

B. TRAFFIC AND TRANSPORTATION

INTRODUCTION

This section addresses the extent to which the Stanton Energy Reliability Center (SERC) would affect the local transportation network. It analyzes (1) the roads and routings that are proposed to be used for construction and operation, (2) potential traffic-related problems associated with the use of those routes, (3) the anticipated encroachment upon public rights-of-way during the construction of the project and associated facilities, (4) the frequency of trips and probable routes associated with the delivery of hazardous materials, and (5) the potential effect of project operations on local airport flight traffic.

Project impacts were evaluated according to Appendix G of the California Environmental Quality Act (CEQA) Guidelines. In addition, we have reviewed the SERC's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to Traffic and Transportation.

Evidence on the topic of Traffic and Transportation is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 22, 28, 30, 31, 47, 55, 56, 65, 69, 88, 92, 96, 100, and 300.[1]

SETTING AND PROJECT DESCRIPTION

The SERC project site is located in the city of Stanton, Orange County, California at 10711 Dale Avenue in an area surrounded by an extensive roadway network. Nearby communities include Stanton, Garden Grove, Westminster, Anaheim, Huntington Beach, and Buena Park.[2]

Regional vehicular access to the site would be from Interstate 5 (I-5), State Route 91 (SR-91), Interstate 405 (I-405), and State Route 22 (SR-22). Local access to the site would be from Beach Boulevard (also known as State Route 39, or SR-39) to West Cerritos Avenue or Katella Avenue. The primary access to the SERC site would be from the east from Dale Avenue, and secondary access would be from the west near the intersection of Fern Avenue and Pacific Street.

Nearby air transportation facilities include the Los Alamitos Army Airfield (LAAA), located approximately 2.9 miles southwest of the SERC site, and the Fullerton Municipal Airport (FMA), located approximately 4.5 miles north of the SERC site.

The Union Pacific Railroad (UPRR) Stanton Industrial Lead (railroad line) abuts the site to the south.

[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Ex. 300, p. 4.11-1.

For maps of the SERC site in relation to regional and local traffic and transportation systems, see **Traffic and Transportation Figure 1** – Regional Traffic and Transportation Setting and **Traffic and Transportation Figure 2** – Local Traffic and Transportation Setting.[3]

Traffic and Transportation Figure 1

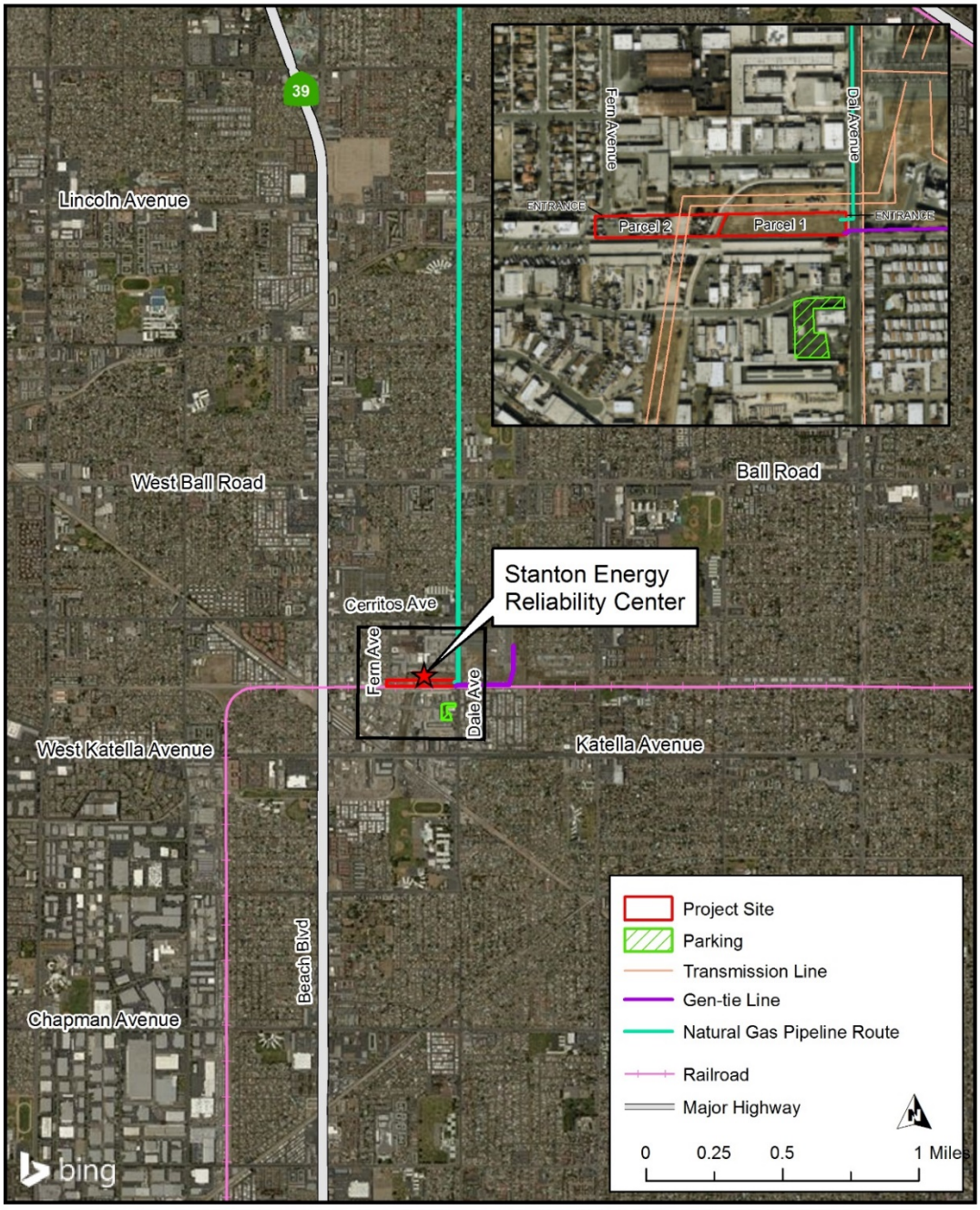
Stanton Energy Reliability Center - Regional Traffic and Transportation Setting

(Ex. 300, p. 4.11-47; Traffic and Transportation Figure 1).

[3] Ex. 300, p. 4.11-1.

Traffic and Transportation Figure 2

TRAFFIC AND TRANSPORTATION - FIGURE 2
Stanton Energy Reliability Center - Local Traffic and Transportation Setting



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCE: Open Street Map, ESRI World Street Map, California Department of Transportation

TRAFFIC AND TRANSPORTATION

(Ex. 300, p. 4.11-48; Traffic and Transportation Figure 2).

For additional project details, please see the **PROJECT DESCRIPTION** section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The California Environmental Quality Act (CEQA) presents a list of criteria to determine the significance of project impacts in Appendix G of the CEQA Guidelines. The CEQA Guidelines and applicable LORS frame the criteria used in this Decision for evaluating environmental impacts and, specifically, whether the SERC will:

1. Cause a substantial increase in traffic in relation to the existing traffic load and capacity of the street system (i.e., increase a road segment's volume-to-capacity (V/C) by 0.10, result in a substantial increase in either the number of vehicle trips or congestion at intersections);
2. Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit;
3. Conflict with an applicable congestion management program, including, but not limited to, level of service standards (LOS) and travel demand measures or other standards established by the county congestion management agency for designated roads or highways;
4. Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment);
5. Result in inadequate emergency access;
6. Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities;
7. Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that would result in substantial safety risk;
8. Produce a thermal plume exceeding the 10.6 meters per second peak velocity threshold at altitudes up to 450 feet above ground level or generate glare in an area where air traffic flight paths are expected to occur; or
9. Have individual environmental effects, which when considered with other impacts from the same project or in conjunction with impacts from other

closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts.[4]

Level of Service

Level of service (LOS) is a generally accepted measure used by traffic engineers and planners to describe and quantify the traffic congestion level on a particular roadway or intersection in terms of speed, travel time, and delay. The *Highway Capacity Manual 2010*[5] includes six levels of service for roadways and intersections. These levels of service range from LOS A (the best and smoothest operating conditions) to LOS F (the worst, most congested operating conditions).

Energy Commission staff (Staff) used the LOS standards of Orange County, the Orange County Transportation Authority (OCTA), and the cities of Stanton, Anaheim, Buena Park, Garden Grove, Huntington Beach, and Westminster, as significance thresholds to determine whether project-generated traffic impacts to the LOS would be significant.[6]

The analysis in evidence reviewed the following locations on the surrounding roadway network for potential project impacts to the LOS.[7] See **Traffic and Transportation Figure 3 – Study Roadways and Intersections** for a map showing these study locations.

Roadways

- Beach Boulevard between:
    - SR-22 and Lampson Avenue
    - Lampson Avenue and Chapman Avenue
    - Chapman Avenue and Katella Avenue
    - Katella Avenue and West Cerritos Avenue
    - West Cerritos Avenue and Ball Road
    - Ball Road and Lincoln Avenue

[4] Ex. 300, p. 4.11-4.
[5]The *Highway Capacity Manual* (HCM) is the most widely used resource for traffic analysis. The Highway Capacity Manual is prepared by the Transportation Research Board Committee on Highway Capacity and Quality of Service. Ex. 300, p. 4.11-5.
[6] Ex. 300, p. 4.11-6.
[7] As a result of Senate Bill 743 (Steinberg, 2013), the California Office of Planning and Research has proposed changes to the CEQA Guidelines that identify vehicles miles traveled (VMT) as the appropriate method for assessing a project's traffic impacts. This is a departure from past practices of using the LOS metric for automobile delay to evaluate traffic impacts. Once the California Natural Resources Agency adopts these changes to the CEQA Guidelines, Staff will include analysis of VMT in the Traffic and Transportation section and will also continue to assess LOS impacts for LORS compliance because many local jurisdictions will likely continue to have LOS standards for local roads and intersections. Ex. 300, p. 4.11-5.

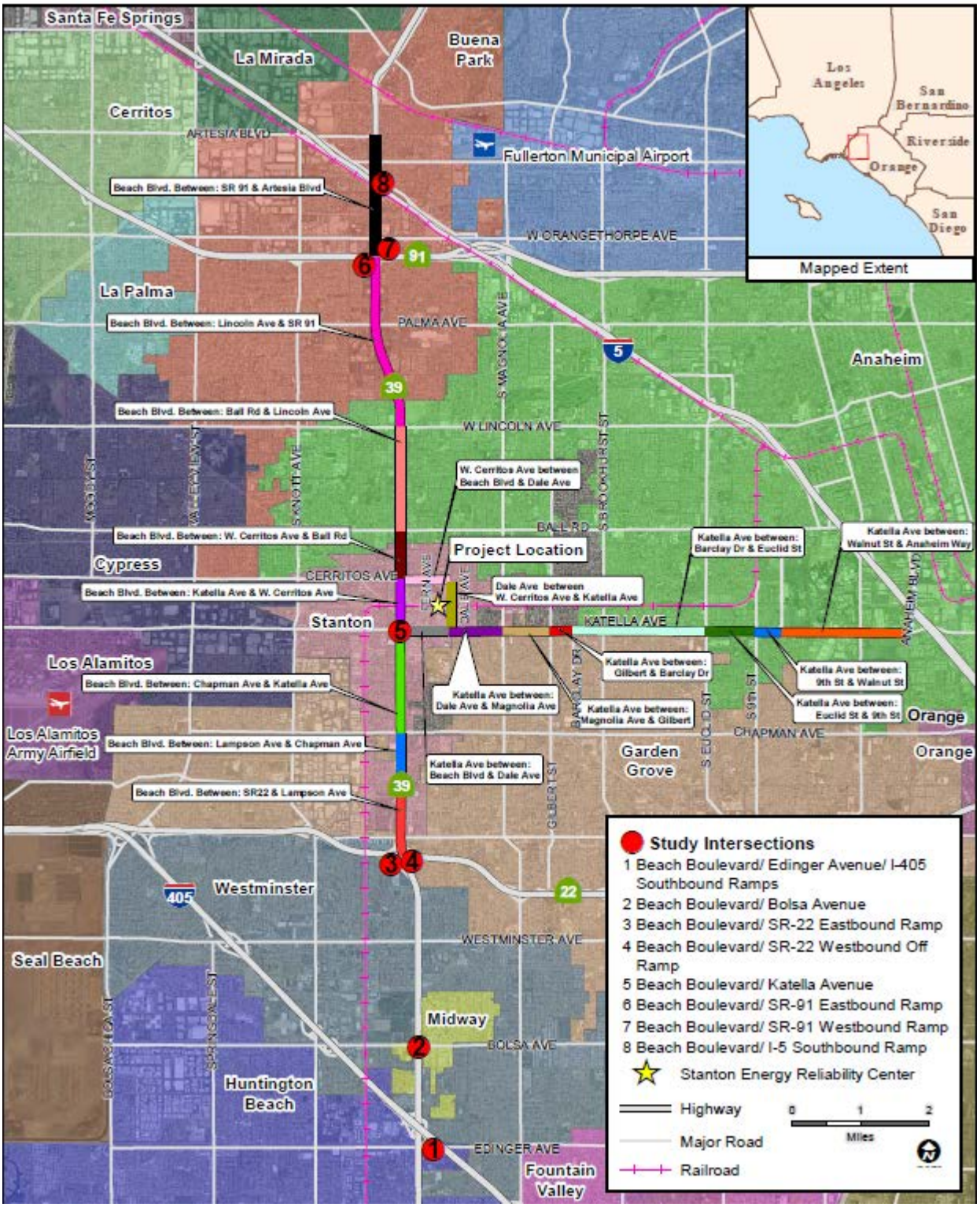
    - Lincoln Avenue and SR-91
    - SR-91 and Artesia Boulevard
- West Cerritos Avenue between Beach Boulevard and Dale Avenue
- Dale Avenue between West Cerritos Avenue and Katella Avenue
- Katella Avenue between:
    - Beach Boulevard and Dale Avenue
    - Dale Avenue and Magnolia Avenue
    - Magnolia Avenue and Gilbert Street
    - Gilbert Street and Barclay Drive
    - Barclay Drive and Euclid Street
    - Euclid Street and 9th Street
    - 9th Street and Walnut Street
    - Walnut Street and Anaheim Way

Intersections

- Beach Boulevard/Edinger Avenue/I-405 Southbound Ramps
- Beach Boulevard/Bolsa Avenue
- Beach Boulevard/SR-22 Eastbound Ramps
- Beach Boulevard/SR-22 Westbound Off Ramp
- Beach Boulevard/Katella Avenue
- Beach Boulevard/SR-91 Eastbound Ramps
- Beach Boulevard/SR-91 Westbound Ramps
- Beach Boulevard/I-5 Southbound Ramps

Traffic and Transportation Figure 3

Stanton Energy Reliability Center - Study Roadways and Intersections



(Ex. 300, p. 4.11-49; Traffic and Transportation Figure 3).

IMPACT ASSESSMENT AND MITIGATION

The direct and indirect impacts of the SERC on traffic and transportation are based upon an analysis comparing pre- and post-SERC conditions. Project construction will span approximately 14 months, beginning in November 2018 and ending in December 2019. Construction will generally occur between 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays. Operation of the plant, which will begin in December 2019, will require occasional deliveries and maintenance-related trips. Materials for facility maintenance will be delivered to the site approximately twice a week, and aqueous ammonia will be delivered an average of five times per year, with a maximum of six deliveries per month. Regular plant operations will be remotely conducted by an off-site operator and/or an on-site technician. One to three on-call technicians will perform on-site maintenance as needed.[8]

Analysis of the SERC project traffic impacts to the LOS focuses on the period of peak construction, which will employ the highest number of workers compared to other phases of construction and operation, generate the most vehicle trips, and result in the worst-case scenario for traffic impacts. Peak construction is expected to occur in June 2019 during the eighth month of construction.

Impacts to traffic LOS on the local roadway network during SERC operations are not analyzed because SERC will be remotely operated and only generate occasional maintenance-related trips. Therefore, operations traffic is not expected to significantly impact the LOS on nearby roads and intersections.[9]

Construction Traffic

Workforce Traffic

The Applicant and Staff assume that 80 percent of the SERC project construction workforce will commute locally from Orange County, with the remaining 20 percent commuting from nearby counties. (See the **SOCIOECONOMICS** section of this Decision for more detailed information.) The average size of the workforce over the entire construction period will be approximately 48 workers.[10]

The peak construction period expected in June 2019 will draw 78 construction workers. An estimated 16 percent of the construction workforce (approximately 12 workers) will carpool, resulting in 66 daily construction worker round trips or 132 daily one-way trips. This analysis conservatively assumes that all workers will arrive during the morning peak hours and depart during the evening peak hours. This would result in 66 one-way workforce vehicle arrival trips during the morning

[8] Ex. 300, p. 4.11-6 and Ex. 27, p. 5.12-16.

[9] Ex. 300, pp. 4.11 -6 – 4.11-7.

[10] Ex. 300, p. 4.11-7.

peak hours and 66 one-way workforce vehicle departure trips during the evening peak hours.[11]

Truck Traffic

Peak construction will generate approximately 50 daily one-way delivery/haul truck trips, with 16 of these trips occurring during peak hours. For traffic analysis, truck trips were converted to passenger car equivalent (PCE) trips at a ratio of 1.5 passenger cars for each truck. This results in 75 daily one-way PCE truck trips during the peak construction months, with 24 of these trips occurring during peak hours (12 one-way PCE truck trips during the morning peak and 12 one-way PCE truck trips during the evening peak).

Total Construction Traffic

The total number of construction workforce and truck trips generated during peak construction will be 207 daily one-way trips (132 one-way worker trips added to 75 one-way PCE truck trips). Approximately 156 of these one-way trips will occur during peak hours; 78 one-way trips during the morning peak and 78 one-way trips during the evening peak. See **Traffic and Transportation Table 1** below for details. This table summarizes all peak construction traffic generated by the project, including construction worker trips and delivery/haul truck trips. Staff used the total construction traffic shown in this table to analyze potential construction traffic impacts.[12]

Traffic and Transportation Table 1
Total Daily Trips during Peak Construction[13]

Vehicle Type	Daily Roundtrips	One-Way Daily Trips	One-Way AM Peak Hour Trips	One-Way PM Peak Hour Trips
Construction Worker Vehicles[1]	66	132	66	66
Trucks (Delivery/Haul Vehicles) (PCE)[2]	37.5	75	12	12
Total	103.5	207	78	78

[1] Assumes a carpool rate of 1.5 passengers per car.

[2] PCE, or passenger car equivalent, is a conversion unit for comparing the traffic impacts of a large truck with the traffic impacts of a smaller car. Here, one truck trip is 1.5 PCE.

[11] Ex. 300, p. 4.11-7.
[12] Ex. 300, p. 4.11-7.
[13] Ex. 300, p. 4.11-8.

Impacts to Traffic LOS

The SERC project site is located in an urbanized area with a vast roadway network, enabling project-related traffic to use a variety of routes to access the site. The following assumptions about regional construction trip routes (used by workers and trucks) were used in this traffic analysis:

- 25 percent of the trips would come from points north of the site via I-5 and SR-91.
- 25 percent of the trips would come from points south of the site via I-5, I-405, and SR-22.
- 25 percent of the trips would come from points east of the site via I-5 and SR-91.
- 25 percent of the trips would come from points west of the site via I-405 and SR-22.

Staff compared existing (baseline) traffic LOS on study roads and intersections to peak construction traffic LOS, as shown in **Traffic and Transportation Table 2** below. As reflected in the table, all study roadway segments would operate at or above the applicable LOS standards during peak construction with the exception of Beach Boulevard between SR-22 and Lampson Avenue, and Beach Boulevard between Lampson Avenue and Chapman Avenue.[14]

Traffic and Transportation Table 2:
Roadway Average Daily Traffic (ADT) and LOS: A Comparison between Baseline and Peak Construction Conditions

[14] Ex. 300, p. 4.11-8.

No.	Road Segment	Existing ADT and LOS	Peak Construction ADT and LOS	Project Trips	Agency (ies) with Jurisdiction	Most Restrictive LOS Standard
Beach Boulevard						
1	Beach Boulevard, SR-22 to Lampson Avenue	74,600 LOS E	74,724 LOS E	124	OCTA[1], City of Stanton, City of Garden Grove[1], City of Westminster	LOS D (City of Westminster)
2	Beach Boulevard, Lampson Avenue to Chapman Avenue	77,600 LOS F	77,724 LOS F	124	OCTA[1], City of Stanton, City of Garden Grove[1]	LOS E (City of Stanton's LOS for CMP roads)
3	Beach Boulevard, Chapman Avenue to Katella Avenue	71,600 LOS E	71,724 LOS E	124	OCTA[1], City of Stanton	LOS E (City of Stanton's LOS for CMP roads)
4	Beach Boulevard, Katella Avenue to West Cerritos Avenue	64,500 LOS D	64,500 LOS D	0	OCTA[1], City of Stanton	LOS E (City of Stanton's LOS for CMP roads)
5	Beach Boulevard, West Cerritos Avenue to Ball Road	65,100 LOS D	65,170 LOS D	70	OCTA[1], City of Stanton, City of Anaheim[1]	LOS E (City of Stanton's LOS for CMP roads)
6	Beach Boulevard, Ball Road to Lincoln Avenue	62,400 LOS D	62,470 LOS D	70	OCTA[1], City of Anaheim[1]	NA (All LOS standards apply to intersections)
7	Beach Boulevard, Lincoln Avenue to SR-91	66,600 LOS D	66,670 LOS D	70	OCTA[1], City of Buena Park, City of Anaheim[1]	LOS D (City of Buena Park)
8	Beach Boulevard, SR-91 to Artesia Boulevard	57,800 LOS C	57,870 LOS C	70	OCTA[1], City of Buena Park	LOS D (City of Buena Park)
West Cerritos Avenue						

9	West Cerritos Avenue, Beach Boulevard to Dale Avenue	14,000 LOS A	14,070 LOS A	70	City of Stanton	LOS D (City of Stanton's LOS for non-CMP roads)
Dale Avenue						
10	Dale Avenue, West Cerritos Avenue to Katella Avenue	12,000 LOS A	12,169 LOS A	169	City of Stanton	LOS D (City of Stanton's LOS for non-CMP roads)
Katella Avenue						
11	Katella Avenue, Beach Boulevard to Dale Avenue	26,000 LOS A	26,124 LOS A	124	OCTA[1], City of Stanton	LOS E (City of Stanton's LOS for CMP roads)
12	Katella Avenue, Dale Avenue to Magnolia Avenue	25,000 LOS A	25,013 LOS A	13	OCTA[1], City of Stanton, City of Garden Grove[1], Orange County[1]	LOS E (City of Stanton's LOS for CMP roads)
13	Katella Avenue, Magnolia Avenue to Gilbert Street	26,000 LOS A	26,013 LOS A	13	OCTA[1], Orange County[1], City of Garden Grove[1]	NA (All LOS standards apply to intersections)
14	Katella Avenue, Gilbert Street to Barclay Drive	29,000 LOS A	29,013 LOS A	13	OCTA[1], Orange County[1], City of Garden Grove[1]	NA (All LOS standards apply to intersections)
15	Katella Avenue, Barclay Drive to Euclid Street	28,000 LOS A	28,013 LOS A	13	OCTA[1], Orange County[1], City of Anaheim[1], City of Garden Grove[1]	NA (All LOS standards apply to intersections)
16	Katella Avenue, Euclid Street to 9th Street	32,000 LOS A	32,013 LOS A	13	OCTA[1], City of Anaheim[1]	NA (All LOS standards apply to intersections)
17	Katella Avenue, 9th Street to Walnut Street	29,000 LOS A	29,013 LOS A	13	OCTA[1], City of Anaheim[1]	NA (All LOS standards apply to intersections)

18	Katella Avenue, Walnut Street to Anaheim Way	39,000 LOS B	39,013 LOS B	13	OCTA[1], City of Anaheim[1]	NA (All LOS standards apply to intersections)

Sources: Ex. 300, pp. 4.11-9 - 11.
[1]This agency's LOS standards only apply to intersections, not road segments.

Staff testified that Beach Boulevard between SR-22 and Lampson Avenue currently operates at LOS E and would continue to operate at LOS E during peak construction. A very small portion of this road segment falls within the city of Westminster, which has an LOS standard of D for intersections and roadways. Because this road segment is already operating at LOS E, worse than Westminster's LOS goal, and because SERC construction traffic would not degrade the LOS below E, Staff testified that this impact is not significant and the LOS E conditions of this road segment during peak construction is considered consistent with Westminster LORS. Peak construction traffic impacts are temporary, and once SERC is operational it would only add a negligible number of occasional maintenance and related trips to this road segment.

The other road segment that would not meet LOS standards during peak construction is the segment of Beach Boulevard between Lampson Avenue and Chapman Avenue. It currently operates at LOS F and would continue to operate at LOS F during peak construction. This segment does not meet Stanton's applicable minimum LOS standard of E or better for CMP roadways[15] currently and will not meet LOS E during peak construction. Staff testified that during peak construction, this road segment's volume to capacity (V/C) ratio would increase by approximately 0.0017 over existing conditions, which is below the 0.10 threshold for impacts. Therefore, construction traffic impacts to the segment of Beach Boulevard between Lampson Avenue and Chapman Avenue will be less than significant. SERC construction traffic will only slightly increase the V/C ratio of this road segment, and project construction traffic is temporary.[16]

Traffic and Transportation Table 3 below shows the existing intersection capacity utilization ratio and LOS at study intersections during the morning and evening peak hours. Turning movement counts are not available for these local intersections, so peak construction LOS cannot be calculated. The most restrictive LOS standard applicable to any of the intersections is LOS D, and all intersections currently operate at a baseline LOS better than D except for the Beach Boulevard/Bolsa Avenue intersection, which currently operates at LOS D during the morning peak hour. The evidence indicates that the increase in traffic at this

[15] Congestion Management Plan roadways, see Traffic and Transportation Table 4 below for more on this.
[16] Ex. 300, pp. 4.11-11 – 4.11-12.

intersection during peak construction (22 daily peak hour one-way trips) will not be sufficiently large to downgrade the LOS D conditions to LOS F. The increase in traffic during peak construction will not be sufficient to cause unacceptable LOS at other study intersections, which currently operate at relatively high levels of service. Therefore, we find peak construction impacts to traffic LOS at intersections will be less than significant.[17]

Traffic and Transportation Table 3
2015 Peak Hour Intersection LOS and Project-Added Trips

No.	Study Intersection	Year 2015 AM/PM Peak Hour Intersection Capacity Utilization and LOS		Project Added Trips	Jurisdiction	Most Restrictive LOS Standard
		AM	PM			
1	Beach Boulevard/Edinger Avenue/I-405 Southbound Ramp	0.67 LOS B	0.76 LOS C	21	OCTA, City of Huntington Beach	LOS E (OCTA and City of Huntington Beach)
2	Beach Boulevard/Bolsa Avenue	0.82 LOS D	0.78 LOS C	22	OCTA, City of Westminster	LOS D (City of Westminster)
3	Beach Boulevard/SR-22 Eastbound Ramp	0.55 LOS A	0.51 LOS A	48	OCTA, City of Westminster	LOS D (City of Westminster)
4	Beach Boulevard/SR-22 Westbound Off Ramp	0.73 LOS C	0.69 LOS B	48	OCTA, City of Garden Grove	LOS D (City of Garden Grove)
5	Beach Boulevard/Katella Avenue	0.71 LOS C	0.68 LOS B	48	OCTA, City of Stanton	LOS E (OCTA, City of Stanton)
6	Beach Boulevard/SR-91 Eastbound Ramp	0.47 LOS A	0.55 LOS A	23	OCTA, City of Buena Park	LOS E (OCTA, City of Buena Park)
7	Beach Boulevard/SR-91 Westbound Ramp	0.51 LOS A	0.59 LOS A	21	OCTA, City of Buena Park	LOS E (OCTA, City of Buena Park)
8	Beach Boulevard/ I-5 Southbound Ramps	0.61 LOS B	0.65 LOS B	14	OCTA, City of Buena Park	LOS E (OCTA, City of Buena Park)

[17] Ex. 300, p. 4.11-12.

Source: Ex. 300, pp. 4.11-12 – 4.11-13.

As shown above, the SERC project will not cause significant impacts to traffic LOS on nearby study roads and intersections. Applicant submitted traffic information for soil import and export activities that will take place during the first three months of construction, prior to the peak construction period.[18] Although this period of import/export activities will generate more total daily construction traffic than the peak construction activities analyzed above (152.5 roundtrips compared to 103.5 roundtrips), this increase in daily trips is not large enough to change the LOS analysis discussed above. This is especially true given that peak hour trips will be lower for the import/export period than for peak construction (49 one-way trips during each peak hour compared to 78 one-way trips), meaning that many trips during the import/export period will be spread throughout the day. This minimizes LOS impacts. Therefore, the LOS analysis discussed above still applies and impacts to traffic LOS remain less than significant.[19]

The Applicant and Staff agreed that a secondary delivery route for hazardous materials other than ammonia should go from Beach Boulevard to Cerritos Avenue to Fern Avenue. The Public Works Director for the City of Stanton also stated that he preferred the Cerritos route. Therefore, Condition of Certification **TRANS-2** requires consideration of this alternate route in the traffic control plan.[20]

Road Hazards from Construction Traffic

Although project-related traffic will not cause significant impacts to traffic LOS, it could potentially cause other impacts, such as hazardous road damage from heavy haul construction vehicles. The potential for road damage can be minimized if heavy haul vehicles use designated truck routes.

Conditions of Certification **TRANS-1** and **TRANS-2** ensure compliance by requiring heavy haul vehicles to use designated truck routes wherever possible. Condition of Certification **TRANS-1** also requires that the project owner comply with applicable jurisdictions' regulations on vehicle sizes and weights and driver licensing. Finally, Condition of Certification **TRANS-3** requires the project owner to restore all public roads, easements, and rights-of-way damaged by project-related traffic. With implementation of Conditions of Certification **TRANS-1** through **TRANS-3**, we find that project-related traffic will not cause significant impacts to roads.[21]

[18] Ex. 96.
[19] Ex. 300, p. 4.11-13.
[20] Ex. 300, p. 4.11-26.
[21] Ex. 300, pp. 4.11- 13 – 4.11-14.

Transportation of Hazardous Materials and Waste

Both the construction and operation of the SERC will involve transportation of hazardous materials and wastes. To ensure compliance, Condition of Certification **TRANS-5** requires the project owner to comply with applicable regulations and to contract with licensed hazardous materials delivery and waste hauler companies. This will reduce any impacts to roadways and the public from hazardous materials and waste transportation to less than significant. See the **HAZARDOUS MATERIALS MANAGEMENT** and **WASTE MANAGEMENT** sections of this Decision for more information.[22]

Linear Facilities

The SERC requires construction of a natural gas pipeline along Dale Avenue that will pass through multiple jurisdictions. The project will also construct a new 0.35-mile underground 66 kV generator-tie line that would extend from the SERC site, across Dale Avenue, and then connect to the Southern California Edison (SCE) Barre Substation on the east side of Dale Avenue.

Local agencies require encroachment permits for construction activities located in road rights-of-way. To ensure compliance, Condition of Certification **TRANS-4** requires the project owner to obtain the necessary encroachment permits for construction work and activities within road rights-of-way. In addition, Condition of Certification **TRANS-3** requires the project owner to restore all public roads, easements, and rights-of-way damaged by project-related construction activities. Finally, Condition of Certification **TRANS-2** requires plans for access to adjacent properties during construction of the linear facilities to minimize traffic disruption. Implementation of these conditions will ensure that construction activities in road rights-of-way do not cause significant impacts to road safety or traffic flow.[23]

Parking

During construction of the SERC project, a temporary 2.89-acre off-site construction worker parking area will be provided at the Bethel Romanian Pentecostal Church located at 10801 Dale Avenue, approximately 350 feet south of the eastern SERC entrance (see **Traffic and Transportation Figure 2**). Section 20.320.050 of the Stanton Municipal Code requires off-site parking to be located within 300 feet of the property requiring parking spaces and shall not be available for any other uses. The off-site parking is more than 300 feet away from the project and is available for the church's use. Staff testified that this regulation pertains to

[22] Ex. 300, p. 4.11-15.

[23] Ex. 300, pp. 4.14-14 – 4.14-15.

permanent, operational parking, not temporary construction parking, and that representatives from the city of Stanton did not state that parking was an issue.[24]

During peak construction, the SERC project will require parking for approximately 66 construction worker vehicles. Using a standard of 350 square feet needed for each parking space, approximately 0.53 acres will be needed for construction worker parking, which is far less than the 2.89 acres of the off-site parking being provided at the church.

Routine operation of the plant will be performed remotely, so only a few spaces are needed during operation for occasional maintenance visits. To ensure that adequate parking is provided, Condition of Certification **TRANS-2** requires the project owner to provide final parking plans as part of the Traffic Control Plan (TCP). Because the project would provide adequate parking, there will be no impacts to the surrounding area from project parking spill-over.[25]

Rail Service Impacts

The Union Pacific Railroad's (UPRR) Stanton Industrial Lead, which provides limited freight service, is adjacent to the southern boundary of the SERC site and has an at-grade crossing at Dale Avenue. Construction workers will cross these tracks while walking between the off-site parking area at the Bethel Romanian Pentecostal Church and the project site. Construction vehicles traveling northbound on Dale Avenue to access the site or southbound on Dale Avenue to leave the site would also cross these tracks. In addition, construction workers and vehicles at the project site could potentially work near the railroad tracks.[26]

The Dale Avenue rail crossing has warning signs, including a round yellow advance warning sign, pavement markings visible to drivers, crossing gates, and flashing cross-bucks. However, rail crossings are inherent hazards, and this crossing could pose a safety hazard to construction workers, oversized vehicles, and trains. Condition of Certification **TRANS-6** requires the project owner to develop and implement a rail crossing safety plan for construction to address foot traffic, construction-related vehicles, transportation of heavy/oversized loads over the UPRR railroad tracks, and safety measures to be used during construction near the railroad tracks.[27]

Bus Service Impacts

OCTA provides bus service within Orange County, including the city of Stanton. There are no bus lines directly serving the SERC project site, but there are seven,

[24] Ex. 300, p. 4.11-14.
[25] Ex. 300, p. 4.11-14.
[26] Ex. 300, p. 4.11-15.
[27] Ex. 300, pp. 4.11-15 – 4.11-16.

nearby operating bus lines. The ones nearest the project site operate on Beach Boulevard (Route 39) and Katella Avenue (Route 50), which are local roadways the SERC construction traffic will use to access the project site. The evidence establishes that project traffic will not cause significant impacts to traffic LOS, as discussed earlier. Therefore, the SERC will not significantly delay bus service and any impacts to bus service will be less than significant. [28]

Bicycle and Pedestrian Facilities Impacts

There are currently no bicycle facilities on the study roadways near the SERC site, and Staff testified that the city of Stanton does not believe that any mitigation measures need to be implemented related to potential future bike lanes on Dale Avenue. Because there are no bike lanes on study roadways in the vicinity of the project site, and no aspect of SERC would interfere with the development of future bike lanes, the SERC will not impact bicycle facilities.

The nearest pedestrian facilities are sidewalks located directly east of the entrance along Dale Avenue and north of the entrance on Fern Avenue and Pacific Street. Construction and operation of the SERC will not impact pedestrian activities or facilities, as it would not block any sidewalks, and most traffic will not go directly through residential areas or any other areas with high pedestrian activity.[29]

Aviation Impacts

Airports in the vicinity of the SERC project site are Los Alamitos Army Airfield (LAAA) and Fullerton Municipal Airport (FMA). The following aviation analysis focuses on these airports. The airport closest to the project site, and therefore most likely to be affected by its thermal plumes and the physical height of the SERC's structures, is LAAA. See **Traffic and Transportation Figure 1 – Regional Traffic and Transportation Setting** above for the locations of these airports.[30]

To assess the SERC's aviation impacts, the evidence analyzes whether the SERC's two 70-foot-tall exhaust stack enclosures or its thermal plumes could obstruct or impair airspace posing hazards to aircraft pilots and passengers.

The FAA would require notification if a project feature exceeds the FAA's threshold slope height. Given that the SERC project site is approximately 15,300 feet from the LAAA, the threshold for FAA notification is approximately 153 feet. The tallest structures at the SERC site will be the two 70-foot-tall exhaust stack enclosures,

[28] Ex. 300, p. 4.11-16.
[29] Ex. 300, pp. 4.11-16 – 4.11-17.
[30] Ex. 300, p. 4.11-17.

which are well below 153 feet tall and will not penetrate LAAA's navigable airspace. Therefore, no FAA notification is required.[31]

If any construction equipment used for the project, such as a construction crane, is 153 feet above ground level or taller, Form 7460-1 would need to be filed with the FAA. Condition of Certification **TRANS-7** ensures FAA notification under these circumstances. Given the temporary use and relatively small size of construction cranes, it is likely the FAA would issue a Determination of No Hazard to Navigable Airspace for the use of this equipment. However, the FAA might require lighting and/or marking of a construction crane exceeding 153 feet above ground level as a condition of its Determination. Condition of Certification **TRANS-7** requires that the SERC project owner comply with any FAA Determination conditions, including lighting or marking requirements. With implementation of Condition of Certification **TRANS-7**, project compliance with FAA regulations will be verified and its physical structures will not constitute a hazard to air navigation.[32]

The SERC's two combustion turbine generator stacks will discharge thermal plumes (high-velocity columns of hot air) during operation. Thermal plume velocities would be greatest at the discharge points, with plume velocities decreasing with increasing altitude. Plume velocities would also be highest during certain weather conditions such as cool temperatures and calm winds. High-velocity thermal plumes have the potential to affect aviation safety, and the FAA has amended the Aeronautical Information Manual to establish thermal plumes as potential flight hazards. Aircraft flying through thermal plumes may experience significant air disturbances such as turbulence and vertical shear. The FAA manual advises that, when able, a pilot should fly upwind of smokestacks and cooling towers to avoid encountering thermal plumes.[33]

The record contains an analysis of the plume in relation to LAAA air traffic. Given the remote chance of a low-altitude overflight coinciding with both operation of the plant and the rare weather conditions (cool temperatures and calm winds) that would create a worst-case plume (exceeding the 10.6 m/s peak velocity threshold at altitudes up to 450 feet AGL), impacts to aviation will be less than significant. However, as a conservative precautionary measure, we impose Condition of Certification **TRANS-8**, which requires the project owner to work with the FAA, the LAAA Manager, and the FMA Manager to notify all pilots using these airports and the airspace near the SERC site of potential plume hazards. These activities would include issuing a Notice to Airmen (NOTAM) about the plume, working with the LAAA and FMA managers to add a remark about the plume to the Automatic

[31] Ex. 300, pp. 4.11-17 – 4.11-18.
[32] Ex. 300, p. 4.11-18.
[33] Ex. 300, p. 4.11-18.

Terminal Information Service and the Chart Supplement (formerly called the Airport Facility Directory) for each airport, and updating the Los Angeles Sectional Chart to indicate that pilots should avoid direct overflight of the project when possible. Condition of Certification **TRANS-8** is consistent with the FAA's amended Aeronautical Information Manual. Although plume impacts will be less than significant without mitigation, this condition will further reduce the chance of any rare encounters between aircraft and high-velocity thermal plumes.[34]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[35]

For cumulative traffic impacts, Staff reviewed the SERC Master Cumulative Projects List in the **PROJECT DESCRIPTION** section of this Decision. The timing of these cumulative projects varies and is often uncertain. A few of the projects could potentially generate construction or operation traffic simultaneously with the SERC's peak construction trips, but these trips will be distributed over the extensive roadway network in the area and are not expected to combine with the project's small and less than significant contribution to traffic during the period of peak construction to create cumulative impacts. The SERC will be remotely operated and would only generate occasional trips during operation; therefore, there will also be no significant cumulative impacts during operation of the project. We find that the SERC's impacts to traffic LOS will not be cumulatively considerable.

The SCE Barre Peaker Power Plant located across Dale Avenue from the SERC site has an approximately 80-foot-tall exhaust stack and also produces a thermal plume of unknown height. The FAA recommends in the Aeronautical Information Manual that pilots avoid potential thermal plumes by flying upwind of smokestacks and cooling towers when possible; therefore, pilots should already be avoiding overflight of this area. It would be reasonable for pilots to avoid overflight of the adjacent SERC site in accordance with the FAA's guidance, given the close proximity of the two power plant sites and that pilots can take routes that do not overfly the power plants. Condition of Certification **TRANS-8** requires notification to pilots of the SERC's plumes with an advisory to avoid overflight. This condition of certification would discourage pilots from flying over the entire area, and further

[34] Ex. 300, pp. 4.11-18 – 4.11-19.

[35] Cal. Code Regs, tit. 14, §§ 15065(a)(3); 15130.

reduce the potential for any cumulative impacts to aviation. The addition of the project's thermal plume to the area would cause less than significant cumulative impacts to aviation for these reasons. Therefore, we find that with implementation of Condition of Certification **TRANS-8**, the incremental cumulative construction and operation impacts of the SERC will be reduced to a less than cumulatively considerable level.[36]

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

Traffic and Transportation Table 4 provides an assessment of the SERC's compliance with applicable LORS pertaining to traffic and transportation.

Traffic and Transportation Table 4
Laws, Ordinances, Regulations, and Standards[37]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
FEDERAL		
Title 14, Code of Federal Regulations, Part 77, Section 77.9:	Requires notification of the FAA of any construction or alterations exceeding 200 feet above ground level or of greater height than an imaginary surface extending outward and upward at a slope of 100 to 1 for a horizontal distance of 20,000 feet from the nearest point of the nearest runway of an airport with at least one runway more than 3,200 feet in length.	**Compliant.** There are no permanent project structures that require FAA notification. In the case that any construction equipment, such as a crane, exceeds the threshold notification height, Condition of Certification **TRANS-7** ensures compliance by requiring FAA notification.
Title 49, Subtitle B, Sections 171-177 and 350-399:	Requires proper handling and storage of hazardous materials during transportation.	**Compliant. TRANS-5** requires the project owner to contract with licensed hazardous materials delivery and waste hauler companies for the transport of hazardous materials and wastes. It also requires the project owner to ensure compliance with all applicable regulations and to implement the proper procedures.
STATE		
California Health and Safety Code, Section 25160	Pertains to operators of vehicles transporting hazardous materials; promotes safe transportation of hazardous materials.	**Compliant.** Condition of Certification **TRANS-5** requires the project owner to contract with licensed hazardous materials delivery and waste hauler companies for the transport of hazardous materials and

[36]Ex. 300, p. 4.11-20.

[37] Ex. 300, pp. 4.11-21 - 4.11-26.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
		wastes. It also requires the project owner to ensure compliance with all applicable regulations and to implement the proper procedures.
California Streets and Highways Code, Division 1, Chapter 1, Article 3, Section 117; Division 1, Chapter 3; Division 2, Chapters 5.5 and 6	Requires encroachment permits for projects involving excavation in state and county highways and city streets. Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits for construction in the right-of-way.	**Compliant.** Condition of Certification **TRANS-4** requires the project owner to coordinate with all applicable jurisdictions to obtain necessary encroachment permits and comply with all applicable regulations
California Vehicle Code, Sections Divisions 2, 6, 12, 13, 14, 15	Requires licensing of drivers and the classification of license for the operation of particular types of vehicles. Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.	**Compliant.** Condition of Certification **TRANS-1** requires the project owner to comply with limitations imposed by the relevant jurisdictions on vehicle sizes and weights, driver licensing, and truck routes. **TRANS-5** requires the project owner to contract with licensed hazardous materials delivery and waste hauler companies for the transportation of hazardous materials and wastes. It also requires the project owner to ensure compliance with all applicable regulations and to implement the proper procedures.
LOCAL		
Orange County 2005 General Plan, Policy 3.2.	Ensures that all intersections within the unincorporated portion of Orange County maintain a peak hour LOS of D.	**Compliant.** There are no study intersections located in unincorporated Orange County. However, the study road segments located in unincorporated Orange County would operate at LOS better than D during peak construction.
Orange County Congestion Management Program (CMP)	Requires traffic impact analysis for development projects generating 2,400 or more daily trips for projects adjacent to the CMP Highway System, and 1,600 or more daily trips for projects that directly access the CMP Highway System. Requires CMP highway system intersections to maintain an LOS grade of E or better, unless the baseline is lower than E, in which case, the intersection capacity utilization rating cannot increase by more than 0.10.	**Compliant.** The project-added construction traffic would not degrade project intersections to LOS E or worse. Also, the project generates less than 2,400 daily trips and does not require traffic impact analysis per the CMP.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Orange County Code Section 6-1-2	Requires a permit for construction in the rights-of-way.	**Compliant.** Condition of Certification **TRANS-4** would require the project owner to obtain the necessary encroachment permits and comply with all applicable regulations.
City of Stanton General Plan Infrastructure & Community Services Element Infrastructure & Community Services Element, Action ICS-1.1.2 (d)	Maintain LOS D or better on city streets and LOS E or better for CMP or Smart Street roadways. Smart Streets include Beach Blvd and Katella Avenue.	**Compliant.** The segment of Beach Boulevard between Lampson and Chapman Avenues, partially located in the city of Stanton, does not meet minimum standard of LOS E, currently operates at LOS F and would continue to operate at LOS F during peak construction. The road segment already operates at LOS F and peak construction period traffic would only increase the V/C of the road segment by 0.0017, which is less than the 0.10 V/C impact threshold. Also, construction traffic is temporary and operation activities would only generate occasional trips.
City of Stanton Municipal Code Section 10.04.060	Requires commercial vehicles over five tons, including load, to use designated truck routes (including Katella Avenue and Beach Boulevard).	**Compliant.** Conditions of Certification **TRANS-1** and **TRANS-2** require the project owner to comply with applicable jurisdictions' limitations on truck routes and to use truck routes wherever possible.
City of Stanton Municipal Code Section 12.04.010	Requires permits to conduct construction activities within city rights-of-way.	**Compliant.** Condition of Certification **TRANS-4** would ensure that the project owner obtain the necessary encroachment permits and comply with all applicable regulations.
City of Anaheim 2004 General Plan Circulation Element Goal 2.1	Maintain efficient traffic operations on city streets and maintain a peak hour level of service not worse than LOS D at street intersections.	**Compliant.** There are no study intersections within the city of Anaheim. However, all road segments located within the city of Anaheim would operate at LOS D or better during peak construction.
City of Anaheim Municipal Code Section 12.12.010	Requires permits to conduct construction activities within city rights-of-way, including obstructions and repairs.	**Compliant.** Condition of Certification **TRANS-4** requires that the project owner obtain the necessary encroachment permits and comply with all applicable regulations.
City of Anaheim Municipal Code Section 14.48.050	Requires vehicles over three tons to use designated truck routes (including Beach Boulevard, Lincoln Avenue, Ball Road, Katella Avenue, and La Palma Avenue).	**Compliant.** Conditions of Certification **TRANS-1** and **TRANS-2** require the project owner to comply with applicable jurisdictions' limitations on truck routes and to use truck routes wherever possible.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
City of Anaheim Municipal Code Section 14.52.010	Requires issuance of a permit for the movement or operation of vehicles, equipment, or load on Anaheim highways with weight or size exceeding the maximum permitted by the California Vehicle Code.	**Compliant.** Condition of Certification **TRANS-1** requires that the project owner comply with the applicable jurisdictions' limitations on vehicles sizes and weights and driver licensing.
City of Buena Park 2010 General Plan Mobility Element Policy M-5.	Maintain a citywide level of service not to exceed LOS D for intersections during peak hours.	**Compliant.** All study intersections within the city of Buena Park would operate at LOS D or better during peak construction.
City of Buena Park 2010 General Plan Mobility Element Policy M-5.3	Maintain a citywide level of service for roadway segments not to exceed LOS D for daily traffic.	**Compliant.** All study roadways within the city of Buena Park would operate at LOS D or better during peak construction.
City of Buena Park Municipal Code Section 10.36.010	Establishes truck routes for vehicles exceeding three tons.	**Compliant.** Conditions of Certification **TRANS-1** and **TRANS-2** require the project owner to comply with applicable jurisdictions' limitations on truck routes and to use truck routes whenever possible.
City of Buena Park Municipal Code Chapter 12.08	Requires permits to conduct construction activities within the city's right-of-way.	**Compliant.** Condition of Certification **TRANS-4** requires the project owner obtain the necessary encroachment permits and complies with all applicable regulations.
City of Garden Grove 2030 General Plan Circulation Element, Policy CIR-1.2	Encourages a goal of LOS D or better for arterial intersections under the jurisdiction of Garden Grove.	**Compliant.** The study intersection located in Garden Grove operates at an LOS better than LOS D.
City of Garden Grove 2030 General Plan Circulation Element, Policy CIR-1.3	Strives to achieve a minimum traffic LOS D throughout the city, except for major development areas at those intersections that are impacted by factors beyond the city's control or at intersections included in the deficient intersection list.	**Compliant.** The study intersection located in Garden Grove operates at LOS D or better.
City of Garden Grove Municipal Code Section 10.40.030	Establishes truck routes for vehicles exceeding three tons in weight.	**Compliant.** Conditions of Certification **TRANS-1** and **TRANS-2** require the project owner to comply with applicable jurisdictions' limitations on truck routes and to use truck routes whenever possible.
City of Garden Grove Municipal Code Section 11.04.190	Requires a permit to conduct construction in or under the surface of any street or sidewalk within the city.	**Compliant.** Condition of Certification **TRANS-4** requires that the project owner obtain the necessary encroachment permits and complies with all applicable regulations.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
City of Westminster 2016 General Plan Mobility Element Policy M-1.3	Maintain an LOS D for vehicles at intersections and roadways when vehicles are considered a prioritized mode of travel.	**Compliant**. All study intersections in the city of Westminster would operate at LOS D or better during peak construction. The study road segment of Beach Boulevard between SR 22 and Lampson Avenue currently operates at LOS E, and would continue to operate at LOS E during peak construction. A very small portion of this road segment falls within the city of Westminster. Because this road segment is already operating at LOS E, because project construction traffic would not degrade the LOS below E, this impact is not significant, and staff does not consider the LOS E conditions of this road segment during peak construction to be inconsistent with city of Westminster's LORS. Furthermore, peak construction traffic impacts are temporary, and during operation, the project would only add occasional maintenance-related trips to this road segment.
2013 City of Huntington Beach Circulation Element	The lowest acceptable performance for CMP intersections is LOS E.	**Compliant.** The study intersection located in the city of Huntington Beach would operate at LOS E or better.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Traffic and Transportation.

FINDINGS OF FACT

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

1. Construction of the Stanton Energy Reliability Center will add traffic to local roadways during the construction period.
2. Construction traffic will not significantly reduce the Level of Service at any area intersection or impact Level of Service on area roadways.
3. Construction and operations traffic to and from the Stanton Energy Reliability Center will not significantly impact movement by train, bus, bicycle, or pedestrians.

4. The project owner will provide a Traffic Control Plan to minimize traffic disruption in the project area.

5. The Traffic Control Plan will ensure that the Stanton Energy Reliability Center does not significantly degrade the Level of Service on local streets or roadways.

6. The Traffic Control Plan will ensure the implementation of project-related traffic safety measures for the general public as well as for construction workers and drivers of construction-related vehicles.

7. The Stanton Energy Reliability Center has adequate on-site and off-site parking for workforce needs.

8. The Traffic Control Plan required by Condition of Certification **TRANS-2** will mitigate any possible traffic impacts due to off-site construction parking below significance.

9. Transportation of hazardous material to and from the Stanton Energy Reliability Center is mitigated below significance with Condition of Certification **TRANS-5**.

10. The project owner will comply with the California Department of Transportation and all other relevant jurisdictional requirements for any encroachment into public rights-of-way during construction as required by Condition of Certification **TRANS-4**.

11. The project owner will comply with the California Department of Transportation and all other relevant jurisdictional requirements for oversized vehicles as required by Condition of Certification **TRANS-1**.

12. The project owner will repair any damage to roads, easements, and public rights-of-way affected by construction activity as required by Condition of Certification **TRANS-3**.

13. The Los Alamitos Army Airfield and the Fullerton Municipal Airport are located approximately 2.9 miles southeast and 4.5 miles north of the Stanton Energy Reliability Center site, respectively.

14. Given the remote chance of a low-altitude overflight coinciding with both operation of the plant and the rare weather conditions that would create the worst-case plume, impacts to aviation will be less than significant.

15. Condition of Certification **TRANS-7** requires the project owner to consult with the Federal Aviation Administration to ensure that a Notice to Airmen is provided to pilots to avoid flying over the Stanton Energy Reliability Center site.

16. Condition of Certification **TRANS-7** requires Federal Aviation Administration notification for any construction equipment 153 feet above ground level or taller.

17. Condition of Certification **TRANS-7** requires marking and/or lighting for any construction equipment used for Stanton Energy Reliability Center that is 153 feet above ground level or taller.

18. Stanton Energy Reliability Center will not add new workers for its operations; therefore, the Stanton Energy Reliability Center will have a less than a significant impact on operations traffic.

19. There is no evidence that the Stanton Energy Reliability Center will result in long-term significant direct, indirect, or cumulative traffic and transportation impacts.

CONCLUSIONS OF LAW

1. The Stanton Energy Reliability Center project, as mitigated, will comply with all applicable laws, ordinances, regulations, and standards as indicated in the evidentiary record and contained in **Appendix A** in this Decision.

2. The Stanton Energy Reliability Center project will not result in a significant adverse traffic impact on the local and regional transportation network.

C. SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

INTRODUCTION

This section evaluates the proposed Stanton Energy Reliability Center's (SERC) induced changes on existing populations, employment patterns, local communities, local services and resources, and law enforcement services. It analyzes whether the project is located near an environmental justice (EJ) population and evaluates the estimated beneficial economic effects and addresses the SERC's ability to comply with applicable federal, state, and local laws, ordinances, regulations, and standards (LORS) related to socioeconomic impacts.[1]

Evidence on the topic of Socioeconomics and Environmental Justice is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 10, 20, 28, 30, 31, 51, 54, 55, 56, 100, 300, and 302.[2]

SETTING AND PROJECT DESCRIPTION

The SERC project site is located in the city of Stanton, Orange County, California at 10711 Dale Avenue. The SERC will employ an average of 48 workers per month during the approximate 14-month construction period from November 2018 until December 2019. The construction workforce will reach a peak of 78 workers approximately in month eight (June 2019). Approximately 20 percent of the construction workforce will be non-local and will likely relocate closer to the project site.[3]

Once operational, no permanent operational staff will be hired. The SERC will be remotely monitored and/or operated on a continuous basis and technicians will be contracted to provide on-site maintenance as needed.[4]

For detailed information regarding the setting and general project description of the SERC project, please refer to the "Project Description" section of this Decision.

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The California Environmental Quality Act (CEQA) requires a list of criteria to determine the significance of identified impacts. **Appendix G** of the CEQA

[1] Ex. 300, pp. 4.4-3 – 4.4-4.
[2] 8/2/18 RT pp. 29:20 – 30:14.
[3] Ex. 300, p. 4.9-6.
[4] Ex. 300, p. 4.9-16.

Guidelines specifies that a project could have a significant effect on population, housing, and law enforcement services, schools, and parks if it would:

- Induce substantial population growth in an area either directly or indirectly;
- Displace substantial numbers of people and/or existing housing, necessitating the construction of replacement housing elsewhere; or
- Adversely impact acceptable levels of service for law enforcement, schools, and parks and recreation.[5]

The determination of the significance of any impacts on population, housing, police protection, schools, and parks and recreation is based on expert testimony, including input from local and state agencies, and the industry-accepted, two-hour commute range for construction workers and one-hour commute range for operational workers.[6]

Impact Assessment and Mitigation

Environmental Justice

Demographic screening identifies the presence of minority and below-poverty-level populations within a six-mile radius[7] of the proposed SERC site based upon the U.S. Census Bureau's 2010 decennial data and current (2010 – 2016) American Community Survey data.[8]

According to *Environmental Justice: Guidance Under the National Environmental Policy Act*, minority individuals are defined as American Indian or Alaskan Native, Asian or Pacific Islander, Black (not of Hispanic origin), or Hispanic.[9]

An EJ population is identified when one or more U.S. Census blocks[10] within a six-mile radius have a minority population greater than or equal to 50 percent. **Socioeconomics Figure 1** (with a one-, three-, and six-mile radius) identifies the EJ populations near the SERC based on race and ethnicity.[11]

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[5] Ex. 300, p. 4.9-3.

[6] Ex. 300, p. 4.9-3.

[7] The six-mile radius is based on air quality modeling, as described in the **AIR QUALITY** section of the Decision. No other technical area has identified potential impacts that might exceed this distance. (Ex. 300, p. 4.4-1 – 4.4-3.)

[8] Ex. 300, p. 4.4-5.

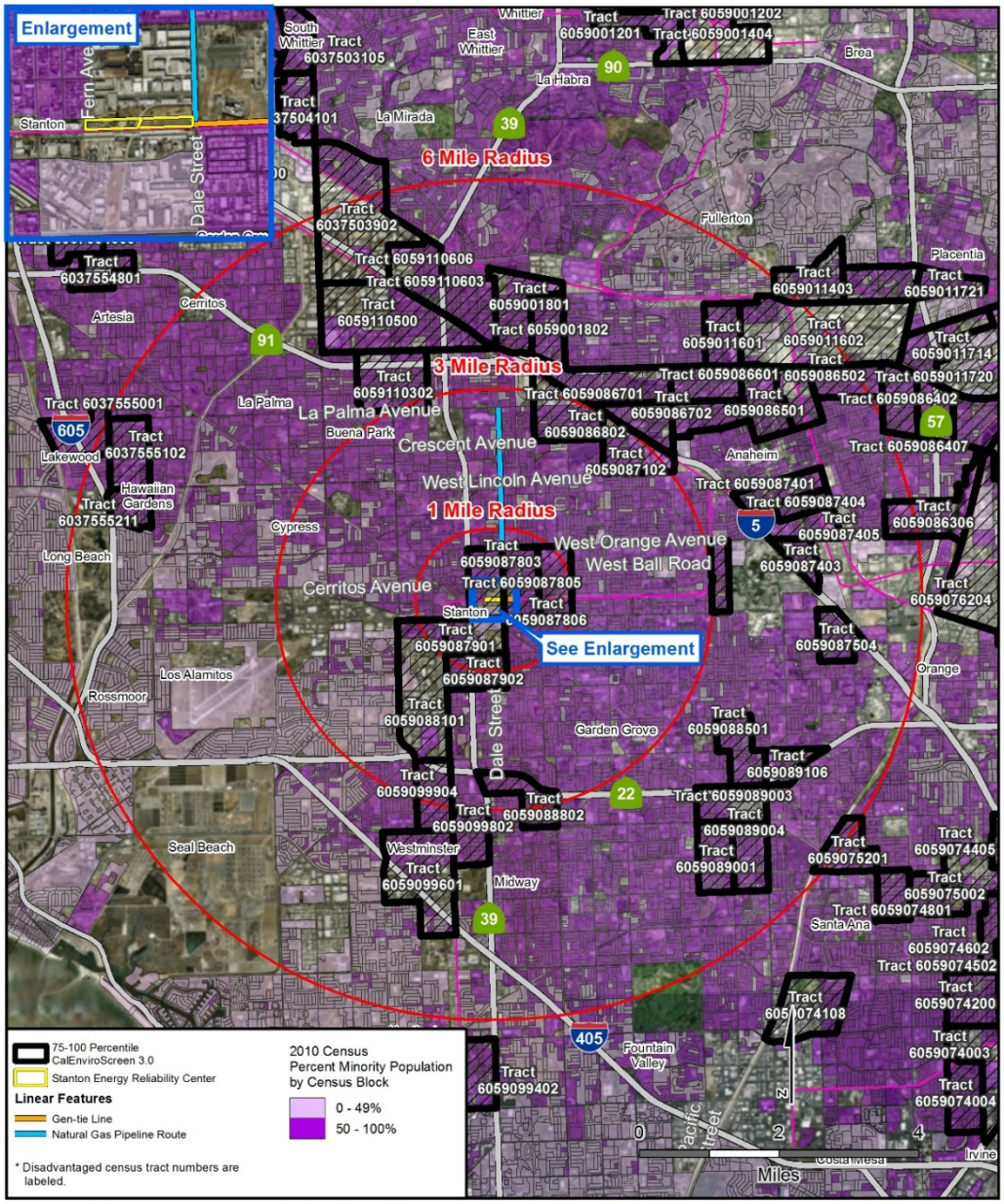
[9] Ex. 300, pp. 4.4-3 – 4.4-4.

[10] Ex. 300, pp. 4.4-5 – 4.4-5. A Census block is the lowest-level geographic entity for which the Census Bureau tabulates sample data from the decennial census.

[11] Ex. 300, p. 4.4-10.

Socioeconomics Figure 1 – Minority Population by Census Block (2010)

ENVIRONMENTAL JUSTICE - FIGURE 1
Stanton Energy Reliability Center - Census 2010 Minority Population by Census Block
with CalEnviroScreen Disadvantaged Communities by Census Tracts



CALIFORNIA ENERGY COMMISSION - SITING, TRANSMISSION AND ENVIRONMENTAL PROTECTION DIVISION
SOURCES: Census 2010 PL 94-171 Data and CalEnviroScreen 3.0 CalEPA 2017
ENVIRONMENTAL JUSTICE

Source: (Ex. 300, p. 4.4-27.)

Socioeconomics Figure 1 (using a one-, three-, and six-mile radius) shows the distribution of EJ populations within census blocks around the SERC.[12] These populations are primarily within the cities of Anaheim, Buena Park, Cypress, Garden Grove, Hawaiian Gardens, La Palma, Los Alamitos, Stanton, Westminster, and the communities of Midway City and Rossmoor.

Socioeconomics **Table 1** provides a comparison of decennial census information with American Community Survey (ACS) data for minority populations. As shown in the table below, the percentage of minority populations in the cities in the project area have remained consistent since 2010, with the exception of the cities of Fullerton and Los Alamitos and the unincorporated community of Rossmoor. The cities of Fullerton and Los Alamitos have a growth in minority population of approximately 4.3 and 7.3 percent, respectively. The unincorporated community of Rossmoor has a growth in minority population of approximately 5.4 percent.[13]

Socioeconomics Table 1

Minority Population Data Within the Project Area !GEOGRAPHIC AREAS IN A SIX-MILE RADIUS		**Total Population**	**Not Hispanic or Latino: White alone**	**Minority**	**Percent Minority (%)**
Anaheim	April 1, 2010 Census [1]	336,265	92,362	243,903	72.53
	2012-2016 Estimate [2]	346,776 ±130	90,059 ±2,069	256,717 ±2,073	74.03 ±0.60
Buena Park	April 1, 2010 Census [1]	80,530	22,302	58,228	72.31
	2012-2016 Estimate [2]	82,771 ±97	21,271 ±1,231	61,500 ±1,235	74.30 ±1.49
Cerritos	April 1, 2010 Census [1]	49,041	8,141	40,900	83.40
	2012-2016 Estimate [2]	49,797 ±50	7,691 ±461	42,106 ±464	84.56 ±0.93
Cypress	April 1, 2010 Census [1]	47,802	20,865	26,937	56.35
	2012-2016 Estimate [2]	48,978 ±52	19,919 ±863	29,059 ±865	59.33 ±1.76
Fullerton	April 1, 2010 Census [1]	135,161	51,656	83,505	61.78

[12] EJ populations based upon race and ethnicity as defined by *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis*.
[13] Ex. 300, p. 4.4-10.

Minority Population Data Within the Project Area !GEOGRAPHIC AREAS IN A SIX-MILE RADIUS		Total Population	Not Hispanic or Latino: White alone	Minority	Percent Minority (%)
	2012-2016 Estimate [2]	139,491 ±60	47,255 ±1,595	92,236 ±1,596	66.12 ±1.14
Garden Grove	April 1, 2010 Census [1]	170,883	38,558	132,325	77.44
	2012-2016 Estimate [2]	174,676 ±97	36,340 ±1,277	138,336 ±1,281	79.20 ±0.73
Hawaiian Gardens	April 1, 2010 Census [1]	14,254	1,044	13,210	92.68
	2012-2016 Estimate [2+]	-	-	-	-
La Palma	April 1, 2010 Census [1]	15,568	4,329	11,239	72.19
	2012-2016 Estimate [2]	15,834 ±40	4,312 ±479	11,522 ±481	72.77 ±3.03
Los Alamitos	April 1, 2010 Census [1]	11,449	6,721	4,728	41.30
	2012-2016 Estimate [2]	11,661 ±43	5,998 ±422	5,663 ±424	48.56 ±3.63
Midway City	April 1, 2010 Census [1]	8,485	1,776	6,709	79.07
	2012-2016 Estimate [2+]	-	-	-	-
Rossmoor	April 1, 2010 Census [1]	10,244	7,845	2,399	23.42
	2012-2016 Estimate [2]	10,933 ±507	7,786 ±451	3,147 ±679	28.78 ±6.06
Stanton	April 1, 2010 Census [1]	38,186	8,340	29,846	78.16
	2012-2016 Estimate [2]	38,594 ±50	7,282 ±722	31,312 ±724	81.13 ±1.87
Westminster	April 1, 2010 Census [1]	89,701	22,972	66,729	74.39
	2012-2016 Estimate [2]	91,635 ±76	22,814 ±911	68,821 ±914	75.10 ±1.00

Notes: Staff's analysis of the 2012- 2016 estimates returned CV values less than 15, indicating the data is reliable. [+] Updated minority data for these communities returned CV values greater than 15 and thus are not reported based on their level of reliability. **Sources:** [1] US Census 2010 and [2] US Census 2017a.

Ex. 300, p. 4.4-11.

Evidence of low income populations in the project area came from a combination of data including ACS poverty data with the most current data from the California Department of Education to evaluate the percentage of school children enrolled in the free/reduced price meal program by school district.[14]

Socioeconomics Table 2 shows poverty data within a six-mile radius of the project site.

Socioeconomics Table 2
Poverty Data and Low Income Data within the Project Area

GEOGRAPHIES IN SIX-MILE RADIUS	**Total**	**Income in the past 12 months below poverty level**	**Percent below poverty level (%)**
	Estimate*	Estimate	Estimate
Cerritos	49,664 ±97	2,380 ±554	4.80 ±1.1
Fullerton	136,540 ±382	20,843 ±2,025	15.30 ±1.5
REFERENCE GEOGRAPHY			
Aggregated CCD's (Total)	3,362,261 ±3,737	493,860 ±8,905	14.69 ±0.27
Downey-Norwalk CCD, LA County	415,780 ±738	58,126 ±2,739	14.00 ±0.7
Long Beach-Lakewood CCD, LA County	577,337 ±641	106,022 ±3,589	18.60 ±0.6
Whittier CCD, LA County	319,399 ±2,106	35,869 ±2,378	11.20 ±0.7
Anaheim-Santa Ana-Garden Grove CCD, Orange County	1,672,939 ±2,642	250,929 ±6,957	15.00 ±0.4
North Coast CCD, Orange County	376,806 ±1,264	42,914 ±2,203	11.40 ±0.6
ORANGE COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS**	Enrollment Used for Meals	Free or Reduced Price Meals	
Westminster School District	9,338	6,619	**70.9%**
Centralia Elementary School District	4,417	2,681	**60.7%**
Buena Park Elementary School District	4,837	3,508	**72.5%**
Magnolia Elementary School District	6,277	5,341	**85.1%**
Savanna Elementary School District	2,331	1,523	**65.3%**

[14] Ex. 300, p. 4.4-11.

Garden Grove Unified School District	44,223	30,136	**68.1%**
Anaheim Elementary School District	18,558	15,557	**83.8%**
Cypress Elementary School District	3,969	1,280	32.2%
Los Alamitos Unified School District	9,904	1,381	13.9%
REFERENCE GEOGRAPHY			
Orange County	490,431	230,464	47%
LOS ANGELES COUNTY SCHOOL DISTRICTS IN SIX-MILE RADIUS**	Enrollment Used for Meals	Free or Reduced Price Meals	
ABC Unified School District	20,768	10,247	49.3%
REFERENCE GEOGRAPHY			
Los Angeles County	1,511,493	1,014,791	67.3%
Notes: * Population for whom poverty status is determined. Staff's analysis of the 2012 – 2016 estimates returned CV values of no more than 15, indicating the data is reliable. **Bold** text indicates geographic area or school district where the population is determined to be an EJ population based on a low income population. **Source**: Ex. 300, p. 4.4-13..			

Based on the percent of population living below the federal poverty level in the geographies in a six-mile radius of the project site, the city of Cerritos has a lower percent below-poverty-level population and the city of Fullerton has a comparable percent of below-poverty-level population when compared with the reference geography of the aggregated CCDs. With the exception of ABC Unified, Cypress Elementary and Los Alamitos Unified school districts, a comparatively larger number of students receive free or reduced price meals than those compared with their respective county.[15]

We find that the population receiving free or reduced price meals in all of the school districts identified in **Socioeconomics Table 2**, with the exception of Los Alamitos Unified, Cypress Elementary, and ABC Unified school districts, constitute an EJ population based on a low-income population as defined by *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis*. [16]

Workforce and Inducement of Substantial Population Growth

Induce Substantial Population Growth

The phrase "induce substantial population growth" is defined as workers moving into the project area for construction and operation jobs, thereby encouraging residential construction or extension of roads or other infrastructure. To determine

[15] Ex. 300, p. 4.4-13.
[16] Ex. 300, pp. 4.4-13 – 4.4-14.

whether the SERC would induce population growth, the record analyzes the availability of the local workforce and the regional population.[17]

Socioeconomics Table 3 shows the historical and projected populations for the cities and communities within proximity of the project site, plus the entirety of Orange County. Population projections between 2010 and 2035 in the cities within and around the six-mile radius show a growth ranging from less than one to 21 percent, or an annual growth rate estimated to be between 0.01 to 0.83 percent per year .[18]

The record contains an analysis of the total labor available within the project study area. The workforce is considered local if the construction workforce resides within a two-hour commute of a project and the operations workforce resides within a one-hour commute.[19] The SERC commute area encompasses the Anaheim-Santa Ana-Irvine Metropolitan Division (Orange County).[20]

Socioeconomics Table 3
Historical and Projected Populations

Area	2010[1]	2020[2]	2035[2]	Projected Population Change 2010-2035		
				Number	Percent (%)	Percent per Year (%)
Anaheim	336,265	369,100	405,800	69,535	20.68	0.83
Buena Park	80,530	83,500	83,200	2,670	3.32	0.13
Cypress	47,802	50,300	51,400	3,598	7.53	0.30
Garden Grove	170,883	179,400	180,300	9,417	5.51	0.22
Hawaiian Gardens	14,254	14,800	15,600	1,346	9.44	0.38
La Palma	15,568	15,600	15,600	32	0.21	0.01
Los Alamitos	11,449	12,000	12,000	551	4.81	0.19
Stanton	38,186	40,800	43,400	5,214	12.01	0.80
Westminster	89,701	92,900	92,600	2,899	3.13	0.13
Orange County	3,010,232	3,266,000[2] 3,260,659[3]	3,421,000[2] 3,504,411[3]	494,179*	14.10	0.56

Notes: * Calculated using the highest 2035 population projection. **Sources:** Ex. 300, p. 4.9-4.

The workforce needed during the project's peak construction workforce month is presented in **Socioeconomics Table 3**. When the project's workforce demand

[17] Ex. 300, p. 4.9-4.

[18] Ex. 300, p. 4.9-4.

[19] Ex. 300, p. 4.9-4.

[20] Metropolitan Division (MD) is a subdivision of a Metropolitan Statistical Area (MSA) forming a smaller grouping of counties that contains a single core population of 2.5 million or more.

reaches a peak for a particular trade outside of the total workforce construction peak, the greatest number of workers for that trade is reported in the table in parenthesis.[21] The record demonstrates that the total labor supply in the study area is more than adequate to provide construction labor for the project.[22]

Socioeconomics Table 3
Total Craft Labor by Skill in the Study Area Metropolitan Division (MD)Versus Project Construction Labor Needs

	Anaheim-Santa Ana-Irvine MD (Orange County)				Project Labor Needs (Plant and Linears)
	Total Workforce (2014)	Total Projected Workforce (2024)	Growth from 2014		Peak Construction Period (June 2019, Month 8)
			Number	Percent	
Surveyor	590	600	10	1.7	2
Operator[1]	2,000	2,380	380	19.0	2 (4)
Laborer[2]	13,020	16,450	3,430	26.3	16
Truck Driver[3]	4,000	4,570	570	14.3	3
Carpenter	12,460	15,680	3,220	25.8	8 (12)
Paving Crew[4]	440	510	70	15.9	0 (2)
Pipefitter	3,800	4,920	1,120	29.5	6
Electrician	6,510	8,780	2,270	34.9	6
Cement Finisher[5]	2,440	3,000	560	23.0	2
Ironworker[6]	450	510	60	13.3	2 (4)
Tradesman[7]	65,360	84,530	19,170	29.3	8
Project Manager[8]	-	-	-	-	1
Construction Manager	5,620	6,680	1,060	18.9	1
Project Manager Assistant	-	-	-	-	1
Engineer	23,490	26,260	2,770	11.8	2
Gen-Tie	-	-	-	-	6
Gas Pipeline	-	-	-	-	12
Total Construction Staff (Plant and Linears)	140,180	174,870	34,690	24.7	78

Notes: - No data available; ( ) Number in parenthesis represents the peak number of workers in a given month for a specific a trade type for construction. The number outside the parenthesis represents the number of workers by trade type during the peak month of construction; [1] Operating Engineers and Other Construction Equipment Operators; [2] Construction laborer; [3] Industrial Truck and Tractor Operators; [4] Paving, Surfacing, and Tamping Equipment Operators; [5] Cement Masons and Concrete Finishers; [6] Structural Iron and Steel Workers; [7] Construction Trades Worker **Source:** Ex. 300, p.4.9-5.

[21] Ex. 300, p. 4.9-5.

[22] Ex. 300, pp. 4.9-4 – 4.9-5.

Approximately 80 percent of the construction workforce is expected to be drawn from Orange County, and thus would be considered local workforce commuting daily within a two-hour commute to the project site. The remaining 20 percent of the construction workforce would be considered non-local and likely to seek lodging closer to the project site, returning to their primary residences on weekends. Therefore, during construction, there will be an average of approximately 38 local and 10 non-local workers. During peak construction there will be approximately 62 local and 16 non-local workers.

During operations, the SERC will not be locally staffed on a daily basis, but will be remotely monitored and operated on a continuous basis from the control/operations center in Sacramento. No operations staff will be hired for the SERC, so no new residents will be added and the project's operations will not create a substantial population influx.[23]

Operation and maintenance technicians may occasionally be dispatched to the project site for routine on-site maintenance as needed. The record indicates that these technicians will be at the facility one to three days each week. The SERC will engage Wellhead Services, Inc. (WSI) for local operation and maintenance of the facility, which may add one to two additional technicians.[24]

Based upon the evidence, we find the project's construction and operation workforces will not directly or indirectly induce a substantial population growth in the project area and, therefore, the project will create a less-than-significant impact under this criterion.

Housing Supply

Socioeconomics Table 4 presents permanent housing supply data for the project area. The cities within a six-mile radius of the project site have a vacancy rate that ranges from 1.8 percent to 4.4 percent. A five percent vacancy is a largely industry-accepted minimum benchmark for a sufficient amount of housing available for occupancy. Although the project area has a limited housing supply, the SERC will not hire permanent operations workers, and thus will not have an impact on the existing housing supply.[25]

[23] Ex. 300, p. 4.9-6.

[24] Ex. 300, p., 4.9-6.

[25] Ex. 300, p. 4.9-7.

Socioeconomics Table 4
Housing Supply Estimates in the Project Area

Permanent Housing Supply		2017	
		Total	Vacant
Anaheim	Number	107,557	4,753
	Percent	100	4.4
Buena Park	Number	24,994	799
	Percent	100	3.2
Cypress	Number	16,244	298
	Percent	100	1.8
Garden Grove	Number	47,789	1211
	Percent	100	2.5
Hawaiian Gardens	Number	3,711	89
	Percent	100	2.4
La Palma	Number	5,230	117
	Percent	100	2.2
Los Alamitos	Number	4,390	154
	Percent	100	3.5
Stanton	Number	11,283	365
	Percent	100	3.2
Westminster	Number	27,856	1,104
	Percent	100	4.0
Unincorporated Orange County	Number	40,799	1,492
	Percent	100	3.7
Orange County	Number	1,083,563	53,399
	Percent	100	4.9
Source: Ex. 300, p. 4.9-7			

Orange County has 507 hotels and 58,723 rooms with an average occupancy rate of 80.6 percent for 2016, along with approximately 350 recreational vehicle and campground spaces within the study area. Two of the RV/campground parks allow extended stay. During construction, there will be approximately 16 non-local workers during peak construction and an average of 10 non-local workers. Non-local workers are likely to seek lodging closer to the SERC site. With many temporary lodging options to choose from, the evidence shows that no new temporary housing will be required as a result of the project.[26]

Based on the record, the SERC will not directly displace existing housing or people, nor induce substantial population growth or create the need for replacement housing to be constructed elsewhere. We find the SERC project's

[26] Ex. 300, p. 4.9-7.

construction and operation workforce will not have a significant adverse impact on the housing supply in the project area, including Orange County.[27]

Impacts to Services from Law Enforcement, Emergency Services, Schools, and Parks and Recreation

Law Enforcement and Emergency Services

The SERC site is located within the jurisdiction of the Orange County Sheriff's Department. The Stanton Sheriff Station is located at 11100 Cedar Street, a distance of approximately one mile from the project site. The estimated response time for priority calls (emergency) is approximately four minutes and the estimated response time for non-priority calls (non-emergency) is approximately 10 minutes.[28]

Conditions of Certification **HAZ-7** and **HAZ-8** require the preparation of site security plans for all phases of this project. *See the **HAZARDOUS MATERIALS MANAGEMENT** section of this Decision for a full assessment of impacts related to hazardous materials.*[29]

Based on the record, we find the SERC project will not result in law enforcement or emergency response times exceeding adopted response time goals. We also find that the project will not necessitate alterations to the police station or the construction of a new police station to maintain acceptable response times for law enforcement and emergency services; therefore, no associated physical impact will result. Thus, the project will not have a significant impact on law enforcement and emergency services.[30]

Education

The project is in the Magnolia Elementary School District (Magnolia ESD) and Anaheim Union High School District (Anaheim UHSD). The record shows that construction workers tend to not bring their families with them when working on a job and return to their residences over the weekends. Since no operations staff will be hired for the project, no additional students will be added to the school districts due to the SERC.

[27] Ex. 300, pp. 4.9-7 – 4.9-8.

[28] Ex. 300, p. 4.9-8.

[29] Ex. 300, p. 4.9-9.

[30] Ex. 300, p. 4.9-9.

We find that the SERC project would not result in significant impacts to school facilities and there will be no environmental impacts associated with the SERC under this criterion.[31]

Please see the discussion of school impact fees in the "Compliance with LORS" subsection below.[32]

Parks

The city of Stanton has two recreation centers, six parks, and one sports facility, totaling 37.11 acres of land. The closest park to the project is Hollenbeck Park, located less than half a mile from the SERC site.[33] The city has a park area standard of 0.94 acre per 1,000 residents. The estimated population of the city of Stanton is 38,594. Based on this estimate, the city needs approximately 36.3 acres of local parks/facilities to meet their standard, which it currently does.[34]

The record shows that there will not be a large number of workers moving into the project area during construction and no workers moving to the project area for project operations. Non-local construction workers tend not to visit parks and recreation facilities or bring their families with them when working on a job. Therefore, there will be no increase in the usage of or demand for parks or other recreational facilities due to the construction or operation of the SERC.

We find that the project will not cause significant environmental effects associated with the provision of new or physically altered government facilities in order to maintain acceptable service ratios, response times, or other performance objections with respect to parks. The SERC will not increase the use of parks or recreational facilities to the extent that substantial physical deterioration of the facilities would occur, or be accelerated. The SERC will not necessitate the construction of new parks in the area, and thus will have no impact under this criterion.[35]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the

[31] Ex. 300, p. 4.9-11.
[32] Ex. 300, p.; 4.9-11.
[33] Ex. 300, p. 4.9-9.
[34] Ex. 300, p. 4.9-10.
[35] Ex. 300, p. 4.9-10.

effects of (1) past projects, (2) other current projects, and (3) probable future projects.[36]

In a socioeconomic analysis, cumulative impacts could occur when more than one project in the same area has an overlapping construction schedule, thus creating a demand for workers that cannot be met locally, or when a project's demand for public services does not match a local jurisdiction's ability to provide such services. An influx of non-local workers and their dependents can strain housing, parks and recreation, and law enforcement and emergency services.

In assessing direct and cumulative impacts from projects that would employ a similar workforce, have overlapping construction schedules, and or could require housing non-local construction workers, the workforce for the cumulative projects would include about 20 percent non-local workers.[37] [38]

The cumulative projects are at different stages of approval and construction, so the labor needed to construct them and any associated housing needed for non-local workers would be spread out over time, instead of occurring all at one time. Also as discussed previously, Staff estimates that as with the SERC construction, approximately 20 percent of the workforce needed for the cumulative projects will be non-local and seek lodging closer to the project sites. **Socioeconomics Table 5** presents the total labor force within Anaheim-Santa Ana-Irvine MD (Orange County).[39]

Socioeconomics Table 5
Table Labor Supply for the Local Study Area

Total Labor (Construction Workforce)*	Total Workforce for 2014	Total Projected Workforce for 2024	Growth from 2014	Percent Growth from 2014 (%)
Anaheim-Santa Ana-Irvine MD (Orange County)	140,180	174,870	34,690	24.7
Notes: Total workforce includes only the crafts specifically needed for the SERC. **Source:** Ex. 300, p. 4.9-16.				

[36] Cal. Code Regs., tit. 14, § 15130.
[37] Ex. 300, p. 4.9-12.
[38] The projects that Staff considered as part of the cumulative setting for socioeconomic resources are listed in **Socioeconomics Table 5** in the **SOCIOECONOMICS** section of the Final Staff Assessment.[38]
[39] Ex. 300, p. 4.9-16.

Even if several of the cumulative projects were to have overlapping construction schedules with their peak construction activity occurring at the same time, this workforce is more than sufficient to accommodate the labor needs for the projects identified by Staff, including the SERC.

Because the construction schedule is relatively brief and the project will not hire permanent operational staff, there will not be a permanent influx of workers. Therefore, the SERC will not have a cumulatively considerable impact to housing supplies, schools, parks and recreation facilities, law enforcement or emergency services (see the **HAZARDOUS MATERIAL MANAGEMENT** section of this Decision for the security and emergency services).[40]

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

Socioeconomics Table 6 provides an assessment of the SERC's compliance with applicable LORS pertaining to the socioeconomic effects of the SERC project.

Socioeconomic Table 6
Laws, Ordinances, Regulations, and Standards[41]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
STATE		
California Education Code, Section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.	**Compliant.** Condition of Certification **SOCIO-1** requires the project owner to pay school impact fees to the Magnolia Elementary School District and Anaheim Union High School District.
LOCAL		
Magnolia Elementary School District Board Policy BP 7211 Facilities: Developer Fees	In order to finance the construction or reconstruction of school facilities needed to accommodate students coming from new development, the Governing Board may establish, levy and collect developer fees on residential, commercial and industrial construction within the district, subject to restrictions specified by law and administrative regulation.	**Compliant. SOCIO-1** requires the project owner to pay school impact fees to the Magnolia Elementary School District.

[40] Ex. 300, p. 4.9-16.

[41] Ex. 300, pp. 4.9-2; 4.9-18.

NOTEWORTHY PUBLIC BENEFITS

For purposes of socioeconomic impacts analysis, noteworthy public benefits include changes in local economic activity and local tax revenue that will result from project construction and operation. To assess the gross economic value of the SERC project, the Applicant developed an economic computer database and modeling system to create an input-output model that was reviewed by Staff.[42]

Impact estimates reflect two scenarios: a construction phase and an operations phase of the project. For both phases, the analysis estimated the total direct, indirect, and induced economic effects on employment and labor income.

Direct economic effects represent employment, labor income, and spending associated with construction and operation of the SERC. Indirect economic effects represent expenditures on intermediate goods made by suppliers who provide goods and services for the project. Induced economic effects represent changes in household spending that occur due to the wages, salaries, and proprietor's income generated through direct and indirect economic activity.[43]

Socioeconomics Table 7 reports the Applicant's estimates of the economic impacts/benefits that will accrue to Orange County due to project construction and operation. Impact estimates reflect the construction phase and the operations phase of the project. For both phases, the Applicant estimated the total direct, indirect, and induced economic effects on employment and labor income.

Socioeconomics Table 7
Stanton Economic Benefits (2016 dollars)

TOTAL FISCAL BENEFITS[1]	
Estimated annual property taxes	$1.665 million
State and local sales taxes:	
Construction	Based on $2.35 million in local expenditures
	$211,500 total, $58,750 local
Operation	Based on $1.46 million
	$131,400 total
School Impact Fees	Estimated total: $1204.50
	$613.20 for Magnolia Elementary School District

[42] Ex. 300, p. 4.9-19.

[43] Ex. 300, p. 4.9-19.

TOTAL FISCAL BENEFITS[1]	
	$591.30 for Anaheim Union High School District
TOTAL NON-FISCAL BENEFITS	
Total capital costs	$150 million
Construction payroll (incl. benefits)	$12.4 million
Operations and maintenance budget	$1.46 million annually
Construction materials and supplies	$112 million
TOTAL DIRECT, INDIRECT, AND INDUCED BENEFITS	
Estimated Direct Benefits	
Construction Jobs	48 (average), 78 (peak)
Operation Jobs	0[2]
Estimated Indirect Benefits	
Construction Jobs	8
Construction Income	$507,700
Operation Jobs	2
Operation Income	$329,550
Estimated Induced Benefits	
Construction Jobs	74
Construction Income	$4,778,700
Operation Jobs	2
Operation Income	$174,120

Notes: [1] Based on applicant's estimates.[2] Applicant will contract technicians to provide onsite routine maintenance as needed. **Source:** Ex. 300, p. 4.9-20.

Property Tax

The Board of Equalization has jurisdiction over the valuation of a power-generating facility for tax purposes, if the power plant produces 50 megawatts (MW) or greater. Therefore, the Board of Equalization is responsible for assessing property value. The property tax rate is set by the Orange County Auditor-Controller's office. Property taxes are collected and distributed at the county level.[44]

As shown in **Socioeconomics Table 7**, construction of the SERC will add approximately $150 million (capital cost) and with a property tax rate consistent with the current rate (fiscal year 2016-2017) for the existing project site (1.10046 percent), the project will generate approximately $1.65 million in property taxes during the first operation year of the project. The revenue collected from property taxes is distributed among school districts, special districts, redevelopment trust funds, unincorporated areas, and incorporated areas (cities) by Orange County.

[44] Ex. 300, p. 4.9-20.

The remaining property tax generated above 1 percent (0.10046 percent) is distributed in whole to the city.[45]

AGENCY AND PUBLIC COMMENTS

The following comments related to the project's socioeconomic impacts were made during the Evidentiary Hearing.

- **Roxanne Klatt, Patrick Loughran, Brenda Ward**, and **Isaac Trejo**, representing the local Carpenters Union spoke in favor of the project because it would allow skilled workers to work close to home. They also spoke of the many opportunities as well as programs for apprentices, women, and veterans.
- **Ernesto Medrano**, representing the Los Angeles/Orange County Building and Construction Trades and the Anaheim Public Utility Board, spoke in favor of the SERC power plant because it will provide grid reliability, jobs, and civic improvements.
- **Leslie Reinmiller**, representing the Sheet Metal Workers, spoke in favor of the SERC and described the union's programs that enable young people to be trained as apprentices.
- **Randy Brown**, Roundtree Gardens, spoke in favor of the SERC in relation to the energy reliability it will provide to the senior living community who depend on it.
- **Johnny Cangey**, Buena Park resident, spoke in favor of unions and the Community Workforce Agreement.
- **Ray Avila** and **Kevin Brault**, representing the Iron Workers Union, and **Adam Elliott**, representing Plumbers and Pipefitters, spoke in favor of using local union labor.

RESPONSE: We acknowledge the Applicant's consideration of union labor for the SERC project. However, the Energy Commission would not be a party to labor agreements, which are solely within the discretion of the Applicant.

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. We have considered environmental justice factors in our analysis of the evidence.

[45] Ex. 300, p. 4.9-21.

2. Demographic screening identifies the presence of environmental justice, minority, and below-poverty-level populations within a six-mile radius of the Stanton Energy Reliability Center.

3. The Stanton Energy Reliability Center will not cause disproportionate significant socioeconomic impacts to any population in the project vicinity.

4. A large skilled labor pool is available in the Anaheim-Santa Ana-Irvine Metropolitan Division of Orange County.

5. The Stanton Energy Reliability Center will draw primarily upon the local work force from Orange County.

6. The Stanton Energy Reliability Center will not cause an influx of a significant number of construction or operation workers into the local area.

7. There is an adequate supply of hotels/motels and rental properties within the project vicinity to accommodate workers who stay in the area temporarily during the week and commute to their homes on the weekends.

8. The Stanton Energy Reliability Center will not result in significant adverse effects on local employment, housing, schools, parks and recreation, law enforcement, or emergency services.

9. The Stanton Energy Reliability Center will have a construction payroll of approximately $12.4 million.

10. The Stanton Energy Reliability Center will result in local direct construction expenditures of approximately $2.35 million.

11. The Stanton Energy Reliability Center will generate approximately $1.65 million in annual property taxes.

12. Project construction will generate approximately $211,500 total state and local tax revenue.

13. When operational, the Stanton Energy Reliability Center will provide about $131,400 per year in state and local sales taxes.

14. The anticipated construction and operation payrolls, the local purchases of materials and supplies, and the sales and property tax revenues generated by the Stanton Energy Reliability Center will have a beneficial impact on the Orange County economy.

15. Neither the construction nor the operation of the Stanton Energy Reliability Center will create an additional demand for housing or public services.

16. The available workforce is sufficient to accommodate the labor demands of the Stanton Energy Reliability Center and other reasonably foreseeable projects.

17. The Stanton Energy Reliability Center will not make a cumulatively considerable contribution to any significant adverse cumulative impacts on population, housing, schools, parks and recreation, or law enforcement.

CONCLUSIONS OF LAW

1. The record contains an adequate analysis of potential socioeconomic effects in accordance with federal and state guidelines on environmental justice, and establishes that the project will not create any disproportionate adverse effects on minority or low-income populations.

2. No significant adverse socioeconomic impacts will occur as a result of construction and operation of the Stanton Energy Reliability Center.

D. NOISE AND VIBRATION

INTRODUCTION

In this section, we evaluate whether noise and vibration produced during the construction and operation of the Stanton Energy Reliability Center (SERC) will be mitigated sufficiently to comply with applicable laws, ordinances, regulations, and standards (LORS) and avoid the creation of significant impacts.

Evidence on the topic of Noise and Vibration is contained in Exhibits 1, 2, 3, 4, 5, 6, 17, 28, 30, 31, 55, 56, 69, 74, 88, 92, 95, 100, 105, 106, 300, and 308.[1]

SETTING AND PROJECT DESCRIPTION

The SERC project will be located on two adjoining legal parcels in the City of Stanton, California, in an industrial zoned area. The two parcels, totaling approximately four acres, are bisected by the Stanton Stormwater Channel, which runs north and south. Adjacent to the SERC site to the south is an active Union Pacific railroad line running east and west. The Katella Mobile Home Estates is located approximately 100 feet southeast of the east parcel, and a single-family home community is located approximately 65 feet northwest of the western parcel.

The SERC project is designed to operate as a simple-cycle power plant with an on-site battery energy storage system and synchronous condenser capability. The batteries will operate during the ramping of the gas turbines from cold condition to full load, providing instantaneous and continuous response to the electricity grid. Use of the battery system and synchronous condenser is not expected to operate during the night.

The SERC will install a transmission generation tie-line to connect the project to the Barre Substation located across Dale Avenue to the east of the site. A new 2.75-mile natural-gas-pipeline will extend from La Palma Avenue in Buena Park, California, to the SERC site within the cities of Anaheim, Buena Park, and Stanton. Water and wastewater services for the SERC will be supplied via existing pipelines.

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

ENVIRONMENTAL ANALYSIS

Thresholds of Significance

The California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified and either eliminated or mitigated to the extent feasible. Section XII of **Appendix G** of CEQA's guidelines[2] describes some characteristics that could signify

[1] 8/2/18 RT pp. 29:20 – 30:14.

[2] Cal. Code Regs., tit. 14, **Appendix G**

a potentially significant impact. Specifically, a significant effect from noise may exist if a project would result in:

1. Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
2. Exposure of persons to, or generation of, excessive ground borne vibration or ground borne noise levels;
3. Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
4. Substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Energy Commission has historically determined that an increase in background noise levels up to and including 5 dBA is less than significant, and an increase of above 5 dBA could be either significant or less than significant depending upon the circumstances of a particular project. Factors that Energy Commission staff (Staff) considers in determining if the noise is significant or not, are the:

- resulting noise level and character of the noise;
- time the noise is produced (day or night) and duration and frequency of occurrence of the noise; and
- land use designation of the affected receptor site and the type of receptor (residential, commercial, etc.).[3]

In addition, noise due to construction activities is usually considered to be less than significant in terms of CEQA compliance if construction activity is temporary and use of heavy equipment and activities causing high levels of noise are limited to daytime hours.[4]

Noise-sensitive land uses are typically residences, schools, hospitals, nursing homes, churches, and libraries. The city noise level performance standards from non-transportation noise sources are set for residential properties only. The Stanton Municipal Code specifies the following (long-term) exterior noise limits for noise-sensitive receptors, which Staff used to establish the project's LORS-related operational thresholds at noise monitoring locations. The performance standard is set at 55 dBA L_{eq} from 7:00 a.m. to 10:00 p.m., and 50 dBA L_{eq} from 10:00 p.m. to 7:00 a.m.[5]

Stanton Municipal Code section 9.28 sets noise limits within the boundaries of city land-use districts. Specific construction noise limits for noise-sensitive locations are exempted from the SERC municipal noise restrictions. However, noise sources associated with

[3] Ex. 300, p. 4.7-5.
[4] Ex. 300, p. 4.7-6.
[5] Stanton Municipal Code § 9.28, Noise Zone 1.

construction are not allowed between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and Saturdays, and at any time on Sundays and federal holidays. These restrictions, therefore, allow construction-related noise in the city of Stanton between the hours 7:00 a.m. to 8:00 p.m., Monday through Saturday.[6]

The City of Anaheim Municipal Code limits construction or building repair of any premises to between the hours of 7:00 a.m. and 7:00 p.m., if the activity takes place within a 500-foot radius of a residential area. For the SERC, these limits apply to the construction of specific sections of the SERC's linear facilities.

The City of Buena Park has adopted the County of Orange noise ordinance sections 4-6-1 through 4-6-16, which limit construction activities to between 7:00 a.m. and 8:00 p.m. on weekdays and Saturday. For the SERC, these limits apply to the construction of specific sections of the SERC's linear facilities.[7]

Federal and State laws regulate worker noise exposure.

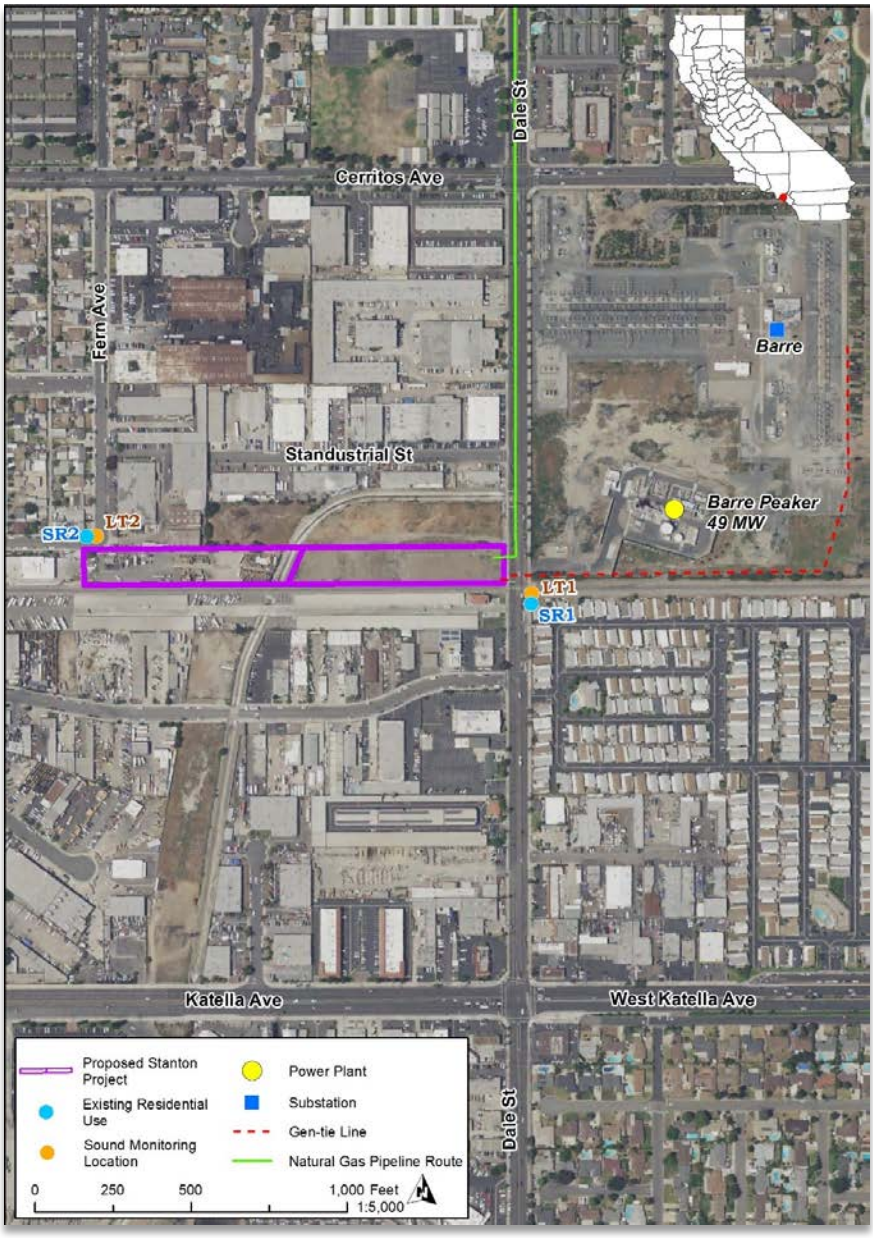
Impact Assessment and Mitigation

The construction and operation of a power plant will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors, combine to determine whether project-related noise will cause significant adverse impacts. In some cases, vibration may be produced as a result of construction activities such as blasting or pile driving; these activities have the potential to cause structural damage and annoyance.

Sound monitoring locations (LT1 and LT2) were set up for the nearest residences – LT1 was next to the mobile home community southeast of the SERC site, and LT2 was next to the single-family homes northwest of the site (see **Noise and Vibration - Figure 1**).[8]

[6] Ex. 300, p. 4.7-4.
[7] Ex. 300, p. 4.7-5.
[8] Ex. 300, pp. 4.7-1 – 4.7-2.

Noise and Vibration - Figure 1



Source: Ex. 308, p. 6.

To evaluate impacts to the noise-sensitive receptors represented at monitoring locations LT1 and LT2, project noise is compared with measured ambient noise levels. The Applicant conducted an ambient noise survey on August 4, and 5, 2015, and then again on August 23, and 24, 2016, using calibrated sound-recording equipment and industry-accepted standards and techniques. The noise survey monitored existing noise levels at the locations identified in **Noise and Vibration Table 1** below, and **Noise Figure 1**.[9]

[9] Ex. 300, p. 4.7-6.

Construction

Physical construction of the SERC will last approximately 14 months, including commissioning and completion of the electric connection facilities.[10] Because construction noise typically varies with time, it is most appropriately measured by and compared with the equivalent sound level, or L_{eq} metric. In general, L_{eq} noise levels from the loudest construction activities average about 89 dBA L_{eq} at 50 feet from the noise source. Using this average, construction noise level would be about 71 dBA L_{eq} at monitoring location LT1, and 73 dBA L_{eq} at LT2. See **Noise and Vibration Table 1** below.[11]

Noise and Vibration Table 1
Ambient Noise Survey Summary[1]

Monitoring Location (Receptor)	Description	Date of Noise Survey[2]	Distance to Noise Source (feet)	Hourly L_{eq} dBA Daytime (7 am to 10 pm)	Hourly Leq dBA Nighttime (10 pm to 7 am)	Hourly L_{90} dBA Nighttime (Quietest 4-hrs)[3]
LT1	Roadway traffic from Dale Avenue; railroad use	August 4 to 5 (2015) August 26 to 24 (2016)	400	67.2 69.5	60.1 62.8	44.2 40.8
LT2	Nearby industrial facilities; railroad use	August 4 to 5 (2015) August 26 to 24 (2016)	300	57.9 59.2	49.1 51.9	36.3 37.5

Notes:
1. Base averages from SERC 2016a, Tables 5.7-4 through 5.7-7, and SERC 2017b Table 5.5-7 revised.
2. The August 4 to 5, 2015 noise survey was 23 hours long, not a 25-hour period, missing the 12:00 pm and 1:00 pm hours.
3. Lowest consecutive 4 hours, L90.

Construction noise levels at LT1 and LT2, when combined with ambient noise levels at these locations, are presented below in **Noise and Vibration Table 2**.

[10] Ex. 307, p. 1.
[11] Ex. 300, p. 4.7-6.

Noise and Vibration Table 2
Cumulative Construction Noise at Monitoring Locations LT1 and LT2

Monitoring Location (Receptor)	Ambient Noise (dBA hourly L_{eq})[1]	Construction Noise (dBA hourly L_{eq})	Cumulative Ambient and Construction Noise (dBA hourly L_{eq})
LT1	68	71	73
LT2	59	73	73

[1] Existing baselines are averaged from the two dates shown in **Noise and Vibration Table 1. Source: Ex. 300, p. 4.7-7.**

The construction noise level of 71 dBA L_{eq} at monitoring location LT1, combined with the existing average daytime ambient of 68 dBA L_{eq} at this location, results in 73 dBA hourly L_{eq}. The average construction noise level would be 5 dBA above ambient noise at LT1.[12]

At LT2, the construction noise level of 73 dBA L_{eq} at monitoring location LT2, combined with the existing average daytime ambient of 59 dBA L_{eq} at this location, results in 73 dBA hourly L_{eq} (see **Noise and Vibration Table 2**). The average construction noise level would be 14 dBA above ambient noise at LT2.

A noise level increase of more than 5 dBA can be significant, depending on the particular circumstances of the project, such as the time the noise is produced (day or night). For construction, noise is usually considered to be less than significant in terms of CEQA compliance if construction activity is temporary and use of heavy equipment and activities causing high levels of noise are limited to daytime hours.

Construction of the SERC would be temporary (14 months, including commissioning and completion of the electric connection facilities)[13] and limited to daytime hours, reducing the potential for noise impacts. Construction of linear facilities typically occurs at a relatively rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. Additionally, the above-predicted noise levels are based on data collected from construction equipment of the 1970s era and are considered conservative, because more modern construction equipment has been designed and built to be quieter.[14]

To ensure construction noise does not significantly impact human receptors at LT1 and LT2, we impose Conditions of Certification **NOISE-1**, **NOISE-2**, and **NOISE-6**. Condition of Certification **NOISE-1** and **NOISE-2** establish a public notification and noise complaint

[12] Ex. 300.
[13] Ex. 307, p.1.
[14] Ex. 300, p. 4.7-8.

process to resolve any complaints regarding construction noise. Condition of Certification **NOISE-6** requires construction work to be performed in a manner to ensure the potential for noise complaints is reduced as much as practicable and in conformance with Stanton Municipal Code section 9.28; construction is limited to between 7:00 a.m. and 8:00 p.m. Monday through Saturday.[15] Condition of Certification **NOISE-6** further limits construction hours for each segment of the linear facilities to its respective city's hourly limits – City of Anaheim 7:00 a.m. to 7:00 p.m., City of Buena Park 7:00 a.m. to 8:00 p.m., and City of Stanton 7:00 a.m. to 8:00 p.m. Therefore, installation of the linear facilities will not result in a significant noise impact.[16]

Depending on the type of equipment foundation, final locations, and depths of underground facilities, as stated in the project's final engineering design, sheet-piles may be required along the southern boundary of the property to protect the railroad embankment during construction activities. Installation of these sheet-piles may require the use of an impact pile driver, which could be expected to reach 101 dBA at a distance of 50 feet. Based on this, the range of pile driving noise at monitoring location LT1 and LT2 would be approximately 83 dBA and 85 dBA, respectively. These levels exceed the ambient level at LT1 by 15 dBA and at LT2 by 26 dBA. Therefore, pile driving using traditional techniques can potentially cause a significant noise impact at these noise-sensitive receptors. However, several best management methods are available for reducing noise and vibration generated by traditional pile driving. These methods include (1) the use of pads or impact cushions of plywood, (2) dampened driving, which involves some form of blanket or enclosure around the hammer, and (3) the use of vibratory drivers or hydraulic pile pushers instead of impact drivers. These methods can be effective in reducing the noise by 8 dBA to15 Dba, as compared to un-silenced pile drivers.[17]

Pile Driving

To ensure that pile driving noise will be controlled and this work would be performed in a manner to reduce the potential for any noise complaints, we impose Condition of Certification **NOISE-7,** which requires the owner to perform impact sheet-pile driving in a manner that reduces the potential for any project-related noise and vibration complaints. It also requires the project owner to notify the residents in the vicinity of impact sheet-pile driving prior to start of impact sheet-pile driving activities. Also, Condition of Certification **NOISE-6** limits pile driving to occur between 7:00 a.m. and 8:00 p.m.[18]

Employee Protection

The Applicant has acknowledged the need to protect construction workers from noise hazards and has recognized applicable LORS that would protect construction workers.

[15] Ex. 300, p. 4.7-8.
[16] Ex. 300, p. 4.7-8.
[17] Ex. 300, pp. 4.7-8 – 4.7-9.
[18] Ex. 300, p. 4.7-9.

To ensure construction workers are, in fact, adequately protected, we impose Condition of Certification **NOISE-3,** which requires the project owner to implement a noise control program consistent with the United States Occupational Safety and Health (OSHA) and the California Division of Occupational Safety and Health (Cal/OSHA) requirements.[19]

With the adoption of the conditions of certification identified above, we find that the SERC's construction noise impacts will be mitigated to less than significant levels at the nearby sensitive noise receptors.

Operations

Power plant operational noise is steady in nature, unlike the intermittent and variable nature of noise from construction; thus, it tends to define the background noise level. Therefore, power plant operational noise is analyzed in comparison to existing ambient background noise levels at affected sensitive receptors to determine if a significant noise impact will occur. If so, then feasible mitigation must be applied to the project to either reduce or remove that impact.

The primary operational noise sources of the SERC project will be the gas-turbine air inlet, gas-turbine generator, selective catalytic reduction (SCR) module, exhaust-air stack, gas compressor, electric transformer, cooling fans, and some pumps, piping, and valves. Operation of the battery energy system, which will be placed in an enclosed building, and the synchronous condenser, will not increase operational noise generated by the project.[20]

The batteries will draw electricity directly from the electricity grid in times of over-generation when most of the SERC noise-producing equipment, associated with the simple-cycle units, is not in operation. In this mode, noise attributable to operation of the project from operation of the batteries will be at least 5 dBA lower at monitoring locations LT1 and LT2 than when the simple-cycle units are in operation.[21]

During synchronous condenser operation, the generator will be acting as a motor or "load" on the grid and will not generate electricity. For synchronous condenser operation, the combustion turbines would be started and operated until the generator synchronizes with the grid, at which time the combustion turbine would be immediately shut down. After the turbines are shut down, noise attributable to the SERC's synchronous condenser operation will be at least 5 dBA lower at monitoring locations LT1 and LT2 than with the turbines in operation.[22]

[19] Ex. 300, p. 4.7-9.
[20] Ex. 300, p. 4.7-9.
[21] Ex. 300, p. 4.7-9.
[22] Ex. 300, p. 4.7-10.

The record contains several effective mitigation measures to reduce noise generated by the SERC's operation, including noise barriers and enclosures that are typically implemented for simple-cycle power plants.[23]

The SERC's loudest operational noise level, at monitoring locations LT1 and LT2 based on acceptable industry standard modeling in comparison to the Stanton city noise limits, is tabulated in **Noise and Vibration Table 3** below.

Noise and Vibration Table 3
LORS Limits and Predicted Operational Noise Level at LT1 and LT2

Monitoring Location (Receptor)	Description	Daytime Hourly L_{eq} (dBA) 7 am to 10 pm	Nighttime Hourly L_{eq} (dBA) 10 pm to 7 am
LT1	City of Stanton Limit (L_{eq})	55	50
	Stanton project Operational Noise	49	49
	Compliance with LORS?	Yes	Yes
LT2	City of Stanton Limit (L_{eq})	55	50
	Stanton project Operational Noise	43	43
	Compliance with LORS?	Yes	Yes

Source: Ex. 300, p. 4.7-11.

As shown in **Noise and Vibration Table 3**, operational noise at LT1 and LT2 will comply with the city of Stanton's noise criteria. To ensure that the SERC operation will not exceed the city of Stanton's noise criteria, we impose Condition of Certification **NOISE-4**, which requires an operational noise survey to ensure project compliance with the noise limits. Conditions of Certification **NOISE-1** and **NOISE-2** establish a public notification and noise complaint process and require the project owner to resolve any complaints that may be caused by operational noise. With implementation of these conditions of certification, noise due to project operation will comply with the applicable LORS.[24]

The SERC is expected to operate as an intermediate-load and peaking facility, primarily between 7:00 a.m. and 10:00 p.m. It is expected to operate rarely between 10 p.m. and 7 a.m. when nearby residents could be impacted if the noise impacts are left unmitigated. For these receptors, project noise is evaluated by comparing it with night-time ambient background noise. The record contains an analysis of the average of the night-time hourly background noise level in terms of the L_{90} metric (the noise level that is exceeded 90 percent of the time) to arrive at a reasonable baseline for comparison with the SERC's predicted noise level. **Noise and Vibration Table 4** below compares the SERC's operational noise level with the ambient night-time noise levels.[25]

[23] Ex. 300, p. 4.7-10.
[24] Ex. 300, p. 4.7-11.
[25] Ex. 300, p. 4.7-11.

Noise and Vibration Table 4
Predicted Operational Noise Level at Sensitive Receptors and CEQA Limits

Monitoring Location (Receptor)	Operational Noise Level (dBA)	Nighttime Ambient L_{90} (dBA)[1]	Combined, Ambient Plus Project (dBA)	Change (dBA)
LT1	49	43	50	+7
LT2	43	37	44	+7

[1] Existing baselines are averaged from the two dates shown in **Noise and Vibration Table 1**

As shown in **Noise and Vibration Table 4**, operational noise will result in a 7 dBA increase at both receptor locations, LT1 and LT2. This increase is potentially significant. However, night-time project operation may only occur when there is a need for critical electrical reliability support. Even when this need arises, full operation of the SERC at night could result in noise levels as high as 49 dBA at LT1 and 43 dBA at LT2. Given that the increase in noise levels will occur rarely, if at all, and in light of the protections provided in Conditions of Certification **NOISE-1**, **NOISE-2**, **and NOISE-4,** we find the increase in the night-time ambient levels due to project operation will not cause a significant noise impact at the noise-sensitive receptors near the SERC.

One possible source of nuisance could be strong tonal noises from power plant equipment. Tonal noises are individual sounds (such as pure tones) which, while they may not be louder than permissible levels, stand out in sound quality, such as high-pitched sounds. To ensure that tonal noises do not cause public nuisance, we impose Condition of Certification **NOISE-4** to require mitigation measures, if necessary, to ensure the project does not create tonal noises.

The Applicant will install a natural-gas pipeline and electric transmission generator tie-line. Water supply and wastewater lines for the SERC will be delivered via existing pipelines. The generator-tie line, natural-gas pipeline, and water and wastewater pipelines will be underground, and therefore not likely heard during power plant operation. Therefore, the operation of linear facilities will result in less than significant noise impacts.[26]

Vibration

Vibration from an operating power plant can be transmitted through ground-borne vibration and airborne vibration. The components of the SERC that have the potential to create vibration will be the high-speed gas turbines and electric generators, the natural-gas compressor, and various pumps. Modern power plants using gas-turbine technologies similar to the SERC project have not resulted in vibration impacts, but

[26] Ex. 300, p. 4.7-12.

permanent vibration sensors will be attached to the turbines and generators. Ground-borne vibration from the SERC will likely be undetectable by any off-site receptor.

Airborne vibration (low frequency noise) can rattle windows and objects on shelves, and can shake the walls of lightweight structures. The project's chief source of airborne vibration during operations will be the gas-turbine exhaust air. In a power plant such as the SERC, however, the exhaust must pass through the SCR module and stack silencer before it reaches the atmosphere. The SCR and stack silencer act as efficient mufflers and significantly reduce airborne vibration. Thus, the SERC will cause less than significant airborne vibration effects that will be perceived off site.[27]

Employee Protection

The Applicant acknowledges the need to protect power plant operating and maintenance workers from noise hazards. To ensure that plant operating and maintenance workers are adequately protected in accordance with these LORS, we impose Condition of Certification **NOISE-5,** which requires the project owner to undertake an occupational noise survey to determine which areas of the facility, if any, constitute a hazardous noise area. If any hazardous noise areas are found, the project owner would be required to implement measures to mitigate employee exposure to such noise levels.

In accordance with these LORS, signs will be posted in areas of the plant with noise levels exceeding 85 dBA (OSHA recognizes levels above 85 dBA as a threat to workers' hearing) and hearing protection will be required and provided. Employees will be given the opportunity to select their hearing protectors from a variety of suitable hearing protectors provided by the project owner. Other LORS requirements include, but are not limited to, mandatory training programs for all employees who would be exposed to excessive noise. The training program will be repeated annually and will be updated to keep current with changes in protective equipment and work processes. These protective measures are feasible and consistent with standard practices in the power plant industry. They have proven to be sufficiently effective in protecting workers from noise hazards. Therefore, we find that the SERC operational noise impacts will be mitigated to less than significant levels for workers and nearby sensitive noise receptors.[28]

Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[29] In a noise and vibration analysis, cumulative impacts are two or more individual impacts that, when

[27] Ex. 300, p. 4.7-13.
[28] Ex. 300, p. 4.7-13.
[29] Cal. Code Regs., tit. 14, § 15130.

considered together, are significant or that compound or increase other environmental impacts.[30]

The **Project Description Table 2** of this Decision contains the master list of cumulative projects, which includes projects for consideration in conjunction with the SERC for cumulative effects based upon proximity (approximate nine-mile radius), size and possible construction schedule. The evidence indicates that generated noise will only have a measureable cumulative impact within one mile of the project site,[31] which therefore reduced the number of projects to be considered to five as shown below in **Noise and Vibration Table 5** below.

Noise and Vibration Table 5
Proposed Projects within a One-Mile Radius of the SERC Site

Identification #	Project Title	Project Description	Location	Distance To Project (Miles)
1	PPD774	Construction of a four unit condominium project.	7921 Second St., Stanton	0.58
2	PPD783	Construction of two new commercial office buildings.	10441/10425 Magnolia, Stanton	0.74
3	PPD777	Construct a commercial development including a retail pad building, drive-through restaurant, gas station and a drive through car wash.	11382, 11430 and 11462 Beach Blvd., Stanton	0.76
4	Relocation and construction of school district central kitchen facility	Relocate District's central kitchen facility from the District Office, located at 501 North Crescent Way, Anaheim, to 2735 West Ball Road, Anaheim.	2735 West Ball Road, Anaheim.	0.79
5	Ball Road Townhomes	Subdivide and construct a 43-unit single-family attached residential project	2730 W Ball Rd., Anaheim	0.81

Source: Ex. 300, p. 4.7-14.

Local municipal codes restrict construction noise to specific hours and limit the noise these projects could generate. Condition of Certification **NOISE-4** ensures that the noise levels from all construction projects comply with applicable local noise codes and create a less than significant impact at nearby sensitive receptors.

[30] Ex. 300, p. 4.7-14.
[31] Ex. 300, p. 4.7-14.

Implementation of mitigation measures contained in **Appendix A** will result in less than significant noise impacts in the area. For these reasons, the SERC will not cause a cumulatively considerable noise impact.[32]

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

The federal, state, and local laws and policies in **Noise and Vibration Table 6** address noise that would be caused by the SERC's construction and operation. The record examines the project's compliance with these requirements.

Noise and Vibration Table 6
Laws, Ordinances, Regulations, and Standards

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
FEDERAL		
Occupational Safety & Health Act (OSHA), Title 29, Code of Federal Regulations, §1910.95; Title 8, California Code of Regulations, Sections 5095-5099	Protects workers from the effects of occupational noise exposure.	**Compliant.** Conditions of Certification **NOISE-3** (employee noise control program), **NOISE-5** (occupational noise survey), and **NOISE-7** (pile driving/vibration mitigation)
U.S. Environmental Protection Agency Guidelines	Assists state and local government entities in development of state and local LORS for noise.	**Compliant.** Existing local LORS that apply to this project, the USEPA guidelines are not applicable. There are no federal laws governing off-site (community) noise.[33]
Federal Transit Administration Guidelines	Establishes thresholds for ground-borne vibration associated with construction of rail projects; also applied to other types of projects.	**Compliant.** Implementation of Condition of Certification **NOISE-7** will require the project owner to perform pile driving in a manner to reduce vibrations and notify residents within one mile at least 10 days prior to beginning the activity.
STATE		
California Government Code, section 65302(f)	Encourages each local governmental entity to perform noise studies and implement a noise element as part of its general plan.	**Compliant.** The State of California, Office of Noise Control, prepared the Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. See local LORS

[32] Ex. 300, p. 4.7-15.
[33] Ex. 300, p. 4.7-3.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
		below. Conditions of Certification **NOISE-3** (employee noise control program), **NOISE-4** (noise restriction consistent with local LORS), and **NOISE-5** (occupational noise survey)
California Occupational Safety & Health Act (Cal-OSH Act): Title 8, California Code of Regulations, sections 5095-5099 (Article 105)	Protects workers from the effects of occupational noise exposure. The California Occupational Safety and Health Administration (Cal-OSHA) has adopted occupational noise exposure regulations that set employee noise exposure limits. These standards are equivalent to federal OSHA standards.	**Compliant.** Within the SERC site, signs will be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection will be required and provided. Conditions of Certification **NOISE-3** (employee noise control program), **NOISE-4** (noise restriction consistent with local LORS), and **NOISE-5** (occupational noise survey) ensure that plant operation and maintenance workers are adequately protected from plant noise. See also the **Worker Safety and Fire Protection** section of this Decision.[34]
California Department of Transportation (Caltrans), Transportation and Construction Vibration Guidance Manual, September 2013	Establishes guidelines for assessing the impacts of ground-borne vibration associated with pile driving.	**Compliant.** Implementation of Condition of Certification **NOISE-7** will require the project owner to perform pile driving in a manner to reduce vibrations and notify residents within one mile at least 10 days prior to beginning the activity.
LOCAL		
City of Stanton Municipal Code Section 9.28 City of Anaheim Municipal Code Section 6.70.010 City of Buena Park Municipal Code Section 8.28.010	The municipal codes limit hours of construction and includes quantitative limits on allowable noise City of Stanton: Construction noise limited to 7:00 a.m. to 8:00 p.m., Monday through Saturday.[35] During project operation, noise limits are 55 dBA Leq from 7:00 a.m.	**Compliant.** Conditions of Certification **NOISE-6** and **NOISE-7** (construction noise restrictions) and **NOISE-4** (operational noise restrictions and survey) ensure that the SERC complies with the local noise level limits. With implementation of these conditions of certification, the evidence indicates that SERC

[34] Ex. 300, p. 4.7-3.

[35] Ex. 300, p. 4.7-4.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
	to 10:00 p.m. and 50 dBA Leq from 10 p.m. to 7 a.m. City of Anaheim: Construction noise limited to 7:00 a.m. to 7:00 p.m., if the activity takes place within a 500-foot radius of a residential area. City of Buena Park: Construction noise limited to 7:00 a.m. and 8:00 p.m., Monday - Saturday.	will comply with the applicable LORS.[36]

The evidence indicates, and we find, that construction and operation of the SERC project will comply with all applicable LORS regarding noise and vibration impacts.

AGENCY AND PUBLIC COMMENT

No comments were received concerning the topic of Noise and Vibration.

FINDINGS OF FACT

Based on the evidence, we make the following findings.

1. A mobile home community is located approximately 100 feet southeast of the east parcel, and a single-family home community is located approximately 65 feet northwest of the western parcel.
2. The closest sensitive receptor is located approximately 65 feet northwest of the northwestern boundary of the Stanton Energy Reliability Center site.
3. Construction noise is a temporary event.
4. The construction phase will last approximately 14 months, including the commissioning and completion of the electric connection facilities.
5. The Stanton Energy Reliability Center battery system and synchronous condenser are not expected to operate during the nighttime.
6. The Energy Commission has historically determined that an increase in background noise levels up to and including 5 dBA is less than significant, and an increase of above 5 dBA could be either significant or less than significant depending upon the circumstances of a particular case.
7. Noise due to construction activities is usually considered to be less than significant if construction activity is temporary and activities causing high levels of noise are limited to daytime hours

[36] Ex. 300, p. 4.7-1.

8. The City of Stanton Municipal Code limits construction noise between the hours of 8:00 p.m. and 7:00 a.m. on weekdays and Saturdays, and at any time on Sundays and federal holidays.

9. The City of Anaheim Municipal Code limits construction noise between the hours of 7:00 a.m. and 7:00 p.m., if the activity takes place within a 500-foot radius of a residential area.

10. The City of Buena Park Municipal Code limits construction to between the hours of 7:00 a.m. and 8:00 p.m. on weekdays and Saturdays.

11. Noise levels from the loudest construction activities average about 89 dBA L_{eq} at 50 feet from the noise source such that construction the noise level will be about 71 dBA L_{eq} at monitoring location LT1, and 73 dBA L_{eq} at LT2.

12. The construction noise level of 71 dBA L_{eq} at monitoring location LT1, combined with the existing average daytime ambient of 68 dBA L_{eq} at this location, results in 73 dBA hourly $L_{eq,}$ which would be 5 dBA above ambient noise at LT1.

13. At LT2, the construction noise level of 73 dBA L_{eq} at monitoring location LT2, combined with the existing average daytime ambient of 59 dBA L_{eq} at this location, results in 73 dBA hourly $L_{eq,}$ which would be 14 dBA above ambient noise at LT2.

14. Conditions of Certification **NOISE-1** and **NOISE-2** establish a complaint and notification process to resolve issues arising from excessive construction noise.

15. Condition of Certification **NOISE-3** requires the project owner to implement a noise control program consistent with OSHA and Cal/OSHA requirements.

16. Condition of Certification **NOISE-4** ensures that the changes in noise levels due to project operation will neither cause the cumulative effect of operational noise to exceed the laws, ordinances, regulations, and standards, nor cause a significant impact at the nearest sensitive receptors.

17. Condition of Certification **NOISE-4** requires mitigation measures, if necessary, to ensure the project will not create tonal noises.

18. Condition of Certification **NOISE-5** ensures that plant operation and maintenance workers are adequately protected from plant noise.

19. Condition of Certification **NOISE-6** requires construction work to be performed in a manner to ensure the potential for noise complaints is reduced as much as practicable and it restricts construction to daytime hours as proscribed by the relevant city ordinance.

20. Condition of Certification **NOISE-7** requires public notification of proposed pile driving and ensures that pile driving is conducted in a manner to reduce the potential for any noise and vibration complaints.

21. Night-time operations at the Stanton Energy Reliability Center will only occur infrequently and will create a less than significant impact at the project's noise-sensitive receptors.

22. The operation of the Stanton Energy Reliability Center's pipelines and transmission lines will not cause significant noise impacts.

23. The Stanton Energy Reliability Center will not cause perceptible airborne vibration effects at the nearest sensitive receptors.

24. The Stanton Energy Reliability Center's contribution to cumulative noise impacts are not cumulatively considerable.

CONCLUSIONS OF LAW

1. The Commission concludes that implementation of the Conditions of Certification contained in **Appendix A** of this Decision will ensure that the Stanton Energy Reliability Center will comply with the applicable laws, ordinances, regulations, and standards for noise or vibration.

2. The Stanton Energy Reliability Center project will not cause significant indirect, direct, or cumulative adverse noise or 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]

The evidence describes the visual resources in the vicinity of the Stanton Energy Reliability Center (SERC) site, assesses the potential for adverse impacts, and determines whether measures are necessary to mitigate the identified adverse impacts. Conditions of certification are also proposed to mitigate potential environmental impacts and ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

Evidence on the topic of Visual Resources is contained in Exhibits 1, 2, 3, 4, 5, 6, 7, 23, 28, 30, 31, 55, 56, 59, 60, 65, 88, 92, 96, 100, and 300.[2]

SETTING

The SERC site is located within a highly urbanized portion of Orange County in the city of Stanton, which is approximately 4.5 miles southwest of Anaheim, 20 miles southeast of Los Angeles, and approximately 8 miles from the Pacific Ocean. The city of Stanton lies within the Los Angeles Basin, an urbanized area comprising flat and gently sloping terrain situated at elevations ranging from close to sea level to approximately 250 feet above sea level. Regional topography features include the Coyote Hills, with a high point located approximately 13 miles away and rising to an elevation of approximately 4,000 feet above sea level. The Santa Ana Mountains generally define the eastern edge of the Los Angeles Basin and, in clear weather, conditions can be seen in the back drop from places within the project vicinity.[3]

The SERC site is situated along Dale Avenue between West Cerritos and Katella Avenues in a mixed-use area consisting primarily of industrial and commercial development. The site lies almost immediately west of Southern California Edison's (SCE) Barre Substation and Barre Peaker Plant. A Union Pacific Railroad line is adjacent to the south, and to the north, the site is bordered by a 150-foot wide SCE high-voltage transmission right-of-way with steel lattice towers and wooden power poles. Industrial and

[1] Cal. Code Regs., tit. 14 § 15382 and Appendix G, part I.
[2] 8/2/18 RT pp. 29:20 – 30:14.
[3] Ex. 300, p. 4.13-5.

commercial development characterized by one- and two-story buildings, paved parking lots, and outdoor storage yards lies farther to both the south and north. To the site's northwest and southeast corners are residential developments. The next closest residential areas are located over 0.25 miles away.

Nighttime lighting in the area includes street-light fixtures, as well as lighting at industrial and commercial facilities, and localized lighting associated with residential development. Another source of light within the project area is from the existing Barre Substation and peaker plant, including interior and exterior lighting from buildings and equipment.[4]

With the close proximity to the Barre Substation and power plant, transmission structures including lattice steel towers, steel and wood poles, and other vertical utility structures such as traffic signals, streetlights, and telecommunications poles, are prevalent throughout the project area.[5]

PROJECT DESCRIPTION

The SERC will install two GE LM6000 PG combustion turbine generators and associated features as listed in **Visual Resources Table 1**, below. The enclosures for the gas turbine equipment and exhaust stack will be constructed using a prefabricated panel system using flat or slightly-pebbled finish metal panels. The color palette concept includes medium and light beige/tan (desert sand and almond), and medium and dark gray (slate and charcoal), with a medium blue accent color. Functioning analog clocks will be surface mounted near the top of the medium tan-colored tower, and blue colored horizontal bands will accent upper portions of safety railings enclosing an upper 42-inch-wide maintenance platform and decorative lower platform. A blue band along the top of the gas-turbine facility enclosure will match the narrower blue bands on the tower. Additional aesthetic treatment of the gas turbine enclosure includes a broad horizontal band of light beige above a dark gray (charcoal) base. Near the center, a tall rectangular area of light gray bisects the north and south walls of the enclosure.[6] The dimensions and surface appearance of the prominent SERC project structures are listed in **Visual Resources Table 1**.

[4] Ex. 300, p. 4.13-5.
[5] *Id*.
[6] Ex. 300, p. 4.13-3.

Visual Resources Table 1
Summary of Major Publicly Visible Structures [7]

Feature	Length (feet)	Width (feet)	Height (feet)	Diameter (feet)	Color	Materials	Finish
Gas turbine facility enclosure (2)	139	65	35	—	Almond Slate gray/ Charcoal gray/ Medium blue	Metal panel	Flat/lightly pebbled
Exhaust stack enclosure (2)	11.5 to 15	11.5 to 15	70	—	Desert sand Medium blue	Metal panel	Flat/lightly pebbled
Gas turbine VBV duct – primarily enclosed, with only top portion visible (2)	7	7	43	—	Gray	Metal	Flat/untextured
Power distribution module (2)	33	12	17	—	Gray	Metal	Flat/untextured
Control module (2)	25	12	17	—	Gray	Metal	Flat/untextured
Fuel gas compressor	36	17	15	—	Gray	Metal	Galvanized
Switchyard takeoff structure(2)	32	1	30	—	Gray	Metal	Flat/untextured
Demineralized water tank	—	—	30	24	Desert sand	Metal	Flat/untextured
Storm water detention tank	—	—	30	28	Desert sand	Metal	Flat/untextured
Battery energy storage (2)	62	19	12	—	Desert sand	Metal panel	Flat/untextured
Warehouse	40	40	15	—	Desert sand	Metal panel	Flat/untextured

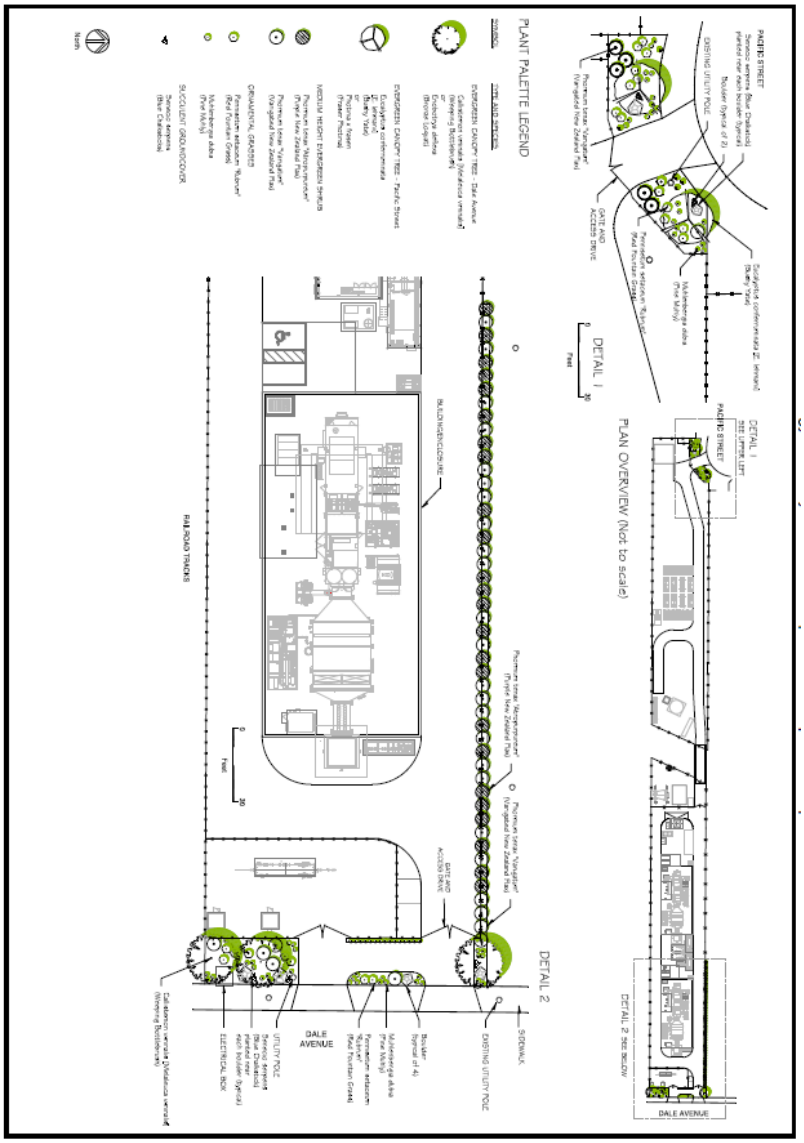
.

The site is currently dominated by non-native ornamental species characteristic of urban development. The project's Conceptual Landscape Plan incorporates a combination of

[7] Ex. 300, p. 4.13-4.

evergreen trees, medium size shrubs, and ornamental grasses. The landscaping will enhance the site's appearance and partially screen new fencing and structures (see **Visual Resources Figure 1)**. The suggested plant palette includes drought tolerant species that would be appropriate to the regional setting and local site conditions.[8]

Visual Resources Figure 1 - Conceptual Landscape Plan



Source: Ex. 300, p. 4.13-58; Conceptual Landscape Plan (Visual Resources Figure 11a).

The natural gas line for the SERC will be entirely underground. The SERC will use water supplied by Golden State Water Company via water supply pipelines located in Dale Avenue and/or Pacific Street. Once tapped into the existing water supply, the pipeline will

[8] Ex. 300, pp.4.13-3; 4.13-5.

not be visible. For general project description, including location of the facility and the equipment to be installed, please see the **PROJECT DESCRIPTION** section of this Decision.[9]

ENVIRONMENTAL ANALYSIS

The project viewshed is defined as the general area from which the SERC project would be visible. For purposes of describing a project's visual setting and assessing potential visual impacts, the viewshed can be divided into distance zones of foreground, middle-ground, and background views.

- The foreground is defined as the distance between the viewer and 0.25 to 0.5 mile from the viewer. Landscape detail is most noticeable and objects generally appear most prominent when seen in the foreground.
- The middle ground is a zone 0.5 to 3 miles from the viewer.
- The background extends beyond 3 to 5 miles from the viewer. The background of the site, from within the low-lying areas of the basin, are generally not available due to development and vegetation that may screen visibility within this area of relatively level topography.

Although consideration was given to potential effects on the more distant views, the analysis of the SERC project placed emphasis on the potential effects on foreground viewshed conditions because visibility is generally limited to only locations along nearby public streets due to the relatively flat topography and presence of intervening development and landscape vegetation. Views toward the project site from many locations within the surrounding area are generally screened.[10]

Potentially sensitive viewer groups in the viewshed include motorists and residents on Dale Road, Pacific Street, and Monroe Avenue. No notable visitor destinations or recreational sites were identified in the project viewshed. Additional representative photographed viewpoints were provided from local parks, Katella Avenue, Robert M Pyles Elementary School, and Southern Pacific Railroad (shown in **Visual Resources Figure 2**). Motorists on local urban streets, in particular Dale Avenue, a five-lane arterial, comprise the largest viewer group. Motorists may comprise various local and regional roadway travelers familiar with the visual setting, roadway travelers who use the roadway on a less regular basis, and roadway travelers who are commuters, private vehicle or public transit passengers, and commercial truck or emergency vehicle drivers. The posted

[9] Ex. 300, pp. 4.13-3 – 4.13-4.
[10] Ex. 300, p. 4.13-6.

speed limit on nearby roads is 25 miles per hour. View duration for motorists traveling along Dale Avenue and other local streets will typically be relatively brief.

Residents near the site are another important viewer group. The northwest and southeast corners of the project site lie close to residences located in a mixed-use area and views from residential areas are long in duration.

Workers at nearby commercial and industrial facilities are a third viewing group. This includes local business owners and employees.

Another group is pedestrians walking along sidewalks in the project vicinity. These include people using local businesses, offices, and a nearby church. With their slower travel speed, pedestrians' view duration is generally longer than for motorists, thus individuals in this group are likely to notice more detail with respect to visual change in the environment.[11]

Thresholds of Significance

CEQA requires analysis of the public's "enjoyment of aesthetic, natural, scenic…qualities."[12] According to the environmental checklist in the "Aesthetics" section of Appendix G of the CEQA Guidelines,[13] an impact on visual resources is considered significant if the project would:

1. Have a substantial adverse effect on a scenic vista;
2. Substantially damage scenic resources including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
3. Substantially degrade the existing visual character or quality of the site and its surroundings; or
4. Create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.[14]

Impact Assessment and Mitigation

A scenic vista is defined as a public viewpoint or view corridor widely or locally regarded as having exceptional scenic value, as reflected in recognition in public policies or documents, or by observed high levels of public use. The evidence indicates that there are no formally designated scenic vistas in the project study area; therefore, the SERC will have no impact on a scenic vista. Also, the record establishes that there are no scenic

[11] Ex. 300, p. 4.13-6.
[12] Pub. Resources Code § 21001 (b).
[13] Cal. Code Regs., tit. 14, § 15000 et seq.
[14] Ex. 300, p. 4.13-7.

resources on the SERC site that could be damaged by the SERC project. Therefore, the analysis in evidence is focused on Appendix G criteria 3 and 4.

The record describes the method of analysis of impacts to visual resources. The process to evaluate potential impacts on visual resources from construction and operation of the SERC involves four general steps. First, the visual environment is defined based on viewshed analysis and mapping. Secondly, sensitive viewpoints and key observation points (KOP) are selected. Next, an evaluation of the potential effects of the project on visual resources based on the estimated visual sensitivity of the viewing public, the probability that the project would cause a noticeable visual impact, and the estimated magnitude of the visual change due to project construction and operation. Finally, an evaluation of whether the project will comply with applicable LORS for protection of visual and aesthetic resources.

Key Observation Points (KOP)

The evidence evaluated both the existing visible physical environmental setting and the anticipated visual change introduced by the SERC project to the view from representative fixed vantage points called Key Observation Points (KOP). KOPs are selected to be representative of the most characteristic and most critical viewing groups and locations from which the SERC project will be seen.[15]

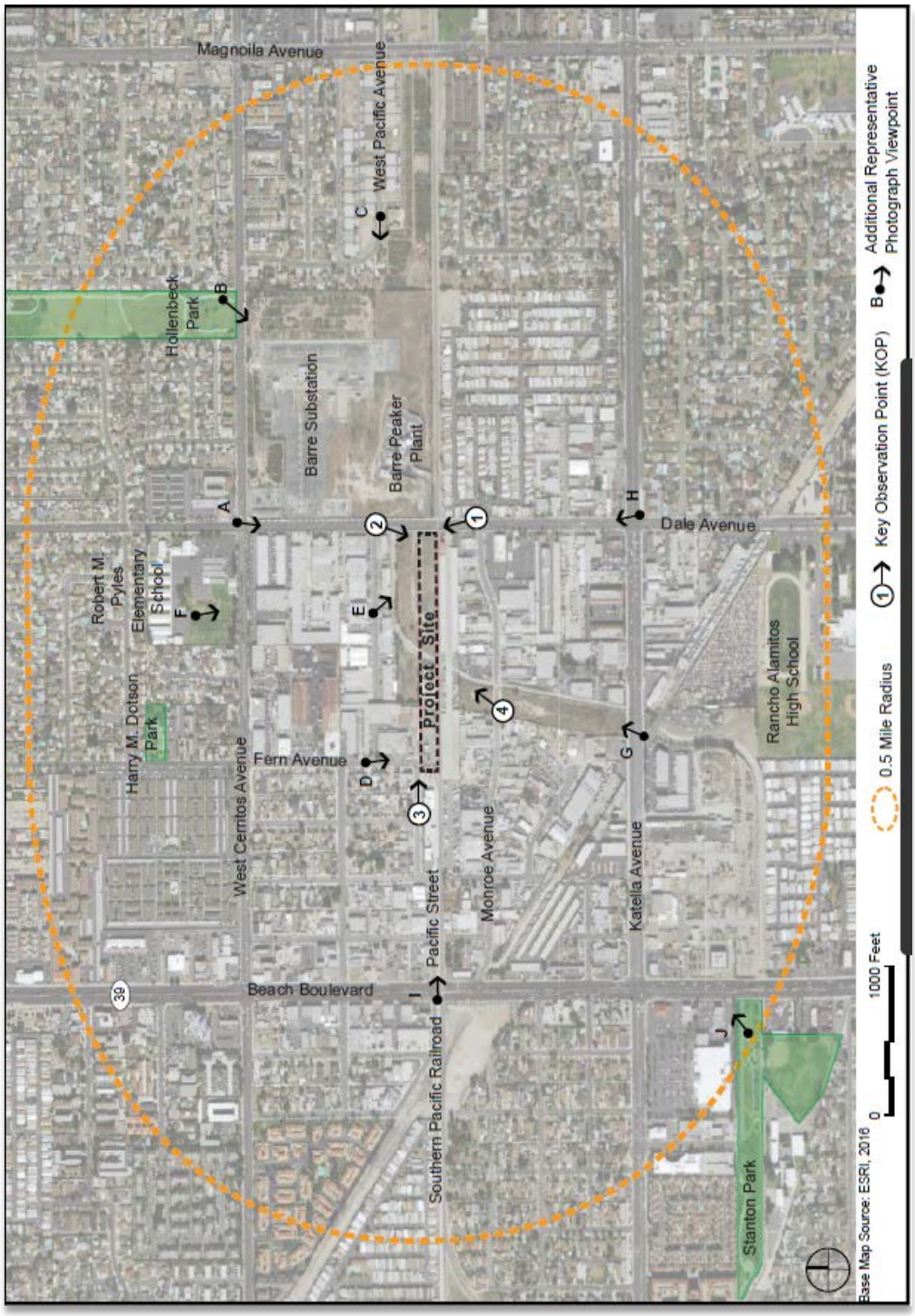
Visual Resources Figure 2 maps the locations of the four KOPs used in this visual resources analysis:

- **KOP 1** – View from Dale Avenue at Monroe Avenue.
- **KOP 2** – View from Dale Avenue at Standustrial Street.
- **KOP 3** – View from Pacific Street at Sycamore Avenue. Addresses effects of the power plant to viewers in the residential community to the east of the project.

  KOP 4 – View from Monroe Avenue.

[15] Ex. 300, p. 4.13-8.

Visual Resources Figure 2 – KOP Map[16]



[16] Ex. 300 p. 4.13-50.

Impact Assessment and Mitigation

KOP 1– View from Dale Avenue at Monroe Avenue Looking Northwest

Visual Resources Figures 3 and **4** show existing and simulated views of the SERC power plant site from Dale Avenue at Monroe Avenue looking northwest at a distance of approximately 260 feet from the project site. This viewpoint represents the views experienced by northbound Dale Avenue motorists, as well as by pedestrians walking north along the west side of Dale Avenue. Additionally, this is a view similar to one experienced by a limited number of residents at the northwestern edge of Katella Estates; however, the project site is somewhat less visible to residential viewers due to the setback from Dale Avenue.[17]

Visual Resources Figure 3 – Existing View from KOP 1

(Source: Ex. 300, p. 4.13-51; Visual Resource Figure 7a.)

[17] Ex. 300, pp. 4.13-9 – 4.13-10.

The evidence indicates that visual quality is considered low at KOP 1 due to numerous utility structures situated in an irregular arrangement, the presence of industrial and commercial structures, and lack of unifying landscape or visual elements along the streetscape. Further, the evidence assumes there is a low level of viewer concern for motorists on Dale Avenue. This section of Dale Avenue is not an eligible state scenic highway or a designated entry gateway to the city. A low to moderate viewer concern is assumed for pedestrians passing the site. A high level of concern is assumed for a limited number of residents at the northwestern edge of Katella Estates. Overall, viewer concern is considered moderate.

Motorists on Dale Avenue comprise the largest viewer group. View duration of the site for motorists traveling along Dale Avenue is typically brief (a few seconds), therefore exposure is low. Pedestrians in this industrial area are likely to be employees of neighboring businesses passing by for breaks in work. The exposure of the project site from the perspective of pedestrians walking along the east side of Dale Avenue (across the street from the project) is low to moderate. A high level of exposure is assumed for a very limited number of residents at the northwestern edge of Katella Estates. The overall viewer exposure for KOP 1 is considered low to moderate. Taken together, the overall visual sensitivity for KOP 1 is low to moderate.[18]

[18] Ex. 300 p. 4.13-10.

Visual Resources Figure 4 – Simulated View from KOP 1

(Source: Ex. 300, p. 4.13-52; Visual Resource Figure 7b.)

Visual Change

Visual Resources Figure 4 presents a visual simulation of the SERC as viewed from KOP 1. Beyond the two-story commercial building, the new clock tower over the stack enclosure provides a distinctive focal point along the west side of Dale Avenue. Along the sidewalk, the new perimeter fence will be partially screened by landscaping, which will provide attractive visual interest and definition along the Dale Avenue street frontage. Although the enclosure structure will be slightly taller than adjacent buildings, the building will have distinctive aesthetic treatment and its character would not be out-of-context with the style of nearby commercial structures. The new structures would create low visual contrast.[19]

The overall size of the SERC is taller than the surrounding structures. Elements such as commercial signage, a railroad crossing signal, and utility poles seen in the foreground appear to dominate the view in size and irregularity. The SERC will be relatively

[19] Ex. 300, p. 4.13-11.

inconspicuous compared to the existing features in the viewshed and the project dominance will be low. The SERC project will not block any high quality views in the surrounding area such that the change due to view blockage will be considered low. Thus, the overall visual change from KOP 1 will be low.[20]

Therefore, we find, in the context of the SERC's low to moderate visual sensitivity, the low level of the project's visual change is less than significant.

KOP 2– View from Dale Avenue at Standustrial Street Looking Southwest

Visual Resources Figures 5 and **6**, respectively, show an existing view and a visual simulation of the SERC during its operational phase from Dale Avenue looking southwest toward the project site. Similar to KOP 1, this view reflects existing visual character along Dale Avenue in the immediate vicinity of the SERC site, and represents close range views of the project as experienced by southbound motorists, as well as pedestrians along the sidewalk, while walking adjacent to Barre Substation. Because intervening structures and vegetation generally screen views toward the project from locations to the north including farther away along Dale Avenue, KOP 2 is a location where the SERC would be most visible.

[20] Ex. 300, p. 4.13-11.

Visual Resources Figure 5

Source: (Ex. 300, p. 4.13-53; Visual Resources Figure 8a).

Visual Resources Figure 5 shows a somewhat open view of the site from near Standustrial Street looking southwest across a transmission line corridor that lies adjacent to the site. Also seen in the foreground right is Stanton Storm Channel, which curves and bisects the site. From this viewpoint, the site's eastern parcel and Dale Avenue frontage are visible; however, the western half of the project site is obstructed by the single-story commercial building at the right edge of the view. Beyond the fenced site, which is covered in low growing vegetation, scattered mature trees are visible interspersed with one- and two-story industrial and commercial buildings. Several steel lattice towers also appear in the background. Visual character seen at KOP 2 is similar to KOP 1. Due to numerous utility structures situated in an irregular arrangement, the presence of industrial and commercial structures and lack of unifying landscape or visual elements along the streetscape, visual quality is considered low at KOP 2.[21]

Motorists on Dale Avenue comprise the largest viewer group and a low level of viewer concern is assumed for these motorists. This section of Dale Avenue is not an eligible

[21] Ex. 300, p. 4.13-11.

state scenic highway or a designated entry gateway to the city, and view duration for motorists traveling along Dale Avenue is typically brief (a few seconds); therefore, exposure is low. Pedestrians in this industrial area are likely to be employees of neighboring businesses passing by for breaks in work. The exposure of the project site from the perspective of pedestrians walking along the west side of Dale Avenue is low to moderate. The overall viewer exposure for KOP 2 is low. We find that overall visual sensitivity for KOP 2 is low.[22]

Visual Resources Figure 6

Source: (Ex. 300, p.4.13-54; Visual Resources Figure 8b).

Visual Change

The new clock tower/stack enclosure will provide a distinctive focal point along the west side of Dale Avenue. Along the sidewalk, the new perimeter fence will be partially screened by landscaping, which will provide attractive visual interest and definition along the Dale Avenue street frontage. Although the enclosure structure will be slightly taller

[22] Ex. 300, p. 4.13-12.

than adjacent buildings, the building will have distinctive aesthetic treatment and its character will fit in with the style of nearby commercial structures. The new structures will create low visual contrast.

The overall size of the SERC project will be taller than the surrounding structures. Elements such as commercial signage, a railroad crossing signal, and utility poles seen in the foreground appear to dominate the view in size and irregularity. The project dominance will be low to moderate.

The SERC project will not block any high quality views in the surrounding area. The alteration in view would result in view blockage considered to be low. The overall visual change from KOP 2 will be low to moderate. [23]

Therefore, we find that in the context of the setting's low visual sensitivity, the low-to-moderate level of project visual change is less than significant.

KOP 3– View from Pacific Street at Sycamore Avenue Looking East

Visual Resources Figures 7 and **8**, respectively, show the existing view and visual simulation of the SERC during its operational phase as seen from Pacific Street at Sycamore Avenue looking east. Located approximately 260 feet from the northwestern edge of the SERC site, KOP 3 is representative of close-range views experienced from a nearby street in a mixed-use neighborhood that includes residences near the edge of industrial and commercial development.[24]

[23] Ex. 300, p. 4.13-12.

[24] Ex. 300, pp. 4.13-12 – 4.13-13.

Visual Resources Figure 7

Source: (Ex. 300, p. 4.13-55; Visual Resources Figure 9a).

Visual Resources Figure 7 shows the street view as seen from Pacific Street looking east towards the SERC site. This scene is dominated by large transmission structures and lines running parallel and perpendicular to a viewer's perspective. A worn metal building sits at the end of the road where Pacific Street becomes Fern Avenue. Due to numerous utility structures situated in an irregular arrangement, the presence of industrial and commercial structures, and lack of unifying landscape or visual elements along the streetscape, visual quality is considered low at KOP 3.

Current views of the skyline from KOP 3 are dominated by the existing transmission structures. There are no wide scenic views visible from this location. A low level of viewer concern is assumed for motorists on Pacific Street. A low to moderate viewer concern is assumed for pedestrians on this street. A moderate level of concern is assumed for residents on Pacific Street. Overall, viewer concern is considered low to moderate.[25]

[25] Ex. 300, p. 4.13-13.

A small number of motorists are expected to travel on Pacific Street (a small local street). As drivers head east on Pacific Street, the view of the project site is slightly visible, then drops below the industrial and commercial buildings in the foreground until barely visible. The duration is brief, and therefore motorist exposure is low to moderate. KOP 3 also represents the view of residents on Pacific Street. The exposure of residents in the view shed of the project is assumed to be high. The overall viewer exposure is moderate. We find the overall visual sensitivity at KOP 3 is low to moderate.

Visual Change

Visual Resources Figure 8 shows that part of the new project will be somewhat noticeable from this residential street location, and it will be similar in character or scale to existing industrial structures and other development seen in the area. Although the stack enclosures are taller than many adjacent structures, they will be set back from this residential street and will be shorter than the taller existing transmission structures. The SERC landscaping will complement the appearance of the new perimeter fence that will replace the existing old chain-link fence. The visual contrast of KOP 3 will be low.[26]

[26] Ex. 300, p. 4.13-13.

Visual Resources Figure 8

Source: (Ex. 300, 4.13-56; Visual Resources Figure 9b).

The overall size of the SERC project will be taller than the surrounding buildings. The transmission structures seen in the foreground will continue to dominate the view in size and irregularity. The SERC project will be relatively inconspicuous compared to the existing features in the viewshed; therefore, the project dominance will be low.

The SERC project will not block any high quality views in the surrounding area. The alteration in view will result in view blockage that would be considered low. The overall visual change from KOP 3 would be low.[27] Therefore, we find that in the context of the setting's low-to-moderate visual sensitivity, the low level of project visual change is less than significant.

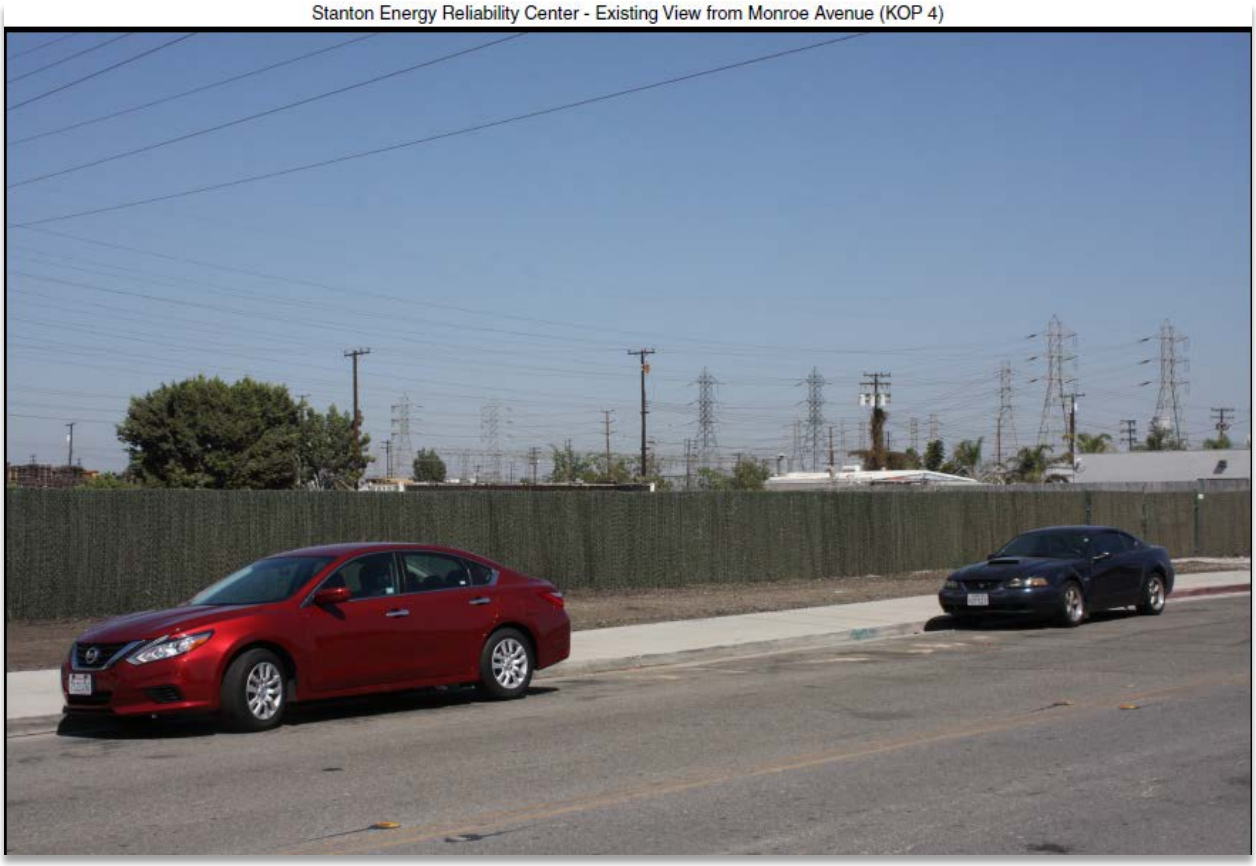
KOP 4– View from Monroe Avenue Looking North

Visual Resources Figures 9 and **10,** respectively, are an existing view looking northeast toward the SERC site from Monroe Avenue (a small local street), and a visual simulation

[27] Ex. 300, pp. 4.13-13 – 4.13-14.

of the project during the operational period. This KOP shows a relatively open view toward the site from the closest public street on the south side of the project site, and is taken from near an existing transmission and drainage channel corridor.[28]

Visual Resources Figure 9



Source: (Ex. 300 p. 4.13-57; Visual Resources Figure 10a).

Visual Resources Figure 9 shows the street view as seen from Monroe Avenue looking north towards the SERC site. The KOP 4 view shows that an opaque fence in the immediate foreground partially screens single-story buildings. A line of wooden utility poles located north of the roadway and intervening trees provide some additional screening. On the left, wooden pallets stacked on the eastern edge of the western half of the project site are visible beyond a tree canopy seen in the foreground. Beyond the project site, vertical utility structures, including components of the Barre Substation, are noticeable against the sky and, on the right, the Barre Peaker Plant's exhaust stack can also be seen. Due to numerous utility structures situated in an irregular arrangement, the

[28] Ex. 300, p. 4.13-14.

presence of industrial and commercial structures, and lack of unifying landscape or visual elements along the streetscape, visual quality is considered low at KOP 4.[29]

Current views of the skyline from KOP 4 are dominated by the existing transmission and utility structures, and there are no wide scenic views visible from this location. A low level of viewer concern is assumed for motorists on Monroe Avenue. A low-to-moderate viewer concern is assumed for pedestrians, likely employees of nearby commercial businesses. Overall, viewer concern is low.

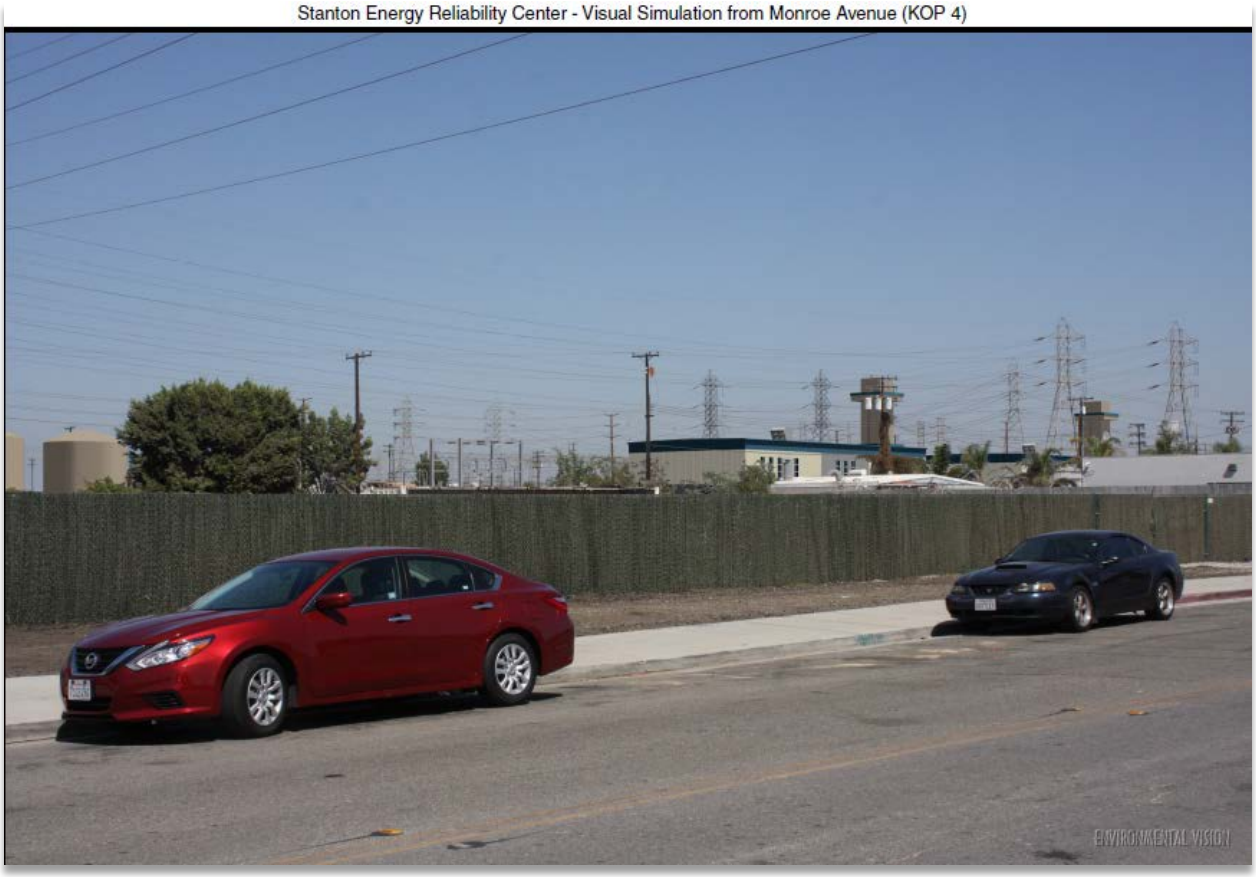
A small number of motorists are expected to travel on Monroe Avenue. Looking north along the drainage channel, the site is partially visible. However, given that views toward the project site are at an angle perpendicular to the road, the views of motorists from Monroe Avenue are limited and brief in exposure. The view by pedestrians on Monroe Avenue is assumed to be low to moderate. The overall viewer exposure is moderate. Therefore, we find the overall visual sensitivity at KOP 4 is low to moderate.[30]

Visual Change

Visual Resources Figure 10 shows that part of the SERC project will be somewhat noticeable from KOP 4, and the new facility would be similar in character or scale to existing industrial structures and other development seen in the area. Although the SERC's exhaust stack enclosures will be taller than many adjacent buildings, they will be set back from the street and would not appear irregular among the taller existing transmission structures. The SERC colors will match the surrounding structures in the area. Therefore, the visual contrast at KOP 4 will be low.[31]

[29] Ex. 300, p. 4.13-14.
[30] Ex. 300, p. 4.13-14.
[31] Ex. 300, p. 4.13-15.

Visual Resources Figure 10



Source: (Ex. 300, p. 4.13-58; Visual Resources Figure 10b).

The overall size of the SERC project will be taller than the surrounding buildings. The transmission structures and lines seen in the foreground and background appear to dominate the view in size and irregularity. The SERC project will be relatively inconspicuous compared to the existing features in the view shed; therefore, the project dominance will be low. The SERC project will not block any high-quality views in the surrounding area. The alteration in view would result in view blockage that would be considered low. The overall visual change from KOP 4 would be low. In the context of the setting's low-to-moderate visual sensitivity, we find the low level of project visual change is less than significant.[32]

As proposed, the SERC project will not generate a significant visual impact. To ensure that the impacts remain less than significant throughout the life of the project, we impose

[32] Ex. 300, p. 4.13-15.

Condition of Certification **VIS-1,** which requires a specific surface treatment plan approved by the compliance project manager. [33]

Project Construction Visual Impacts

Temporary construction facilities include a laydown area on the western portion of the SERC site. During the 14-month construction period, construction materials, large equipment, trucks, temporary lighting, and parked vehicles could be visible in this area. Public views toward the construction laydown area will be screened by perimeter fencing. In addition, the laydown portion of the site is set back approximately 750-feet from the site's major street frontage along Dale Avenue.[34]

Linear Facilities

The SERC's transmission generator tie-line will be installed completely underground from the last structure on the SERC site all the way to the Barre Substation located across Dale Avenue. At a point within the Barre Substation, the generator tie-line would come aboveground to connect to the Barre C 66 kV Switchrack.[35] The generator tie-line would have less than significant visual impacts.

Natural gas would be delivered to the project via a 2.75-mile-long underground pipeline extending north along Dale Avenue to La Palma Avenue. At the project site, the natural gas would flow through either a 12-inch- or 16-inch pipeline, turbine-meter set, gas scrubber/filtering equipment, a gas pressure-control station, electric-driven booster compressors, and coalescing and final fuel filters prior to entering the combustion turbines. Following construction, the pipeline would not be visually evident and would have less than significant visual effects.

The SERC will use water supplied by Golden State Water Company via underground water supply pipelines located in Dale Avenue and/or Pacific Street. This source will also provide water for fire protection and service water, potable outlets, restroom, and safety showers. Once tapped into the existing water supply, the pipeline will not be visually evident and will have less than significant visual effects.[36]

Wastewater from the SERC will be carried by underground pipe to the sanitary sewer line located in Pacific Street to the west of the SERC. The pipeline will not be visually evident and will have less than significant visual effects.

[33] Ex. 300, p. 4.13-15.
[34] Ex. 300, p. 4.13-16.
[35] Ex. 69, p. 186.
[36] Ex. 300, p. 4.13-16.

Visible Water Vapor Plumes

The SERC's simple-cycle gas turbines will not emit visible water vapor plumes from the exhaust stacks. Visible plumes, if any, could occur from the wet surface air cooler (WSAC). The evidence indicates that under the SERC's proposed operating loads and ambient air conditions, any visible plumes from the WSAC will be very infrequent, very small, and will not have the potential to reach the minimum thresholds for potential visual plume significance. Formation of visible plumes will be an unlikely occurrence related to an unusual combination of near freezing temperatures and damp conditions. Additionally, as a reliability facility with an operating profile expected to be similar to a peaker, the facility is most likely to operate at times (e.g., late afternoon or hot days) when plumes are least likely to form. The evidence establishes that there will be little or no plume formation under anticipated operating and ambient conditions, and therefore visual water vapor plumes will have less than significant visual effects.[37]

Light or Glare

During operations, the SERC has the potential to introduce light offsite to surrounding properties, as well as illuminate the night time sky. If bright exterior lights are not properly hooded or directed, on-site lighting could introduce a significant light or glare distraction to the project vicinity. Construction lighting will be needed because some construction activities may take place 24-hours a day, seven days a week. For temporary and permanent project lighting, Conditions of Certification **VIS-3** and **VIS-4** will require that: a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting is not to be directed upward, 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. Where lighting is not required for normal operation, safety, or security, switches or motion detectors will be installed to allow these areas to remain dark except as needed. To the extent possible, night construction lighting will be directed toward the center of the site. Task-specific lighting will be used to the extent practical. Therefore, we find that with implementation of Conditions of Certification **VIS-3** and **VIS-4**, the SERC will comply with the lighting requirements of Chapter 20 of the Stanton Municipal Code.[38]

[37] Ex. 300, p. 4.13-16.
[38] Ex. 300, p. 4.13-17.

Reflective glare could occur if shiny or highly reflective facility components are visible to the public. Under Condition of Certification **VIS-1**, all major project features will be painted or treated in non-reflective colors and finishes, transmission line conductors will be non-specular and non-reflective, and transmission line insulators will be non-reflective and non-refractive. No reflective glare would be anticipated with the implementation of this condition.

With implementation of Conditions of Certification **VIS-1**, **VIS-3**, and **VIS-4**, construction and operation of the SERC will not cause substantial light or glare that would adversely affect day or nighttime views in the area. Project light and glare impacts in the context of the existing setting will be less than significant.[39]

Cumulative Impacts

A project may result in a significant adverse cumulative impact when its effects are cumulatively considerable. Cumulatively considerable means that the incremental effects of an individual project are significant when viewed in connection with the effects of (1) past projects, (2) other current projects, and (3) probable future projects.[40] Any one project by itself may not cause a significant visual impact, but the combination of the new project with all existing or planned projects in the area may have a significant cumulative impact; in other words, the impact of the new project is cumulatively considerable.

A finding of a significant cumulative impact would depend on the degree to which (1) the viewshed is altered, (2) view of a scenic resource is impaired, or (3) visual quality is diminished. The geographic scope of the area that could be subject to a cumulative visual effect is limited to the area very near the proposed SERC.[41]

Three cumulative projects were identified within the SERC's visual sphere of influence. These three cumulative projects are the three closest projects to the SERC site, and appear as the first three listed projects in the Master Cumulative Project List in the **PROJECT DESCRIPTION** section of this Decision. These projects include:

1. Project PPD 780 – Construction of a 2,418 square foot fast-food restaurant with a drive-through lane at 7952 Cerritos Avenue and 10511-10529 Beach Boulevard, approximately 0.39-mile from the SERC site;
2. Project PPD 774 – Construction of a four-unit condominium project at 7921 Second Street, approximately 0.58-mile from the SERC site; and

[39] Ex. 300, p. 4.13-17.

[40] (Cal. Code Regs., tit. 14, § 15130).

[41] Ex. 300, p. 4.13-17.

3. Project PPD 783 – Proposal to construct two new commercial office buildings at 10441 and 10425 Magnolia Avenue, approximately 0.74-miles from the SERC site.

All three of these cumulatively considered projects are within 0.75 miles of the SERC project site. The proposed cumulative projects would introduce additional structures to the project's visual sphere of influence. Because the existing visual setting of these three proposals is a mix of commercial and residential uses, visual sensitivity is low to moderate. Under a cumulative scenario of these projects and SERC, cumulative visual change would be low. Impacts would be perceived, but would remain less than significant. The cumulative effect would likely not be perceived beyond the immediate area because the topography of the area does not allow for distant views. Few vantage points exist at ground level where the SERC site and the cumulative project sites would both be visible. These views would remain dominated by the tall transmission structures surrounding the Barre Substation.[42]

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

Visual Resources Table 2 summarizes LORS pertaining to protection of visual and aesthetic resources.

Visual Resources Table 2
Laws, Ordinances, Regulations, and Standards [43]

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
CITY OF STANTON GENERAL PLAN		
Goal RC-3.1.2 (c)	Clean and safe air quality. Protect sensitive receptors by creating an urban tree-planting program to plant trees that remove pollutants from the air or provide shade that decreases the negative impacts of heat on the air.	**Compliant.** The SERC project includes landscaping with evergreen canopy trees. Condition of Certification **VIS-2** ensures that the SERC will stay consistent with this goal throughout the life of the project.

[42] Ex. 300, p. 4.13-18.

[43] Ex. 300, pp. 4.13-19 – 4.13-25.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Goal CD-3.1 Strategy CD-3.1.1 Action CD-3.1.1 (a) Action CD-3.1.1 (b)	Provide both residents and visitors with a ″sense of arrival″ upon their entrance into Stanton. Develop and maintain gateways at major entries into the city Develop a comprehensive gateway design and improvement program for both primary and secondary city gateways Create unifying landscape and architectural themes at primary and secondary gateways.	**Compliant.** The nearest city gateway is located at Dale and Katella avenues, 1,300 feet south of the SERC site. The SERC is not visible from this location. City of Stanton staff determined that the architectural themes of the project will be consistent with the area around the project site, and therefore will not adversely affect views from this designated gateway
Strategy CD-3.1.1	Develop and maintain gateways at major entries into the city	**Compliant.** The nearest city gateway is located at Dale and Katella avenues, 1,300 feet south of the project. The SERC project is not visible from this location. City of Stanton staff determined that the architectural themes of the project will be consistent with the area around the project site, and therefore will not adversely affect views from this designated gateway.
Street Tree Master Plan	Tree-planting program to encourage street trees within the city.	**Compliant.** Visual Resources Figure 1 shows that the project includes landscaping with evergreen canopy trees. Condition of Certification **VIS-2** ensures that the SERC will remain consistent with this goal throughout the life of the project. The city of Stanton staff agreed to allow the project owner to fund additional landscaping in the public right-of-way.[44]
CITY OF STANTON MUNICIPAL CODE		
Chapter 12.20 Street Tree Plan	Describes requirements for planting, removing, or replacing trees within the public right-of-way.	**Compliant.** The city of Stanton staff agreed to allow the project owner to fund additional landscaping (trees) in the public right-of-way. The plantings will be consistent with the requirements of the chapter. The SERC project will not remove or replace trees

[44] Ex. 300, PDF page.

APPLICABLE LORS	DESCRIPTION OF LORS	DISCUSSION/CONCLUSIONS
Chapter 20.315.040 Landscaping Standards	Discusses standards for landscaping for projects in nonresidential zones including area requirements and planting type and size.	**Compliant.** Visual Resources Figure 1 shows the project's conceptual landscaping plan. This plan will meet the requirements of this ordinance and is consistent with the State Model Water-Efficient Landscape Ordinance (MWELO). Condition of Certification **VIS-2** ensures the SERC will stay consistent with this goal throughout the life of the project.
Chapter 20.315.050 Irrigation Plans and Water Conservation Standards	Establishes water-efficient landscape standards that are at least as effective as the State Model Water-Efficient Landscape Ordinance as required by the Water Conservation in Landscaping Act (Government Code Sections 65591 et seq.)	**Compliant.** Visual Resources Figure 1 shows the project conceptual landscaping plan. This plan will meet the requirements of this ordinance and will be consistent with the MWELO. Condition of Certification **VIS-2** ensures the SERC will stay consistent with this goal throughout the life of the project.
Chapter 20.300.080 Outdoor Lighting and Glare	Establishes outdoor lighting standards in order to reduce the impacts of glare, light trespass, over lighting, sky glow, and poorly shielded or inappropriately directed lighting fixtures, and promote safety and encourage energy conservation.	Conditions of Certification **VIS-3** and **VIS-4** ensure that the SERC will meet the requirements of this section and continue to be consistent with this ordinance throughout the life of the project.

AGENCY AND PUBLIC COMMENTS

No agency or public comments were received on the topic of Visual Resources.

FINDINGS OF FACT

Based on the evidence, we find as follows:

1. The Stanton Energy Reliability Center site is located within a highly urbanized portion of Orange County in the city of Stanton.
2. There are no scenic vistas within the visual sphere of influence of Stanton Energy Reliability Center.
3. The Stanton Energy Reliability Center will have no impact on a scenic vista.
4. There are no scenic resources on the site that could be impacted by the Stanton Energy Reliability Center project.

5. The Stanton Energy Reliability Center will not damage any scenic resources within the city of Stanton or surrounding region.

6. The evidence contains an evaluation of four Key Observation Points and the Stanton Energy Reliability Center's potential to create light or glare impacts.

7. Impacts to visual resources caused by the Stanton Energy Reliability Center will be less than significant at all four Key Observation Points.

8. The overall visual change for views at or near at all four Key Observation Points will be less than significant.

9. There will be no significant impacts on visual resources during construction.

10. With implementation of Conditions of Certification **VIS-1** and **VIS-2**, the Stanton Energy Reliability Center will not substantially degrade the existing visual character or quality of the site and its surroundings for the life of the project.

11. With implementation of Conditions of Certification **VIS-3** and **VIS-4**, the Stanton Energy Reliability Center will not create a new source of substantial light or glare that would adversely affect daytime or nighttime views in the area.

12. The Stanton Energy Reliability Center will have little or no plume formation under anticipated operating and ambient conditions.

13. The Stanton Energy Reliability Center will have less than significant visual impacts due to visual water vapor plumes.

14. The Stanton Energy Reliability Center, in combination with any current or probable future project, will not contribute considerably to a cumulatively significant effect for visual resources.

CONCLUSIONS OF LAW

1. With the implementation of the conditions of certification contained in **Appendix A**, the Stanton Energy Reliability Center will not create significant direct, indirect, or cumulative environmental impacts on visual resources.

2. With the implementation of the conditions of certification contained in **Appendix A**, the Stanton Energy Reliability Center will comply with all applicable visual resource laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

APPENDIX A

Conditions of Certification Compendium
Stanton Energy Reliability Center

AIR QUALITY

AQ-SC1 Air Quality Construction/Demolition Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with **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, 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 AQ-SC3, AQ-SC4, and AQ-SC5.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM and the South Coast Air Quality Management District (District). 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.

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. All unpaved roads and 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.

B. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site.

C. Visible speed limit signs shall be posted at the construction site entrances.

D. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

E. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

F. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

G. 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.

H. 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 (SWPPP) to prevent run-off to roadways.

I. All paved roads within the construction site shall be swept at a frequency determined by the AQCMM on days when construction activity results in tracking to prevent the accumulation of dirt and debris to minimize dust plumes.

J. At least the first 500 feet of any paved public roadway exiting the construction site, laydown areas, or construction staging areas, shall be swept at a frequency determined by the AQCMM on days when construction activity results in tracking to prevent the accumulation of dirt and debris to minimize dust plumes or on any other day when dirt or runoff resulting from the construction site activities is visible on the public roadways.

K. All soil storage piles and disturbed areas that remain inactive for longer than ten days shall be covered, or shall be treated with appropriate dust suppressant compounds.

L. 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 provide at least two feet of freeboard, so that no visible emissions occur.

M. 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.

N. Disturbed areas shall be re-vegetated as soon as practical.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report (MCR) that includes:

1. A summary of all actions taken to maintain compliance with this condition (including sweeping log entries);

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 or delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed and shall include a section in the AQCMP detailing

how the additional mitigation measures will be accomplished within the time limits specified:

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 to the CPM in the MCR that includes:

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 AQCMM that the use of such devices is not practical for specific engine types. For purposes of this condition, the use of such devices is "not practical" for the following, as well as other, reasons.

   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 10 working days or less.

   The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not practical.

C. The use of a retrofit control device may be terminated immediately 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, provided that: 1) the CPM is informed within 10 working days of the termination, 2) a replacement for the equipment item in question meeting the controls required in item "B" occurs within 10 days of termination of the use, and 3) 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.

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 manufacturers' 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 shall 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 provide the CPM copies of any District-issued project air permit 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 project air permit 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-SC7 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.

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.

DISTRICT'S PERMITTED EQUIPMENT AND CONDITIONS

Equipment

ID No.	Equipment Descriptions
PROCESS 1: INTERNAL COMBUSTION – POWER GENERATION	
D1	GAS TURBINE, NO. 1, SIMPLE-CYCLE, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000 PC SPRINT, 484.2 MMBTU/HR (HHV) AT 40 DEG F, WITH WATER INJECTION WITH
B2	GENERATOR, 51.049 MW GROSS AT 40 DEG F
B16	BATTERY ENERGY STORAGE SYSTEM, 10 MW
C3	CO OXIDATION CATALYST, NO. 1, BASF, MODEL CAMET, 68.2 CU. FT.; WIDTH: 23 FT 4.8 IN; HEIGHT: 25 FT; LENGTH: 2.1 IN
C4	SELECTIVE CATALYTIC REDUCTION, NO. 1, CORMETECH, MODEL CUSTOM, TITANIA-BASED CERAMIC, 1385 CU. FT.; WIDTH: 23 FT 4.8 IN; HEIGHT: 25 FT; LENGTH: 2 FT 8 IN WITH
B5	AMMONIA INJECTION, AQUEOUS AMMONIA
S6	STACK, TURBINE NO. 1, HEIGHT: 71 FT; DIAMETER: 12 FT
D7	GAS TURBINE, NO. 2, SIMPLE-CYCLE, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000 PC SPRINT, 484.2 MMBTU/HR (HHV) AT 40 DEG F, WITH WATER INJECTION WITH
B8	GENERATOR, 51.049 MW GROSS AT 40 DEG F
B17	BATTERY ENERGY STORAGE SYSTEM, 10 MW
C9	CO OXIDATION CATALYST, NO. 2, BASF, MODEL CAMET, 68.2 CU. FT.; WIDTH: 23 FT 4.8 IN; HEIGHT: 25 FT; LENGTH: 2.1 IN
C10	SELECTIVE CATALYTIC REDUCTION, NO. 2, CORMETECH, MODEL CUSTOM, TITANIA-BASED CERAMIC, 1385 CU. FT.; WIDTH: 23 FT 4.8 IN; HEIGHT: 25 FT; LENGTH: 2 FT 8 IN WITH
B11	AMMONIA INJECTION, AQUEOUS AMMONIA
S12	STACK, TURBINE NO. 2, HEIGHT: 71 FT; DIAMETER: 12 FT

D13	STORAGE TANK, AQUEOUS AMMONIA 19 PERCENT, 5000 GALS; DIAMETER: 10 FT; HEIGHT: 8 FT 6 IN.
E14	RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATING
E15	RULE 219 EXEMPT EQUIPMENT, AIR CONDITIONING UNITS

The following conditions were developed by the SCAQMD and are obtained from the FDOC.

Facility Conditions

AQ-F1 Except for open abrasive blasting operations, the project owner shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No. 1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

Verification: The project owner shall make the site available for inspection by representatives of the District, California Air Resources Board (ARB), the United States Environmental Protection Agency (U.S. EPA) and the California Energy Commission (Energy Commission).

Device Conditions

AQ-A1 The project owner shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
NOx	Less than or equal to 3601 LBS IN ANY CALENDAR MONTH
CO	Less than or equal to 3690 LBS IN ANY CALENDAR MONTH
VOC	Less than or equal to 1156 LBS IN ANY CALENDAR MONTH
PM10	Less than or equal to 2237 LBS IN ANY CALENDAR MONTH
PM2.5	Less than or equal to 2237 LBS IN ANY CALENDAR MONTH
SOx	Less than or equal to 758 LBS IN ANY CALENDAR MONTH

For the purposes of this condition, the above monthly emission limits shall be based on the emissions from a single turbine.

The turbine shall not commence with normal operation until the commissioning process has been completed. Normal operation commences when the turbine is able to supply electrical energy to the power grid as required under contract with the relevant entities. The SCAQMD shall be notified in writing once the commissioning process for each turbine is completed.

Normal operation may commence in the same calendar month as the completion of the commissioning process provided the turbine is in compliance with the above emission limits.

For a month during which both commissioning and normal operation take place, the monthly emissions shall be the sum of the commissioning emissions and the normal operation emissions.

For the commissioning period, CO, VOC, PM10/PM2.5, and SOx emissions shall be calculated using the following emission factors:

Pre-Catalyst Phase: CO, 155.08 lb/mmcf; VOC, 24.60 lb/mmcf; PM10/PM2.5, 32.09 lb/mmcf; and SOx, 2.14 lb/mmcf. The pre-catalyst phase starts with step 1 of the commissioning activities (first fire and full speed, no load, not synchronized, no generator excitation) and ends with step 3 (first synchronization). The steps referenced herein are described in the commissioning emissions (per turbine) table provided by Stanton Energy Reliability Center.

Post-Catalyst Phase: CO, 6.70 lb/mmcf; VOC, 3.42 lb/mmcf; PM10/PM2.5, 8.29 lb/mmcf; and SOx, 2.14 lb/mmcf. The post-catalyst phase starts with step 4 of the commissioning activities (synchronization and ramp to full load, tuning water, ammonia (rough), and AVR (as needed), gas compressor turning) and ends with step 6 (full load operation with water injection and SPRINT in service and SCR/ammonia tuning).

For the commissioning period (pre-catalyst and post-catalyst phases), NOx emissions shall be measured with an SCAQMD Method 100.1 source test van CEMS.

For normal operation, VOC, PM10/PM2.5, and SOx emissions shall be calculated using the following emission factors: VOC, 3.26 lb/mmcf; PM10/PM2.5, 6.32 lb/mmcf; and SOx, 2.14 lb/mmcf (based on 0.75 grains S/100 scf).

For normal operation, the NOx and CO emission shall be measured with certified NOx CEMS and CO CEMS, respectively. For the interim period after commissioning but prior to CEMS certification, and in the event of CEMS failure subsequent to CEMS certification, the emission factors shall be as follows: NOx, 10.17 lb/mmcf; CO, 10.42 lb/mmcf.

The project owner shall maintain records to demonstrate compliance with this condition and shall make such records available to the Executive Officer upon request. The records shall be maintained for a minimum of 5 years in a manner approved by SCAQMD. The records shall include, but not be limited to, natural gas usage in a calendar month and automated monthly and annual calculated emissions. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall provide emissions summary data in compliance with his condition as part of the Quarterly Operation reports (**AQ-SC7**).

AQ-A2 The project owner shall limit emissions from this equipment as follows:

CONTAMINANT	EMISSIONS LIMIT
NOx	Less than or equal to 7,848 LBS IN ANY ONE YEAR
CO	Less than or equal to 9,143 LBS IN ANY ONE YEAR
VOC	Less than or equal to 3,432 LBS IN ANY ONE YEAR
PM10	Less than or equal to 5,412 LBS IN ANY ONE YEAR
PM2.5	Less than or equal to 5,412 LBS IN ANY ONE YEAR
SOx	Less than or equal to 595 LBS IN ANY ONE YEAR

For the purposes of this condition, the above annual emission limits shall be based on the total combined emissions from both turbines (D1 and D7).

The annual emissions of the facility for purposes of demonstrating compliance with this condition shall be calculated from the monthly emissions, including emissions for the commissioning period, as required by condition A63.1 (**AQ-A1**), except the normal operation annual emission factor for SOx is 0.72 lb/mmcf (based on 0.25 grains S/100 scf (annual average)).

The project owner shall maintain records to demonstrate compliance with this condition and shall make such records available to the SCAQMD Executive Officer upon request. The records shall be maintained for a minimum of 5 years in a manner approved by SCAQMD. The records shall include, but not be limited to, natural gas usage in a calendar month and automated monthly and annual calculated emissions. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall provide emissions summary data in compliance with his condition as part of the 4th Quarterly Operation reports (**AQ-SC7**).

AQ-A3 The 2.5 PPMV NOx emission limit(s) is averaged over 1 hour, dry basis at 15 percent oxygen.

This limit shall not apply to turbine commissioning, startup, and shutdown periods. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-A4 The 4.0 PPMV CO emission limit(s) is averaged over 1 hour, dry basis at 15 percent oxygen.

This limit shall not apply to turbine commissioning, startup, and shutdown periods. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-A5 The 2.0 PPMV VOC emission limit(s) is averaged over 1 hour, dry basis at 15 percent oxygen.

This limit shall not apply to turbine commissioning, startup, and shutdown periods. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-A6 The 25 PPMV NOx emission limit(s) is averaged over 1 hour, dry basis at 15 percent oxygen.

This limit shall not apply to turbine commissioning, startup, and shutdown periods. [40 CFR 60 Subpart KKKK, 7-6-2006] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit CEMS records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-A7 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time. [RULE 475, 10-8-1976; RULE 475, 8-7-1978] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit records demonstrating compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-A8 The 5.0 PPMV NH_3 emission limit is averaged over 1 hour, dry basis at 15 percent oxygen.

This limit shall not apply to turbine commissioning, startup, and shutdown periods.

The project owner shall calculate and continuously record the NH_3 slip concentration using the following equation:

NH_3 (ppmvd) = [a-b*c/1,000,000]*1,000,000/b, where:

a = NH_3 injection rate (lb/hr)/17(lb/lb-mol)

b = dry exhaust gas flow rate (scf/hr)/385.3 scf/lb-mol)

c = change in measured NOx across the SCR (ppmvd at 15% O2)

The project owner shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppmv accurate to within plus or minus 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 Executive Officer.

The ammonia slip calculation procedure shall be in effect no later than 90 days after initial startup of the turbine.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information without corroborative data using an approved reference method for the determination of ammonia.

The District may require the installation of a CEMS designed to monitor ammonia concentrations if the District determines that a commercially available CEMS has been proven to be accurate and reliable and that an adequate Quality Assurance/Quality Control protocol for the CEMS has been established. The District or another agency must establish a District

approved Quality Assurance/Quality Control protocol prior to the ammonia CEMS being a requirement.

The above ammonia slip calculation and the annual testing under D29.3 (**AQ-D3**) shall not be required if a District approved ammonia CEMS is installed. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: C4, C10]

Verification: The project owner shall install, calibrate, maintain, and the monitoring system according to a District-approved monitoring plan. Prior to the installation the project owner shall submit a monitoring plan to the CPM for review and approval. The project owner shall include exceedances of the hourly ammonia slip limit and calibration reports as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-B1 The project owner shall not use natural gas containing the following specified compounds:

COMPOUND	RANGE	GRAIN PER 100 SCF
H_2S	Greater than	0.25

This concentration limit is an annual average based on monthly samples of natural gas composition or gas supplier documentation. Gaseous fuel samples shall be tested using District Method 307-91 for total sulfur calculated as H_2S. [RULE 1303(a)(1)-BACT; 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall include documentation demonstrating compliance as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-C1 The project owner shall limit the number of start-ups to no more than 124 in any one calendar month.

For the purposes of this condition, the limits are for one turbine, except the annual limit is the combined total for two turbines (D1 and D7). The number of startups shall not exceed 4 startups in any one day. The number of startups shall not exceed 1000 in any calendar year.

A startup shall not exceed 15 minutes. The NOx emissions from a startup shall not exceed 3.6 lbs. The CO emissions from a startup shall not exceed 5.3 lbs.

The beginning of startup occurs at initial fire in the combustor and the end of startup occurs when the BACT levels are achieved. If during startup the process is aborted the process will count as one startup.

The project owner shall maintain records to demonstrate compliance with this condition and shall make such records available to the Executive Officer upon request. The records shall be maintained for a minimum of 5 years in a manner approved by SCAQMD. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall provide records including a table documenting the type of startup, duration and date of occurrence.

AQ-C2 The project owner shall limit the number of shutdowns to no more than 124 in any one calendar month.

For the purposes of this condition, the limits are for one turbine, except the annual limit is the combined total for two turbines (D1 and D7). The number of shutdowns shall not exceed 4 shutdowns in any one day. The number of shutdowns shall not exceed 1000 in any calendar year.

Each shutdown shall not exceed 10 minutes. The NOx emissions from a shutdown event shall not exceed 0.55 lbs. The CO emissions from a shutdown event shall not exceed 0.24 lbs.

The project owner shall maintain records in a manner approved by the District to demonstrate compliance with this condition and the records shall be made available to District personnel upon request. The records shall be maintained for a minimum of 5 years in a manner approved by SCAQMD. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall provide records including a table documenting each shutdown, and indicating the duration and date of occurrence.

AQ-C3 The project owner shall install and maintain a pressure relief valve set at 2.3 psig. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D13]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**).

AQ-D1 The project owner shall conduct source test(s) for the pollutant(s) identified below.

POLLUTANT(S) TO BE TESTED	REQUIRED TEST METHOD(S)	AVERAGING TIME	TEST LOCATION
NOx emissions	District Method 100.1	1 hour	Outlet of the SCR serving this equipment
CO emissions	District Method 100.1	1 hour	Outlet of the SCR serving this equipment
SOx emissions	AQMD Laboratory Method 307-91	District Approved Averaging Time	Fuel Sample
VOC emissions	District Method 25.3 Modified	1 hour	Outlet of the SCR serving this equipment
PM10 emissions	EPA Method 201A / District Method 5.1	District-Approved Averaging Time	Outlet of the SCR serving this equipment
PM2.5 emissions	EPA Method 201A and 202	District-Approved Averaging Time	Outlet of the SCR serving this equipment
NH_3 emissions	District Method 207.1	1 hour	Outlet of the SCR serving this equipment

Note: SCAQMD Source Testing Dept. indicates District Method 207.1 is the current standard ammonia source test method.

The test shall be conducted after District approval of the source test protocol, but no later than 180 days after initial start-up. The District shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the tests shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output in MW-gross and MW-net.

The test shall be conducted in accordance with a District approved source test protocol. The protocol shall be submitted to the SCAQMD engineer no later than 90 days before the proposed test date and shall be approved by the District before the test commences.

The test protocol shall include the proposed operating conditions of the turbine during the tests, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The sampling time for PM and PM2.5 tests shall be 4 hours or longer as necessary to obtain a measureable amount of sample.

The tests shall be conducted when the turbine is operating at loads of 50, 75, and 100 percent of maximum load.

For natural gas fired turbines only, for the purpose of demonstrating compliance with VOC BACT limits as determined by SCAQMD, the project owner shall use SCAQMD Method 25.3 modified as follows:

a) Triplicate stack gas samples extracted directly into Summa canisters, maintaining a final canister pressure between 400-500 mm Hg absolute,

b) Pressurization of the Summa canisters with zero gas analyzed/certified to less than 0.05 ppmv total hydrocarbons as carbon, and

c) Analysis of Summa canisters per the canister analysis portion of AQMD Method 25.3 with a minimum detection limit of 0.3 ppmv or less and reported to two significant figures. The temperature of the Summa canisters when extracting the samples for analysis shall not be below 70 F.

The use of this modified method for VOC compliance determination does not mean that it is more accurate than unmodified AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval, except for the determination of compliance with the BACT level of 2.0 ppmv VOC calculated as carbon for natural gas fired turbines.

For purposes of this condition, an alternative test method may be allowed for any of the above pollutants upon concurrence by EPA, CARB, and SCAQMD.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emissions limit. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002]

Verification: The project owner shall submit the proposed protocol for the initial source tests no later than 90 days prior to the proposed source test date to both the

District and CPM for approval. The project owner shall notify the District and CPM no later than 10 days prior to the proposed initial source test of the date and time of the scheduled test.

AQ-D2 The project owner shall conduct source test(s) for the pollutant(s) identified below.

POLLUTANT(S) TO BE TESTED	REQUIRED TEST METHOD(S)	AVERAGING TIME	TEST LOCATION
SOx emissions	AQMD Laboratory Method 307-91	District Approved Averaging Time	Fuel Sample
VOC emissions	District Method 25.3 Modified	1 hour	Outlet of the SCR serving this equipment
PM10 emissions	EPA Method 201A / District Method 5.1	District-Approved Averaging Time	Outlet of the SCR serving this equipment

The test(s) shall be conducted at least once every three years.

The test shall be conducted in accordance with a District approved source test protocol. The test shall be conducted and the results submitted to the District within 60 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The sampling time for the PM10 test(s) shall be 4 hours or longer as necessary to obtain a measureable amount of sample.

The test shall be conducted when the turbine is operating at 100 percent of maximum load.

For natural gas fired turbines only, for the purpose of demonstrating compliance with VOC BACT limits, as determined by SCAQMD, the project owner shall use Method 25.3 modified as follows:

a) Triplicate stack gas samples extracted directly into Summa canisters, maintaining a final canister pressure between 400-500 mm Hg absolute,

b) Pressurization of the Summa canisters with zero gas analyzed/certified to less than 0.05 ppmv total hydrocarbons as carbon, and

c) Analysis of Summa canisters per the canister analysis portion of AQMD Method 25.3 with a minimum detection limit of 0.3 ppmv or less and reported to two significant figures. The temperature of the Summa canisters when extracting the samples for analysis shall not be below 70 F.

The use of this modified method for VOC compliance determination does not mean that it is more accurate than unmodified AQMD Method 25.3, nor does it mean that it may be used in lieu of AQMD Method 25.3 without prior approval, except for the determination of compliance with the BACT level of 2.0 ppmv VOC calculated as carbon for natural gas fired turbines.

For purposes of this condition, an alternative test method may be allowed for any of the above pollutants upon concurrence by EPA, CARB, and SCAQMD.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emissions limit. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall test according to the original protocol. If changes to the testing methods or testing conditions are proposed, then the project owner shall submit a revised protocol for the source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall submit the source test results no later than 60 days following the source test date to both the District and CPM. The project owner shall notify the District and CPM no later than 10 days prior to the proposed initial source test of the date and time of the scheduled test.

AQ-D3 The project owner shall conduct source test(s) for the pollutant(s) identified below.

POLLUTANT(S) TO BE TESTED	REQUIRED TEST METHOD(S)	AVERAGING TIME	TEST LOCATION
NH_3 emissions	District Method 207.1	1 hour	Outlet of the SCR serving this equipment

Note: SCAQMD Source Testing Dept. indicates District Method 207.1 is the current standard ammonia source test method.

The test shall be conducted in accordance with a District approved source test protocol. The test shall be conducted and the results submitted to the District within 60 days after the test date. The SCAQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NOx concentration, as determined by the certified CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test

shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60-minute averaging time period.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall test according to the original protocol. If changes to the testing methods or testing conditions are proposed, then the project owner shall submit a revised protocol for the source tests no later than 45 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall submit the source test results no later than 60 days following the source test date to both the District and CPM. The project owner shall notify the District and CPM no later than 10 days prior to the proposed initial source test of the date and time of the scheduled test.

AQ-D4 The project owner shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv.

Concentrations shall be corrected to 15 percent oxygen on a dry basis for the purpose of demonstrating compliance with the BACT limit of 4.0 ppmvd CO at 15% O2.

The CEMS shall be installed and operated to measure CO concentrations over a 15-minute averaging time period.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine, and in accordance with an approved SCAQMD Rule 218 CEMS plan application. The project owner shall not install the CEMS prior to receiving initial approval from SCAQMD.

The initial certification testing shall be completed and submitted to the SCAQMD within 90 days of the conclusion of the turbine commissioning period. For the interim period after commissioning but prior to CEMS certification, and in the event of CEMS failure subsequent to CEMS certification, the project owner shall use the emission factor for CO provided in condition A63.1 for these purposes.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

CO Emission Rate, lbs/hr = K*Cco*Fd[20.9/(20.9% - %O_2 d)][(Qg * HHV)/10E+06], where:

1. K = 7.267 *10E-08 (lb/scf)/ppm
2. Cco = Average of four consecutive 15 min. average CO concentrations, ppm
3. Fd = 8710 dscf/MMBTU natural gas
4. %O_2 d = Hourly average % by volume O_2 dry, corresponding to Cco
5. Qg = Fuel gas usage during the hour, scf/hr
6. HHV = Gross high heating value of fuel gas, BTU/scf

[RULE 218, 5-14-1999; RULE 218.1, 5-14-1999; RULE 218.1, 5-14-2012; RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit the SCAQMD approved CEMS plan to the CPM within 90 days of SCAQMD approval. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-D5 The project owner shall install and maintain a CEMS to measure the following parameters:

NOx concentration in ppmv.

Concentrations shall be corrected to 15 percent oxygen on a dry basis for the purpose of demonstrating compliance with the BACT limit of 2.5 ppmvd NOx at 15% O2.

The CEMS shall be installed and operated to measure NOx concentrations over a 15-minute averaging time period.

The CEMS will convert the actual NOx concentrations to mass emission rates (lb/hr) and record the hourly emission rates on a continuous basis.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine, and in accordance with an approved CEMS certification application submitted in compliance with 40 CFR Part 60 Subpart

KKKK and 40 CFR Part 75. The project owner shall not install the CEMS prior to receiving initial approval from SCAQMD.

The initial certification testing shall be completed and submitted to the SCAQMD within 90 days of the conclusion of the turbine commissioning period. During the interim period between the conclusion of the commissioning period and the provisional certification date of the CEMS, and in the event of CEMS failure subsequent to CEMS certification, the project owner shall use the emission factor for NOx provided in condition A63.1 (**AQ-A1**) for these purposes.

The NOx CEMS shall comply with the requirements of conditions D82.2 (**AQ-D5**), H23.1 (**AQ-H1**), and H23.2 (**AQ-H2**). [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002; 40 CFR 60 Subpart KKKK, 7-6-2006; 40 CFR 75-Acid Rain CEM, 1-18-2012] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit the SCAQMD approved CEMS plan to the CPM within 90 days of SCAQMD approval. The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-D6 The project owner shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH_3).

The project owner shall also install and maintain a device to continuously record the parameter being measured. Continuously record shall be defined as measuring at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

The flow meter shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The project owner shall maintain the ammonia injection rate between 15 and 200 pounds per hour, except during startups and shutdowns. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: C4, C10]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall make the

site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-D7 The project owner shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor.

The project owner shall also install and maintain a device to continuously record the parameter being measured. Continuously record shall be defined as measuring at least once every hour and shall be calculated based upon the average of the continuous monitoring for that hour.

The temperature gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The exhaust temperature at the inlet of the SCR/CO catalyst shall be maintained between 460 degrees F and 855 degrees F, except during startups and shutdowns. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: C4, C10]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall make the site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-D8 The project owner shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches water column.

The project owner shall also install and maintain a device to continuously record the parameter being measured. Continuously record shall be defined as measuring at least once every month and shall be calculated based upon the average of the continuous monitoring for that month.

The pressure gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

The pressure differential shall not exceed 6.0 inches water column. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: C4, C10]

Verification: The project owner shall demonstrate compliance with this condition as part of the Quarterly Operation Reports (**AQ-SC7**). The project owner shall make the

site available for inspection of records by representatives of the District, ARB, and the Energy Commission.

AQ-E1 The project owner shall upon completion of construction, operate and maintain this equipment according to the following requirements:

In accordance with all air quality mitigation measures stipulated in the final California Energy Commission decision for the 16-AFC-01 project. [CA PRC CEQA, 5-12-2017] [Devices subject to this condition: D1, C3, C4, D7, C9, C10, D13]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-E2 The project owner shall install this equipment according to the following requirements:

The Permit to Construct listed in Section H shall expire one year from the Permit to Construct issuance date, unless a Permit to Construct extension has been granted by the Executive Officer or unless the equipment has been constructed and the project owner has notified the SCAQMD Executive Officer prior to the operation of the equipment, in which case the Permit to Construct serves as a temporary Permit to Operate. [RULE 202, 5-7-1976; RULE 202, 12-3-2004; RULE 205, 1-5-1990] [Devices subject to this condition: D1, C3, C4, D7, C9, C10, D13]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-E3 The project owner shall operate and maintain this equipment according to the following requirements:

Total commissioning hours shall not exceed 100 hours of fired operation for each turbine from the date of initial turbine start-up. Of the 100 hours, commissioning hours without control (pre-catalyst phase as defined in condition A63.1 (**AQ-A1**)) shall not exceed 20 hours.

Two turbines may be commissioned at the same time.

The project owner shall vent this equipment to the CO oxidation catalyst and SCR control system whenever the turbine is in operation after commissioning is completed.

The project owner shall provide the SCAQMD with written notification of the initial startup date of each turbine.

The project owner shall maintain records in a manner approved by the District to demonstrate compliance with this condition and the records shall be made available to the District personnel upon request. The records shall include, but not be limited to, the total number of commissioning hours, number of commissioning hours without control, natural gas fuel usage for the pre-catalyst phase, and natural gas fuel usage for the post-catalyst phase (pre-catalyst and post-catalyst phases as defined in condition A63.1 (**AQ-A1**)). [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, RULE 1303(b)(2)-Offset, 5-10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit all records including the total number of commissioning hours, number of commissioning hours without control, natural gas fuel usage for the pre-catalyst phase, and natural gas fuel usage for the post-catalyst phase per turbine to demonstrate compliance with this condition as part of the Quarterly Operational Report required in **AQ-SC7**. The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-E4 The project owner shall upon completion of the construction, operate and maintain this equipment according to the following requirements:

The 120 lbs/MMBtu CO_2 emission limit for non-base load turbines shall apply.

Compliance with the 120 lbs/MMBtu CO_2 emission limit shall be determined on a 12-operating-month rolling average basis.

This turbine shall be operated in compliance with all applicable requirements of 40 CFR 60 Subpart TTTT, including applicable requirements for recordkeeping and reporting. [40 CFR 60 Subpart TTTT, 10-23-2015] [Devices subject to this condition: D1, D7]

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 Quarterly Operational Report required in **AQ-SC7**.

AQ-E5 The project owner shall vent this equipment, during filling, only to the vessel from which it is being filled. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002] [Devices subject to this condition: D13]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-H1 This equipment is subject to the applicable requirements of the following

Rules or Regulations:

CONTAMINANT	RULE	RULE/SUBPART
NOx	40 CFR 60, SUBPART	KKKK
SO2	40 CFR 60, SUBPART	KKKK

The NOx CEMS shall comply with the requirements of conditions D82.2 (**AQ-D5**), H23.1 (**AQ-H1**), and H23.2 (**AQ-H2**).

The NOx CEMS shall comply with the applicable requirements of §60.13, §60.4335(b), §60.4340(b)(1) and §60.4345 for monitoring.

The NOx CEMS shall comply with the applicable requirements of §60.4350 for identifying excess emissions.

The project owner shall comply with the requirements of §60.7(c), §60.4375, §60.4380, and §60.4395 for reporting excess emissions and monitor downtime.

The performance evaluation of the NOx CEMS shall be conducted as part of the initial performance test of the turbine required no later than 180 days after initial start-up by §60.8, in accordance with the requirements of §60.4405. The initial performance test of the turbine shall be conducted to demonstrate compliance with the §60.4320 limit of 25.0 ppmv NOx at 15% O2, 1-hour averaging. [40 CFR 60 Subpart A, 6-3-2016; 40 CFR 60 Subpart KKKK, 7-6-2006] [Devices subject to this condition: D1, D7]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-H2 This equipment is subject to the applicable requirements of the following Rules or Regulations:

CONTAMINANT	RULE	RULE/SUBPART
NO_x	40 CFR	Part 75
SO_2	40 CFR	Part 75

The NOx CEMS shall comply with the requirements of conditions D82.2 (**AQ-D5**), H23.1 (**AQ-H1**), and H23.2 (**AQ-H2**).

The project owner shall comply with the applicable requirements of §75.4 for monitoring systems installation and certification testing compliance dates.

The NOx CEMS shall comply with the applicable requirements of §75.10 for general operating requirements.

The NOx CEMS shall comply with the applicable requirements of §75.12 for specific provisions for monitoring NOx emission rate.

The project owner shall comply with §75.20 for the initial certification requirements for the NOx CEMS.

The project owner shall comply with §75.21 for the quality assurance and quality control requirements for the NOx CEMS.

The project owner shall use the reference test methods in §75.22, or equivalent method(s) approved by the EPA.

The project owner shall comply with §75.24 for out-of-control periods and adjustment for system bias requirements for the NOx CEMS.

The project owner shall comply with the applicable requirements of Subpart D--Missing Data Substitution Procedures.

The project owner shall comply with the applicable requirements of Subpart F — Recordkeeping Requirements.

The project owner shall comply with the applicable requirements of Subpart G — Reporting Requirements.

The project owner shall measure and record SO_2 emissions by using the applicable procedures specified in appendix D to Part 75 for estimating hourly SO_2 mass emissions, pursuant to §75.11(d)(2).

The project owner shall measure and record CO_2 emissions by following the procedures in appendix G to Part 75 for estimating daily CO_2 mass emissions, pursuant to §75.10(a)(3)(ii) and §75.13(b). [40 CFR 75-Acid Rain CEM, 1-18-2012] [Devices subject to this condition: D1, D7]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-H3 This equipment is subject to the applicable requirements of the following Rules or Regulations:

CONTAMINANT	RULE	RULE/SUBPART
Refrigerants	District Rule	1415

[Rule 1415, 12-3-2010] [Devices subject to this condition: E15]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-H4 This equipment is subject to the applicable requirements of the following Rules or Regulations:

CONTAMINANT	RULE	RULE/SUBPART
Refrigerants	40 CFR 82, Subpart	F

[40 CFR 82 Subpart F, 6-25-2013] [Devices subject to this condition: E15]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

AQ-K1 The project owner shall provide to the District a source test report in accordance with the following requirements:

Source test results shall be submitted to the District no later than 90 days after the source tests required by conditions D29.1 (**AQ-D1**), D29.2 (**AQ-D2**), and D29.3 (**AQ-D3**), are conducted.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 15 percent oxygen (dry basis), mass rate (lbs/hr), lbs/MM cubic feet, and lbs/MMBtu. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

All exhaust flow rates shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Source test results shall also include the oxygen levels in the exhaust, the fuel flow rate (CFH), the flue gas temperature, and the generator power output (MW) under which the test was conducted. [RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; RULE 1303(b)(2)-Offset, 5-

10-1996; RULE 1303(b)(2)-Offset, 12-6-2002] [Devices subject to this condition: D1, D7]

Verification: The project owner shall submit the source test results no later than 90 days following the source test date to both the District and CPM.

AQ-K2 The project owner shall keep records, in a manner approved by the district, for the following parameter(s) or item(s):

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings. [RULE 3004(a)(4) - Periodic Monitoring, 12-12-1997] [Devices subject to this condition: E14]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB, U.S. EPA and the Energy Commission.

BIOLOGICAL RESOURCES

DESIGNATED BIOLOGIST SELECTION

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.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's degree in biological sciences, zoology, botany, ecology, or a closely related field;

2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and

3. At least one year of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the conditions of certification.

Verification: The project owner shall submit the specified information at least 75 days prior to the start of pre-construction site mobilization activities. No pre-construction site mobilization or construction-related activities shall commence until a CPM-approved Designated Biologist is available to be on site.

If a Designated Biologist is replaced, the specified information for the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

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, closure, or restoration 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. Inspect, or train and direct the site personnel how to inspect, 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 Reports (MCRs) and the Annual Compliance Report (ACR);

9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training, and all permits; and

10. Maintain the ability to be in regular, direct communication with representatives of California Department of Fish and Wildlife (CDFW), U.S. Fish and Wildlife Service (USFWS), and CPM, including notifying these agencies of dead or injured listed species and reporting special status species observations to the California Natural Diversity Database.

Verification: The Designated Biologist shall submit in the monthly compliance report to the CPM copies of all written reports and summaries that document construction activities that have the potential to affect biological resources. If actions may affect biological resources during operation, the Biological Monitor(s), under the supervision of the Designated Biologist, shall be available for monitoring and reporting. During project operation, the Designated Biologist(s) shall submit record summaries in the annual compliance report unless their duties cease, as approved by the CPM.

BIOLOGICAL MONITOR SELECTION

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. The resume shall demonstrate, to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Verification: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any pre-construction site mobilization activities. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) have been trained, including the date when training was completed. If additional biological monitors are needed during construction, the specified information shall be submitted to the CPM for approval at least 10 days prior to their first day of monitoring activities.

DESIGNATED BIOLOGIST AND BIOLOGICAL MONITOR AUTHORITY

BIO-4 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.

If required by the Designated Biologist and/or Biological Monitor(s) the project owner's construction/operation manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist. 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; and

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 would be instituted as a result of the work stoppage.

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 would be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner would be notified by the CPM that coordination with other agencies would require additional time before a determination can be made.

WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

BIO-5 The project owner shall develop and implement a project-specific Worker Environmental Awareness Program (WEAP) and shall secure approval for the WEAP from the CPM in consultation with USFWS and CDFW. The WEAP shall be administered to all on site personnel including surveyors, construction engineers, employees, contractors, contractor's employees, supervisors, inspectors, and subcontractors. 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 electronic media and written material is made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, explain the reasons for protecting these resources, and the function of flagging in designating sensitive resources and authorized work areas;

3. Discuss federal and state laws afforded to protect the sensitive species and explain penalties for violation of applicable laws, ordinances, regulations, and standards (e.g., federal, and state endangered species acts);

4. Place special emphasis on the known and potentially occurring bird species protected by the Migratory Bird Treaty Act and California Fish and Game Code, including information on physical characteristics, distribution, behavior, ecology, sensitivity to human activities, legal protection and status, penalties for violations, reporting requirements, and protection measures;

5. Include a discussion of fire prevention measures to be implemented by workers during project activities; request workers to dispose of cigarettes and cigars appropriately and not leave them on the ground or buried;

6. Present the meaning of various temporary and permanent habitat protection measures;

7. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

8. Include a training acknowledgment form to be signed by each worker indicating that they received the WEAP training and shall abide by the guidelines.

Verification: The specific WEAP shall be administered by a competent individual(s) acceptable to the Designated Biologist. At least 45 days prior to the start of any pre-construction site mobilization, 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 CPM shall approve the WEAP materials prior to their use.

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. Workers shall receive and be required to visibly display a hardhat sticker or certificate indicating that they have completed the required training.

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. The project owner will provide documentation of the dates of annual training and number of participants who complete the training in the Annual Compliance Report. During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

Training acknowledge forms shall be maintained by the project owner and shall be made available to the CPM upon request.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION AND MONITORING PLAN (BRMIMP)

BIO-6 The project owner shall develop a BRMIMP and submit two copies of the proposed BRMIMP to the CPM (for review and approval) and to CDFW and USFWS (for review and comment), if applicable, and shall implement the measures identified in the approved BRMIMP. The BRMIMP shall be prepared in consultation with the Designated Biologist and shall include the following:

1. All biological resource mitigation, monitoring, and compliance measures proposed by the project owner and agreed to by staff;

2. All biological resource conditions of certification identified in the Commission Decision as necessary to avoid or mitigate impacts;

3. All biological resource mitigation, monitoring, and compliance measures required in other state or federal agency terms and conditions, such as those provided in the National Pollution Discharge Elimination System (NPDES) Construction Activities Storm Water General Permit;

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 disturbances from construction and associated site clearance 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;

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 and conditions are or are not successful;

11. All performance standards and 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);

13. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

14. A requirement to submit any sightings of any special-status species that are observed on or in proximity to the project site, or during project surveys, to the California Natural Diversity Database (CNDDB) per CDFW requirements.

Verification: The project owner shall provide the BRMIMP to the CPM for review (in consultation with CDFW) and approval at least 45 days prior to start of any pre-construction site mobilization.

If there are any permits that have not yet been received when the BRMIMP is first submitted, copies of these permits shall be submitted to the CPM within 5 days of their receipt, and a revised BRMIMP shall be submitted to the CPM within 10 days of receipt of permits by the project owner.

The project owner shall notify the CPM no less than 5 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 shall be reported in the monthly compliance reports by the Designated Biologist (i.e., survey results, construction activities that were monitored, species observed).

Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written Construction Closure 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.

GENERAL IMPACT AVOIDANCE AND MINIMIZATION MEASURES

BIO-7 The project owner shall implement the following measures during site mobilization, construction, operation, and closure to manage their project site and related facilities in a manner to avoid or minimize impacts to biological resources:

1. Delineation of Project Site. The boundaries of all areas to be temporarily or permanently 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. All disturbances, vehicles, and equipment shall be confined to the flagged areas. All stakes, flagging, fencing or barriers shall be removed from the project site and vicinity of any waterbodies upon completion of project activities.

2. Escape Ramp in Trench. At the end of each work day, the Designated Biologist, Biological Monitor, and/or trained site personnel shall ensure that all potential wildlife pitfalls (trenches, bores, and other excavations) have been backfilled. If backfilling is not feasible, all trenches, bores, and other excavations shall have an escape ramp at each end constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees to allow any animals that may have become trapped in the trench to climb out overnight or they shall be covered completely to prevent wildlife access. Should wildlife become trapped, the Designated Biologist or Biological Monitor shall remove and

relocate the individual to a safe location. If trained site personnel are inspecting trenches, bores, and other excavations and wildlife is trapped, they will immediately notify the Designated Biologist and/or Biological Monitor. Any wildlife encountered during the course of construction shall be allowed to leave the construction area unharmed.

3. Soil Wind and Water Erosion Control. Spoils shall not be stockpiled adjacent to any channels (i.e., Stanton Storm Channel, Carbon Creek Channel) to minimize potential for spoils to enter into these waterbodies. Soil bonding and weighting agents used on unpaved surfaces shall be non-toxic to wildlife and plants. The project owner shall keep the amount of water used for dust abatement to the minimum amount needed, and shall not allow water to form puddles. During construction, a Biological Monitor shall patrol these areas and shall take appropriate action to reduce water application rates where necessary.

4. Notification of Take, Injury, or Death of Common Wildlife Species. Site personnel shall report all inadvertent death or injuries of wildlife species to the appropriate project representative, including road kill. During construction, injured or dead animals detected by personnel in the project area shall be reported immediately to a Biological Monitor or Designated Biologist, who shall remove the carcass or injured animal promptly. During operations, the Plant Manager shall be notified who shall promptly notify the Designated Biologist to remove the carcass or injured animal. Species name, physical characteristics of the animal (sex, age class, length, weight), and other pertinent information shall be noted and reported in the compliance reports by the Designated Biologist.

   The project owner shall immediately notify the Designated Biologist or Biological Monitor if a special-status species is taken or injured at the project site, or if a special status species is otherwise found dead or injured within the vicinity of the project. The Designated Biologist or Biological Monitor shall provide initial immediate notification to the CPM as well as CDFW and/or USFWS. The initial immediate notification shall include information regarding the location of the animal and/or carcass, date and incident location, time of incident, name of the Designated Biologist or Biological Monitor(s) present, the activity that caused the take or injury, and common and scientific names of species taken or injured. Following initial notification, the project owner shall send the CPM and CDFW and/or USFWS a written report via email within two (2) calendar days. The written report shall include the information in the initial

notification and if possible provide a photograph of the species that was taken or injured, and preventative measures that will be implemented to prevent take or injury of special-status species.

5. Hazardous Waste. 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 project owner shall ensure that work shall immediately stop and, pursuant to pertinent state and federal statutes and regulations, arrange for repair and clean up by qualified individuals of any fuel or hazardous waste leaks or spills at the time of occurrence, or as soon as it is safe to do so. The Designated Biologist shall be informed immediately of any spills of hazardous material or wastes. Servicing of construction equipment shall take place only at designated areas. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks or spills.

6. Trash Abatement and Feeding Wildlife. All general trash, food-related trash items (e.g., wrappers, cans, bottles, food scraps, cigarettes, etc.) and other human-generated debris will be stored in animal proof containers and/or removed from the site each day. No deliberate feeding of wildlife will be allowed. Workers shall not feed wildlife or bring pets to the project site.

7. Firearms and Dogs. The project owner shall prohibit firearms and domestic dogs (except service dogs) from the project site, except those in the possession of authorized security personnel or local, state, or federal law enforcement officials.

8. Erosion Control Materials. Standard best management practices (BMPs) from the project Stormwater Pollution Prevention Plan shall be implemented during all phases of the project (construction, operation, and decommissioning) where storm water run-off from the site could enter adjacent creeks or channels. Sediment and other flow-restricting materials shall be moved to a location where they shall not be washed back into any jurisdictional waters. All disturbed soils within the project site shall be stabilized to reduce erosion potential, both during and following construction (See **SOIL & WATER-1**).

9. Invasive Weeds. The project owner shall implement the following measures during construction and operation to prevent the spread and propagation of nonnative, invasive 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. Use only weed-free straw, hay bales, and seed for erosion control and sediment barrier installations;

c. Invasive non-native species shall not be used in landscaping plans and erosion control;

d. Monitor and rapidly implement control measures to ensure early detection and eradication of weed invasions.

10. Herbicides. During construction and operation, only herbicides containing a harmless dye and registered with the California Department of Pesticide Regulation (DPR) shall be used. All herbicides shall be applied in accordance with regulations set by DPR. All herbicides shall be used according to labeled instructions. Labeled instructions for the herbicide used shall be made available to the CPM upon request. No herbicide shall be applied when winds are greater than five (5) miles per hour.

11. Rodenticides and Insecticides. During construction and operation, the project owner shall not use rodenticides and/or insecticides on the project site without prior written permission from the CPM. The project owner shall not use any second generation anticoagulant rodenticide (brodifacoum, bromadiolone, difethialone, and difenacoum) on the project site. The project owner shall not use any first generation anticoagulant rodenticide (diphacinone, chlorophacinone, and warfarin) on the project site without prior written permission from the CPM.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP and implemented. Implementation of the measures shall 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 and which items are still outstanding.

PRE-CONSTRUCTION NEST SURVEYS AND IMPACT AVOIDANCE AND MINIMIZATION MEASURES FOR BREEDING BIRDS

BIO-8 Pre-construction nest surveys shall be conducted if construction work will occur from February 15 through August 31. The term “work” shall be defined as all site assessment, pre-construction activities, site mobilization, and

ground disturbing construction activities. The Designated Biologist or Biological Monitor shall perform surveys in accordance with the following guidelines:

1. Surveys shall cover all potential nesting habitat and substrate within the project site and any offsite facilities (e.g. generator tie line and natural gas line, worker parking areas and staging areas) and publically-accessible areas within 500 feet of the project boundary. These surveys shall include the orders *Falconiformes* and *Strigiformes* (raptors and owls). Surveys shall be conducted at appropriate nesting times and concentrate on potential roosting or perch sites. Any habitat areas adjacent to the project site but not publically accessible shall be surveyed with binoculars.

2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. Pre-construction surveys shall be conducted no more than 14 days prior to initiation of construction activity. One survey shall be conducted within the 3-day period 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 on-site surveys, a no-disturbance buffer zone (protected area surrounding the nest) shall be established around each nest with fencing, flagging and/or signage, as appropriate. The size of each buffer zone shall be determined by the Designated Biologist in consultation with the CPM (in coordination with CDFW and USFWS). If any nests of birds of prey are observed, these nests shall be designated an ecologically sensitive area and protected (while occupied) by a minimum 500-foot radius during project construction. Off-site special-status nests shall be mapped and monitored, but shall not be fenced. Nest locations shall be mapped using GPS technology and submitted, along with a weekly report stating the survey results, to the CPM in the monthly compliance reports.

4. If active nests of special-status species are detected during surveys, the Designated Biologist or Biological Monitor shall inform the CPM within one business day, and shall monitor all on-site and off-site nests at least once per week, to determine whether birds are being disturbed. If signs of disturbance or distress are observed, the Designated Biologist or Biological Monitor shall immediately implement adaptive measures to

reduce disturbance in coordination with the CPM. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, or placement of visual screens or sound-dampening structures between the nest and construction activity, where possible.

5. If active nests are detected during surveys, the Designated Biologist or Biological Monitor shall monitor the nest until he or she determines that nestlings have fledged and dispersed or the nest is no longer active. Activities that might, in the opinion of the Designated Biologist or Biological Monitor, disturb nesting activities (e.g., exposure to exhaust), shall be prohibited within the buffer zone until such a determination is made.

6. The Designated Biologist shall provide the CPM and CDFW with field notes or other documentation within 24 hours of completing the surveys. An email report with a letter report to follow may be used. The email/letter report shall state how impacts of any nesting birds will be avoided by citing the appropriate information from this condition of certification. The letter report/email report shall include the time, date, methods, and duration of the surveys; identity and qualifications of the surveyor(s); and a list of species observed.

7. If active nests are detected during the surveys, the reports shall include a map or aerial photo identifying the location of the nest(s), species, and shall depict the boundaries of the proposed no-disturbance buffer zone around the nest(s).

Verification: The project owner shall provide notification to the CPM, CDFW, and USFWS at least 2 weeks prior to initiating surveys; notification shall include the name and resume of the biologist(s) conducting the surveys and the timing of the surveys. Prior to the start of any pre-construction site mobilization, the project owner shall provide the CPM, CDFW, and USFWS a letter-report describing the findings of the preconstruction nest surveys. All impact avoidance and minimization measures related to nesting birds shall be included in the BRMIMP and implemented. Implementation of the measures shall be reported in the monthly compliance reports by the Designated Biologist.

JACK AND BORE DRILLING BEST MANAGEMENT PRACTICES

BIO-9 During construction, using jack and bore drilling techniques, the Designated Biologist or Biological Monitor must be present at all times. The Designated

Biologist or Biological Monitor must be allowed to monitor all activities pertaining to drilling under Carbon Creek Channel, and shall be given authority to do the following, including but not limited to:

1. visually inspect the drill path,

2. monitor the creek for evidence of frac-out or drilling fluid release,

3. examining the drilling fluid pressures and return flows,

4. approval of the drilling setup locations,

5. verifying the perimeter of the work site is adequately flagged prior to equipment setup, and

6. having the authority to halt any drilling if the operations lead to frac-out or the drilling fluid pressures and return flows drop.

Verification: The Designated Biologist or Biological Monitor must notify the CPM and CDFW (no later than the following morning of the incident, or Monday morning in the case of a weekend) in the event of frac-out. The CPM and CDFW must also be notified of any non-compliance or a halt of any jack and bore drilling operations. The project owner shall notify the CPM and CDFW 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.

CULTURAL RESOURCES

CUL-1 APPOINTMENT AND QUALIFICATIONS OF CULTURAL RESOURCES PERSONNEL

A. CULTURAL RESOURCE SPECIALIST

1. Appointment and Qualifications

The project owner shall assign a Cultural Resources Specialist (CRS) and at least one Alternate CRS to the project. The project owner shall submit the resumes of the proposed CRS and Alternative CRS(s), with at least three references and contact information, to the Energy Commission compliance project manager (CPM) for review and approval.

The CRS and Alternate CRS(s) shall have training and background that conform to the U.S. Secretary of the Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, Part 61. In addition, the CRS and Alternate CRS(s) shall have the following qualifications:

1. A background in anthropology, archaeology, history, architectural history, or a related field;

2. At least 10 years of archaeological or historical experience (as appropriate for the project site), with resources mitigation and fieldwork;

3. At least three years of field experience in California; and

4. At least three years 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 project owner may replace the CRS by submitting the required resume, references and contact information of the proposed replacement CRS to the CPM.

2. Duties of Cultural Resources Specialist

The CRS shall manage all cultural resource monitoring, mitigation, curation, and reporting activities, and any pre-construction cultural resource activities, unless management of these is otherwise provided for in accordance with the cultural resource conditions of certification (conditions). The CRS shall serve as the primary point of contact on all cultural resource matters for the Energy Commission. The CRS shall obtain the services of Cultural Resources Monitor(s) (CRMs), Native American Monitor(s) (NAMs), and other technical specialist(s), 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.

After all ground disturbances are completed and the CRS has fulfilled all responsibilities specified in these cultural resources conditions, the project owner may discharge the CRS, after receiving approval from the CPM.

The cultural resource conditions shall continue to apply during operation of the proposed power plant, limited to those ground disturbing activities in non-fill sediments.

B. CULTURAL RESOURCES MONITORS

1. Appointment and Qualifications

The CRS may assign Cultural Resources Monitor(s) (CRMs). CRMs shall have the following qualifications:

1. B.S. or B.A. degree in anthropology, archaeology, historical archaeology, or a related field; and one year of archaeological field experience in California; or

2. A.S. or A.A. degree in anthropology, archaeology, historical archaeology, or a related field, and four years of archaeological field experience 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 archaeological field experience in California.

C. NATIVE AMERICAN MONITORS

1. Appointment and Qualifications:

   Preference in selecting NAM(s) shall be given to Native Americans with:

   1. Traditional ties to the area being monitored.

   2. Knowledge of local historic and prehistoric Native American village sites.

   3. Knowledge and understanding of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.

   4. Ability to effectively communicate the requirements of Health and Safety Code, Section 7050.5 and Public Resources Code, Section 5097.9 et seq.

   5. Ability to work with law enforcement officials and the Native American Heritage Commission to ensure the return of all associated grave goods taken from a Native American grave during excavation.

   6. Ability to travel to project sites within traditional tribal territory.

   7. Knowledge and understanding of Title 14, California Code of Regulations, Section 15064.5.

   8. Ability to advocate for the preservation in place of Native American cultural features through knowledge and understanding CEQA mitigation provisions.

   9. Ability to read a topographical map and be able to locate sites and reburial locations for future inclusions in the Native American Heritage Commission’s Sacred Lands Inventory

   10. Knowledge and understanding of archaeological practices, including the phases of archaeological investigation.

2. NAMs that Qualify as CRSs or CRMs

A NAM that qualifies as either a CRS or CRM, in addition to being a NAM, may also function as one and only one of the following: CRS or CRM.

D. CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialist(s), e.g., geoarchaeologist, historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval. The resume of each proposed specialist shall demonstrate that their training and background meet the U.S. Secretary of Interior's Professional Qualifications Standards for their specialty (if appropriate), as published in Title 36, Code of Federal Regulations, Part 61, and show the completion of appropriate graduate-level coursework. The resumes of specialists shall include the names and telephone numbers of contacts familiar with the work of these persons on projects referenced in the resumes and demonstrate to the satisfaction of the CPM that these persons have the appropriate training and experience to undertake the required research. The project owner may name and hire any specialist prior to certification. All specialists are under the supervision of the CRS.

1. The project owner shall submit the specified information at least 75 days prior to the start of (1) ground disturbance (as defined in the Compliance Conditions and Compliance Monitoring Plan section); (2) post-certification cultural resources activities (including, but not limited to, "survey", "in-field data recording," "surface collection," "testing," "data recovery" or "geoarchaeology"); or (3) site preparation or subsurface soil work during pre-construction activities or site mobilization.

2. The project owner may replace a CRS by submitting the required resume, references and contact information to the CPM at least 10 working days prior to the termination or release of the then-current CRS. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent CRS is proposed to the CPM for consideration.

3. At least 20 days prior to ground disturbance, the CRS shall provide proof of qualifications for any anticipated CRMs, NAMS, and additional specialists for the project to the CPM.

4. If efforts to obtain the services of a qualified NAM are unsuccessful, the project owner shall inform the CPM of this situation in writing at least 30 days prior to the beginning of post-certification cultural resources field work or construction-related ground disturbance.

5. At least 5 days prior to additional CRMs or NAMs beginning on-site duties during the project, the CRS shall submit the qualifications of the proposed CRMs and NAMs to the CPM for review and approval.

6. 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.

7. At least 10 days prior to the start of construction-related ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions.

8. No ground disturbance shall occur prior to CPM approval of the CRS and alternates, unless such activities are specifically approved by the CPM.

CUL-2 INFORMATION TO BE PROVIDED TO CRS

Prior to the start of ground disturbance, the project owner shall provide the CRS with copies of the application for certification (AFC), data responses, confidential cultural resources reports, all supplements, the Energy Commission Staff's Cultural Resources Final Staff Assessment, and the cultural resources Conditions from the Final Decision for the project, if the CRS does not already possess copies of these materials. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:24,000 and 1 inch = 200 feet, respectively) for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

Maps shall include any National Register of Historic Places (NRHP)/California Register of Historical Resources (CRHR) -eligible cultural resources, including any historic built environment resources, identified in the project area of analysis.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the

start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

The project owner shall provide the documents described in the first paragraph of this condition to new CRSs in the event that the approved CRS is terminated or resigns.

Verification:

1. At least 40 days prior to the start of ground disturbance, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, and Final Commission Decision have been provided to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

2. At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.

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 schedule of the next week's anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

5. Within 5 days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

6. If a new CRS is approved by the CPM, as provided for in CUL-1, the project owner shall provide the CPM notice that the AFC, data responses, confidential cultural resources documents, all supplements, FSA, Final Commission Decision, and maps and drawings have been provided to the new CRS within 10 days of such approval.

CUL-3 CULTURAL RESOURCES MITIGATION AND MONITORING PLAN (CRMMP)

Prior to the start of ground disturbance, the project owner shall submit the 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 CRMMP provided by the CPM, and the authors' name(s) shall appear on the title page of the CRMMP. The CRMMP shall identify 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 be designated as a confidential document if the location(s) of cultural resources are described or mapped.

The CRMMP shall include 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."

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 specific mitigation plan shall be prepared for any unavoidable impacts to any CRHR-eligible (as determined by the CPM) resources. 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 project-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 project-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, 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 (SHRC's) *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from the SHRC), into a retrievable storage collection in a public repository or museum.

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 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), including the statement that the project owner will notify the CPM and the NAHC of the discovery of human remains.

10. 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.

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 *Archaeological Resource Management Report (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. If the location of cultural resources is identified in the CRMMP, the project owner shall submit the CRMMP under confidential cover and staff will redact the confidential information prior to submitting the CRMMP to the project compliance docket.

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 State Historic Resources Commission's (SHRC) *Guidelines for the Curation of Archaeological Collections* (1993, or future updated guidelines from SHRC), 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 FINAL CULTURAL RESOURCES REPORT (CRR)

The project owner shall submit the final 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 Archaeological Resource Management Report (ARMR) format. The final CRR shall report on all field activities including dates, times and locations, results, samplings, and analyses. All survey reports, DPR 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resources Information System (CHRIS) shall be included as appendices to the final 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 within 30 days of 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 CHRIS, the curating institution, if archaeological materials were collected, and to the tribal chairpersons of any Native American groups requesting copies of project-related reports.

CUL-5 CULTURAL RESOURCES WORKER ENVIRONMENTAL AWARENESS PROGRAM (WEAP)

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 cultural resources part of this training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS is encouraged to include a Native American presenter in the training to contribute the Native American perspective on archaeological and ethnographic resources. During the training and during construction, the CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes.

The training shall include:

1. A discussion of applicable laws and penalties under 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, if the CRS, Alternate CRS, or CRMs are not present, are to halt work on their own in the vicinity of a potential cultural resources discovery, and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;

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 cultural resources WEAP training program draft text and/or training video, 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 CULTURAL RESOURCES MONITORING

The project owner shall ensure that a CRS, alternate CRS, or CRMs shall be on site for all ground disturbance in areas slated for excavation into non-fill (native) sediments.

Prior to the start of ground disturbance, the project owner shall notify the CPM and all interested Native Americans of the date on which ground disturbance will ensue. Where excavation equipment is actively removing dirt concurrently at more than one location at a time, full-time archaeological monitoring shall require at least one monitor per excavation area. Where excavated material is stockpiled on-site, one monitor shall be present during loading activities of the stockpiles material into a truck for disposal.

In the event that the CRS believes that the required number of monitors is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the number of monitors shall be provided to the CPM for review and approval prior to any change in the number of monitors.

The project owner shall obtain the services of one or more NAM(s) to monitor construction-related ground disturbance in areas slated for excavation into non-fill (native) sediments. If qualified, a NAM can also serve as the CRM or CRS, but not both. Preference in selecting a NAM shall be given to Native Americans with traditional ties to the area that will be monitored. If efforts to obtain the services of a qualified NAM are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow construction-related ground disturbance to proceed without a NAM.

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. The daily monitoring logs shall, at a minimum, include the following information.

- First and last name of the CRM and any accompanying NAM.
- Time in and out.
- Weather. Specify if weather conditions led to work stoppages.
- Work location (project component). Provide specifics—.e.g., power block, landscaping.
- Proximity to site location. Specify if work conducted within 1000 feet of a known cultural resource.
- Work type (machine).
- Work crew (company, operator, and foreman).
- Depth of excavation.
- Description of work.
- Stratigraphy.
- Artifacts, listed with the following identifying features:
- Field artifact #: When recording artifacts in the daily monitoring logs, the CRS shall institute a field numbering system to reduce the likelihood of repeat artifact numbers. A typical numbering system could include a project abbreviation, monitor's initials, and a set of numbers given to that monitor: e.g., Stn-MB-123.
- Description.
- Measurements.
- Universal Transverse Mercator (UTM) coordinates.
- Whether artifacts are likely to be isolates or components of larger resources.
- Assessment of significance of any finds.
- Actions taken.
- Plan for the next work day.

- A cover sheet shall be submitted with each day's monitoring logs, and shall at a minimum include the following:
    - Count and list of first and last names of all CRMs and of all NAMs for that day.
    - General description (in paragraph form) of that day's overall monitoring efforts, including monitor names and locations.
    - Any reasons for halting work that day.
    - Count and list of all artifacts found that day: include artifact #, location (i.e., grading in Unit X), measurements, UTMs, and very brief description (i.e., historic can, granitic biface, quartzite flake).
    - Whether any artifacts were found out of context (i.e., in fill, caisson drilling, flood debris, spoils pile).

Copies of the daily monitoring logs and cover sheets shall be provided by email from the CRS to the CPM, as follows:

- Each day's monitoring logs and cover sheet shall be merged into one PDF document.
- The PDF title and headings, and emails, shall clearly indicate the date of the applicable monitoring logs.
- PDFs for any revised or resubmitted versions shall use the word "revised" in the title.

Daily and/or weekly maps shall be submitted along with the monitoring logs as follows:

- The CRS shall provide daily and/or weekly maps of artifacts at the request of the CPM. A map shall also be provided if artifact locations show complexity, high density, or other unique considerations.
- Maps shall include labeled artifacts, project boundaries, previously recorded sites and isolates, aerial imagery background, and appropriate scales.

From the daily monitoring logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

- The Cultural Resources section of the MCR shall be prepared in coordination with the CRS, and shall include a monthly summary report of cultural resources-related monitoring. The summary shall:
    - List the number of CRMs and NAMs on a daily basis, as well as provide monthly monitoring-day totals.
    - Give an overview of cultural resource monitoring work for that month, and discuss any issues that arose.
    - Describe fulfillment of requirements of each cultural mitigation measure.
    - Summarize the confidential appendix to the MCR, without disclosing any specific confidential details.
    - Include the artifact concordance table (as discussed under the next bullet point), but with removal of UTMs.
    - A concordance table that matches field artifact numbers with the artifact numbers used in the DPR forms shall be included. The sortable table shall contain each artifact's date of collection and UTM numbers, and note if an artifact has been deaccessioned or otherwise does not have a corresponding DPR form. Any post-field log recordation changes to artifact numbers shall also be noted.
    - DPR forms shall be submitted as one combined PDF.
    - The PDF shall organize DPR forms by site and/or artifact number.
    - The PDF shall include an index and bookmarks.
    - If artifacts from a given site location (in close proximity of each other or an existing site) are collected month after month, and if agreed upon with the CPM, a final updated DPR for the site may be submitted at the completion of monitoring. The monthly concordance table shall note that the DPR form for the included artifacts is pending.

Each MCR, prepared under supervision of the CRS, shall be accompanied by a confidential appendix that contains completed DPR 523A forms for all artifacts recorded or collected in that month. For any artifact without a corresponding DPR form, the CRS shall specify why the DPR form is not applicable or pending (i.e. as part of a larger site update).

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 email 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.

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 notify all Native Americans on the Native American Heritage Commission's contact list of the date on which the project's ground disturbance will begin.

2. At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log and information to be included in the cover sheet for the daily monitoring logs.

3. While monitoring is on-going, the project owner shall submit each day's monitoring logs and cover sheet merged into one PDF document by email within 24 hours.

4. The CRS and/or project owner shall notify the CPM of any incidents of non-compliance with the conditions and/or applicable LORS by telephone or email within 24 hours.

5. The CRS shall provide daily maps of artifacts along with the daily monitoring logs if more than 10 artifacts are found per day, or as requested by the CPM.

6. The CRS shall provide weekly maps of artifacts if more than 50 artifacts are found per week, or as requested by the CPM. The map shall be submitted within two business days after the end of each week.

7. Within 15 days of receiving from a local Native American group a request that a NAM be employed, the project owner shall submit a copy of the request and a copy of a response letter to the group notifying them that a NAM has been employed and identifying the NAM.

8. While monitoring is on-going, the project owner shall submit monthly MCRs and accompanying weekly summary reports. The project owner shall attach any new DPR 523A forms, under confidential cover, completed for finds treated prescriptively, as specified in the CRMMP.

9. Final updated DPRs with sites (where artifacts are collected month after month) can be submitted at the completion of monitoring, as agreed upon with the CPM.

10. 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 email (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

11. 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 email (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.

12. 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 POWERS OF CRS / CULTURAL RESOURCES DISCOVERY PROTOCOLS

The CRS shall have the authority to halt ground disturbance in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event that a cultural resource over 50 years of age is found (or if, determined exceptionally significant by the CRS), or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity 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 shall additionally notify the CPM and the NAHC of the discovery of human remains. No action with respect to the disposition of human remains of Native American origin shall be initiated without direction from the CPM. Monitoring, including Native American monitoring, and daily reporting, as provided in other conditions, shall continue during the project's ground-disturbing activities elsewhere, while the halting or redirection of ground disturbance in the vicinity of the discovery shall remain in effect until the CRS has visited the discovery, and all 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 AM on Friday and 8:00 AM on Sunday morning, and has provided 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 Record" form. Unless the find can be treated prescriptively, as specified in the CRMMP, the "Description" entry of the DPR 523 "Primary Record" form shall include a recommendation on the CRHR/NRHP eligibility of the discovery. The project owner shall submit completed forms to the CPM.

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.

5. Ground disturbance may resume only with the approval of the CPM.

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 AM on Friday and 8:00 AM on Sunday morning.

2. 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.

3. 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, and the CRS must inform the CPM when the notifications are complete.

4. 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.

5. 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-8 FILL SOILS

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 provided to, and approved by, the CPM, the CRS shall survey the borrow 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, the project owner must either select another borrow or disposal site or implement **CUL-7** prior to any use of the site. 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.

2. 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.

HAZARDOUS MATERIALS MANAGEMENT

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix B, below, or in greater quantities or strengths than those identified by chemical name in Appendix B, below, unless approved in advance by the compliance project manager (CPM).

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, the Hazardous Materials Business Plan's list of hazardous materials and quantities contained at the facility.

HAZ-2 The project owner shall concurrently provide a Hazardous Materials Business Plan (HMBP), a Spill Prevention Control and Countermeasure Plan (SPCC), and a Risk Management Plan (RMP) to the Orange County Environmental Health Division (OCEHD) and the CPM for review. After receiving comments from the OCEHD and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Hazardous Materials Business Plan and RMP shall then be provided to the OCEHD 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 HMPB and SPCC 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 Certified Unified Program Agency (the Orange County Environmental Health Division) 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 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 hazardous material 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 either to the ASME Code for Unfired Pressure Vessels, Section VIII, Division 1 or to the API Standard 620. The storage tank shall be protected by a secondary containment that drains to an underground vault via (3) 1 square foot openings capable of holding precipitation from a 24-hour, 25-year storm event plus 100 percent of the capacity of the largest tank within its boundary. The storage tank shall have ammonia detectors positioned to detect an ammonia leak or loss of containment. The final design drawings and specifications for the ammonia storage tank, secondary containment basin, and underground vault shall be submitted to the CPM.

Verification: At least 30 days prior to 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, ammonia detectors around the ammonia storage tank, secondary containment basin, and underground vault to the CPM for review and approval.

HAZ-5 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles that meet or exceed the specifications of MC-307/DOT-407.

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 Prior to initial delivery, the project owner shall direct vendors delivering bulk quantities (>800 gallons per delivery) of hazardous material (e.g., aqueous ammonia, lubricating and insulating oils) to the site to use only the route approved by the CPM (from Interstate 5 or State Route 91, exiting on Beach Boulevard and traveling south to Katella Avenue, then east on Katella Avenue and turn left and head north on Dale Avenue to the Stanton entrance). The project owner shall obtain approval of the CPM if an alternate route is desired.

Verification: At least 60 days prior to initial receipt of bulk quantities (>800 gallons per delivery) of hazardous materials (e.g., aqueous ammonia, lubricating and insulating oils) and at least 10 days prior to a new vendor delivery of bulk quantities (>800 gallons per delivery), the project owner shall submit a copy of the letter containing the route restriction directions that were provided to the hazardous materials vendor to the CPM for review and approval.

HAZ-7 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the

CPM for review and approval. The Construction Site Security Plan shall include the following:

1. perimeter security consisting of fencing enclosing the construction area;

2. security guards during hours when construction personnel are not present at the site;

3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;

4. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;

5. protocol for contacting law enforcement and the CPM in the event of suspicious activity, incident or emergency; and,

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-8 The project owner shall also prepare a site-specific security plan for the commissioning and operational phases that would be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous materials storage. The level of security to be implemented shall not be less than that described below (as per NERC Security Guideline for the Electricity Sector: Physical Security v2.0).

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least eight feet high and topped with barbed wire or the equivalent (and with slats or other methods to restrict visibility if a fence is selected);

2. main entrance security gate, either hand operated or motorized;

3. evacuation procedures;

4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on site or off site;

    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 determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws 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 contractors who visit the project site;

6. site access controls for employees, contractors, vendors, and visitors;

7. a statement(s) (refer to sample, **Attachment C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;

8. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the remote power plant control room with cameras able to pan, tilt, and zoom, have low-light capability, and able to view 100 percent of the perimeter fence, the ammonia storage tank, the two outside entrances to the site; and,

9. additional measures to ensure adequate perimeter security consisting of either:

    A. perimeter breach detection or on-site motion detector capabilities; and

    B. security guard(s) present 24 hours per day, seven days per week; **or**

C. power plant personnel on site 24 hours per day, seven days per week; **or**

D. continuous remote monitoring 24 hours per day, seven days per week, with local duty personnel on-call 24 hours per day, seven days per week, and capable of coordinating emergency response actions with emergency personnel and of arriving on-site within 30 minutes or less.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical power plant components—transformers, gas lines, and compressors—depending upon 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 both appropriate law enforcement agencies and the project owner.

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 signed statements similar to Attachments A and B that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a signed statement similar to Attachment C that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZ-9: The project owner shall not allow any fuel gas pipe cleaning activities on site, 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 to atmosphere. Instead, an inherently safer method involving a non-flammable gas (e.g. air, nitrogen, steam) or mechanical pigging, shall be used as per the latest edition of NFPA 56, Standard for Fire and Explosion Prevention during Cleaning and Purging of Flammable Gas Piping Systems. A written procedure shall be developed and implemented as per NFPA 56, section 4.4.1.

Verification: At least 30 days before any fuel gas pipe cleaning activities begin, the project owner shall submit a copy of the Fuel Gas Pipe Cleaning Work Plan (as described in the 2014 NFPA 56, section 4.4.1) 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.

SAMPLE CERTIFICATION (Attachment A)

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for employment at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above- named project.

_____

(Signature of officer or agent)

Dated this_____day of_____, 20_____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for contract work at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above- named project.

_____

(Signature of officer or agent)

Dated this_____day of_____, 20_____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit) (Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this_____day of_____, 20_____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

Appendix B

Table 5.5-2. Chemical Inventory, Description of Hazardous Materials Stored Onsite, and Reportable Quantities

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite (gallons, lbs, cu ft)	CERCLA SARA RQ[a]	RQ of Material as Used Onsite[b]	EHS TPQ[c]	Regulated Substance TQ[d]	Prop 65
Aqueous ammonia NH3 (19 percent NH3 by weight)	Aqueous ammonia	7664-41-7	5,000 gallons[g]	100 lbs	526 lbs	500 lbs	500 lbs	No
Cleaning chemicals/detergents	Various	None	110 gallons	e	e	e	e	No
Hydraulic oil	Oil	None	190 gallons	42 gallons[f]	42 gallons[f]	e	e	No
Laboratory reagents	Various	Various	10 gallons	e	e	e	e	No
Synthetic lubricating oil	Oil	None	1,610 gallons	42 gallons[f]	42 gallons[f]	e	e	No
Mineral lubricating oil	Oil	None	3,000 gallons	42 gallons[f]	42 gallons[f]	e	e	No
Mineral insulating oil	Oil	8012-95-1	14,400 gallons	42 gallons[f]	42 gallons[f]	e	e	No
Sulfur hexafluoride	Sulfur hexafluoride	2551-62-4	45 lbs	e	e	e	e	No
Acetylene	Acetylene	47-86-2	600 cu ft	e	e	e	e	No
Oxygen	Oxygen	7782-44-7	600 cu ft	e	e	e	e	No
Propane	Propane	74-98-6	200 lbs	e	e	e	e	No
EPA Protocol gases	Various	Various	8,000 cu ft	e	e	e	e	No
Cleaning chemicals	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each chemical)	e	e	e	e	No

Trade Name	Chemical Name	CAS Number	Maximum Quantity Onsite (gallons, lbs, cu ft)	CERCLA SARA RQ[a]	RQ of Material as Used[b] Onsite	EHS[c] TPQ	Regulated Substance[d] TQ	Prop 65
Paint	Various	Various	Varies (less than 25 gallons liquids or 100 lbs solids for each type)	e	e	e	e	No
FM-200	FE-227	431-89-0	1,560 lbs	e	e	e	e	No
CO2	CO2	53569-62-3	24,500 cu ft	e	e	e	e	No
Lead-acid batteries (and/or nickel-cadmium batteries)	Lead-acid and/or nickel-cadmium batteries	Various	5,000 lbs	1,000	1,000	1,000	1,000	Yes
Lithium ion batteries	Lithium Ion Batteries	96-49-1 105-58-8	252 tons	e	e	e	e	No

[a] RQs for a pure chemical, per the CERCLA SARA (Ref. 40 CFR 302, Table 302.4). Release equal to or greater than RQ must be reported. Under California law, any amount that has a realistic potential to adversely affect the environment or human health or safety must be reported.

[b] RQ for materials as used onsite. Because some of the hazardous materials are mixtures that contain only a percentage of an RQ, the RQ of the mixture can be different than for a pure chemical. For example, if a material only contains 10 percent of a reportable chemical and the RQ is 100 lbs., the RQ for that material would be (100 lb)/(10 percent) = 1,000 lb.

[c] EHS TPQ (Ref. 40 CFR Part 355, Appendix A). If quantities of extremely hazardous materials equal to or greater than the TPQ are handled or stored, they must be registered with the local Administering Agency.

[d] TQ is from 19 CCR 2770.5 (state) or 40 CFR 68.130 (federal).

[e] No reporting requirement. Chemical has no listed threshold under this requirement.

[f] State Reporting Quantity (RQ) for oil spills that will reach California state waters (Ref. CA Water Code Section 13272(f)). [g] The NH_3 tank capacity is 5,000 gallons; however, the tank is only filled to 85 percent of its capacity, or 4,250 gallons. Notes: CCR = California Code of Regulations

CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act CFR = Code of Federal Regulations

EHS = Extremely Hazardous Substance

SARA = Superfund Amendments and Reauthorization Act

TQ = Threshold Quantity

NOISE AND VIBRATION

PUBLIC NOTIFICATION PROCESS

NOISE-1 Prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site and one-half mile of the linear facilities, by mail or by other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours a day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction where it is visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: At least 15 days prior to ground disturbance, the project owner shall transmit to the compliance project manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed, and describing the method of that notification. This communication shall also verify that the telephone number has been established and posted at the site, and shall provide that telephone number.

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and the full term of operation, including facility closure, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints[1]. The project owner or its authorized agent shall:

- use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to the noise complaint;

- attempt to contact the person(s) making the noise complaint within 24 hours;

[1] A project-related noise complaint is a complaint about noise that is caused by the Stanton project as opposed to another source, is documented by an individual or entity affected by such noise, and which may or may not constitute a violation by the project of any noise condition of certification.

- conduct an investigation to determine the source of noise in the complaint;

- if the noise is project related, take all feasible measures to reduce the source of the noise; and

- submit a report documenting the complaint and actions taken. The report shall include: a complaint summary, including the final results of noise reduction efforts and, if obtainable, a signed statement by the complainant that the noise problem has been resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file with the CPM a Noise Complaint Resolution Form, shown below, that documents the resolution of the complaint. If mitigation is required to resolve the complaint, and the complaint is not resolved within a three business-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

EMPLOYEE NOISE CONTROL PROGRAM

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high (above permissible) noise levels during construction in accordance with Title 8, California Code of Regulations, Sections 5095-5099, and Title 29, Code of Federal Regulations, Section 1910.95.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit the noise control program to the CPM. The project owner shall make the program available to Cal-OSHA upon request.

OPERATIONAL NOISE RESTRICTIONS AND SURVEY

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the noise levels due to the project operation alone do not exceed an hourly average exterior noise level of 49 dBA measured at monitoring location LT1 and 43 dBA measured at monitoring location LT2.

No new pure-tone components, as defined below, shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws project-related complaints.

Definition of a pure-tone component: A pure tone is defined as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

After commissioning and installation of the noise attenuation measures and when the project first achieves a sustained output of 85 percent or greater of its rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring locations LT1 and LT2 or at an alternative location acceptable to the CPM and include L_{eq} and L_{90} readings. This survey shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

The measurement of power plant noise for the purpose of demonstrating compliance with this condition of certification may alternatively be made at a location other than LT1 and LT2, acceptable to the CPM, 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 receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

If the results from the noise survey indicate that the power plant noise exceeds the above values at the above monitoring locations, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to reduce the pure tones to a level that does not exceed the pure tone requirements as defined above.

Verification: The above noise survey shall take place within 30 days of the project first achieving a sustained output of 85 percent or greater of its rated capacity and after commissioning and installation of the noise attenuation measures.

Within 15 days after completing the survey, the project owner shall submit a summary report to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When

these measures are implemented and 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.

OCCUPATIONAL NOISE SURVEY

NOISE-5 Following commissioning and installation of the noise attenuation measures and the project's attainment of a sustained output of 85 percent or greater of its rated capacity, the project owner shall conduct an occupational noise survey to identify any noise hazardous areas within the power plant.

The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, Sections 5095-5099 (Article 105) 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 to be employed in order to comply with the above regulations.

Verification: Within 30 days after completing each survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request from OSHA and Cal-OSHA.

CONSTRUCTION NOISE RESTRICTIONS

NOISE-6 Heavy equipment operation and noisy[2] work associated with the construction work relating to any project features onsite, including pile driving, shall be restricted to the times delineated below:

- Mondays through Saturday: 7:00 a.m. to 8:00 p.m.

Heavy equipment operation and noisy work associated with the construction work relating to installation of linear facilities shall be restricted to the times delineated below:

[2] Noise that draws a project-related complaint. For definition of a "project-related complaint", see the footnote in Condition of Certification **NOISE-2**.

Work within the cities of Stanton and Buena Park:

- Monday through Saturday: 7:00 a.m. to 8:00 p.m.

Activities taking place within a 500-foot radius of a residential area within the city of Anaheim:

- Monday through Saturday: 7:00 a.m. to 7:00 p.m.

Construction work shall be performed in a manner to ensure excessive noise (noise that draws a project-related complaint) is prohibited and the potential for noise complaints is reduced as much as practicable. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and other state-required noise attenuation devices. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use (jake braking) shall be limited to emergencies.

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 work associated with this project.

Construction equipment generating excessive noise shall be updated or replaced. Temporary acoustic barriers shall be installed around stationary construction noise sources if beneficial in reducing the noise. The project owner shall reorient construction equipment, and relocate construction staging areas, when possible, to minimize the noise impact to nearest noise-sensitive receptors.

PILE DRIVING MANAGEMENT

NOISE-7 The project owner shall perform impact sheet-pile driving in a manner to reduce the potential for any project-related noise and vibration complaints. The project owner shall notify the residents in the vicinity of impact sheet-pile driving prior to start of impact sheet-pile driving activities.

Verification: At least 15 days prior to first impact sheet-pile driving, the project owner shall submit to the CPM a description of the pile driving technique to be employed, including calculations showing its projected noise impacts at monitoring location LT1.

At least 10 days prior to first impact sheet-pile driving, the project owner shall notify the residents within one mile of the pile driving. In this notification, the project owner shall state that it will perform this activity in a manner to reduce the potential for any project-

related noise and vibration complaints as much as practicable. The project owner shall submit a copy of this notification to the CPM prior to the start of pile driving.

NOISE COMPLAINT RESOLUTION FORM

Stanton Energy Reliability Center

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)

SOCIOECONOMICS

SOCIO-1 The project owner shall pay the current one-time statutory school facility development fee to the Magnolia Elementary School District and to the Anaheim Union High School District as authorized by Education Code Section 17620 and the Magnolia Elementary School District Board Policy BP 7211 Facilities: Developer Fees.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide to the compliance project manager (CPM) proof that the delegate chief building official (DCBO) has calculated the assessable covered and enclosed space consistent with local practices and shall provide proof of payment of the development fees, based on the calculated space and current school development fees, to the Magnolia Elementary School District and to the Anaheim Union High School District.

SOIL AND WATER RESOURCES

NPDES CONSTRUCTION PERMIT REQUIREMENTS

SOIL&WATER-1 The project owner shall manage storm water pollution from project construction activities by fulfilling the requirements contained in State Water Resources Control Board's *National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2009-0009-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: At least thirty (30) days prior to site mobilization, the project owner shall submit to the CPM proof that the construction permit was granted and that a waste discharge identification number (WDID) was issued by the State Water Resources Control Board (SWRCB). Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the project owner and the SWRCB or the Santa Ana Regional Water Quality Control Board (SARWQCB) about the general NPDES permit for discharge of storm water associated with this activity. This information shall include the notice of intent, the notice of termination, and any updates to the construction SWPPP.

STORM WATER MANAGEMENT PLAN

SOIL&WATER-2 The project owner shall comply with the Orange County Model Water Quality Management Plan (WQMP) requirements in accordance with Title 4, Division 13 and Title 9, Division 1, of the Orange County Code. The project owner shall provide a WQMP for post-construction storm water BMPs to Orange County for review and the CPM for review and approval. The project owner shall also pay necessary fees for compliance with the WQMP provisions of the Orange County Code. The project owner shall notify the CPM in writing of any reported non-compliance with the county requirements, including documentation of any measures taken to correct the non-compliance, and the results of those corrective measures. It is the Energy Commission's intent that these requirements be enforceable by both the Energy Commission and Orange County. Accordingly, the Commission and Orange County shall confer with each other and coordinate, as needed, in enforcement of the requirements.

Verification: At least 120 days prior to site grading, the project owner shall provide a WQMP for post-construction storm water BMPs to the CPM and to the Orange County Public Works Department. At least thirty days prior to Stanton grading activities, the project owner shall submit to the CPM verification of the county's completed review of the WQMP or a copy of correspondence indicating they will not be reviewing the submittal. Within ten (10) days of its mailing or receipt, the project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the county regarding storm water management.

HYDROSTATIC AND DEWATERING WATER DISCHARGE PERMIT REQUIREMENTS

SOIL&WATER-3 Prior to initiation of discharge to surface water from hydrostatic testing water or groundwater from dewatering, the project owner shall obtain a National Pollutant Discharge Elimination System permit for discharge when applicable. The project owner shall comply with the requirements of the NPDES Permit Order No. CAG998001 for hydrostatic testing and dewatering (if applicable) water discharge. The project owner shall provide a copy of all permit documentation sent to the Santa Ana Regional Water Quality Control Board (SARWQCB) or State Water Resources Control Board (SWRCB) to the CPM and notify the CPM in writing of any reported non-compliance.

Verification: At least thirty (30) days prior to the first scheduled hydrostatic testing event or discharge of groundwater dewatering water, the project owner shall submit to the CPM documentation that all necessary NPDES permits were obtained from the SARWQCB or SWRCB. At least thirty days (30) prior to project construction, the project owner shall submit to the CPM a copy of the relevant plans and permits received. The project owner shall submit to the CPM all copies of any relevant correspondence between the project owner and the SWRCB regarding NPDES permits in the annual compliance report.

WATER USE AND REPORTING

SOIL&WATER-4 Water supply for project construction and operation shall be potable water supplied by Golden State Water Company. Project water use for construction shall not exceed 5.6 acre-feet. Project operation water use shall not exceed 34 AFY. The project owner shall record daily water use for the project's construction and operation. The project owner shall comply with the water use limits and reporting requirements described below.

Verification: During project construction, the monthly compliance report shall include a summary of monthly water use. After construction is complete, the project's annual compliance report shall include a monthly and annual summary of water use.

WATER METERING

SOIL&WATER-5 The project owner shall comply with and pay all necessary fees for connection to Golden State Water Company supply system. Prior to the use of water during commercial operation, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volume(s) of water supplied from Golden State Water Company. Those metering devices shall be operational for the life of the project.

Verification: At least thirty (30) days prior to use of the Golden State Water Company potable water supply, the project owner shall submit to the CPM evidence that they have complied with all requirements and paid the necessary fees for connection. At least thirty (30) days prior to use of water, the project owner shall also provide evidence that metering devices have been installed and are operational. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices in the annual compliance report. Fees paid to Golden State Water Company shall be reported in the Annual Compliance Report (ACR) for the life of the project.

SEWER CONNECTIONS

SOIL&WATER-6 The project owner shall comply with and pay the city of Stanton all fees normally associated with connections to the city's sanitary sewer system for process and sanitary wastewater as defined in the city's code, Title 14 Water and Sewers.

Verification: Prior to the use of the city's sewer system the project owner shall provide the CPM documentation indicating that the city has accepted the project's connections to the sewer system. Fees paid to the city shall be reported in the Annual Compliance Report (ACR) for the life of the project. The ACR shall also include a monthly and annual summary of wastewater discharge.

FRAC-OUT PLAN FOR NATURAL GAS LINE CONSTRUCTION

SOIL&WATER-7 Prior to the initiation of any Carbon Creek jack and bore activities for the natural gas pipeline, the project owner shall apply for coverage under the following permits:

A. Section 401 water quality certification or a waiver of waste discharge requirements from the Santa Ana Regional Water Control Board or the State Water Resources Control Board;

B. Section 404 acceptance of preconstruction notification for nationwide permit(s) from the US Army Corps of Engineers;

C. Section 408 permit from the US Army Corps of Engineers; and

D. Streambed Alteration Agreement(s), developed in consultation with the California Department of Fish and Wildlife.

Modifications of the construction techniques to be used or the location of the crossing that are made as a result of permit conditions shall be reviewed by the CPM. The project owner shall implement the terms and conditions contained in all permits.

Verification: At least thirty (30) days prior to any construction-related activities that could affect water quality in Carbon Creek, the project owner shall provide the CPM with copies of the applicable permits or agreements.

BRIDGES ENCROACHMENT PERMIT

SOIL&WATER-8 The project owner shall obtain an encroachment permit for the construction of the vehicle and utility bridges from the Orange County Public Works Department in accordance with Orange County Code – Title 9, Division 2, Article 2, Sections 9-2-40 and 9-2-50. The project owner shall pay all necessary fees to Orange County Public Works Department for compliance with the permit review and approval process. The project owner shall submit the encroachment permit application package to Orange County Public Works Department and the CPM for review and approval prior to bridge construction. The project owner shall also provide a copy of the approved permit to the CPM.

Verification: At least ninety (90) days prior to bridge construction, the project owner shall provide a copy of the application package for the encroachment permit and any comments from Orange County Public Works Department to the CPM for review and approval. At least thirty (30) days prior to bridge construction, the project owner shall submit a copy of the final approved permit from Orange County Public Works Department to the CPM for review and approval.

TRAFFIC AND TRANSPORTATION

TRANS-1 ROADWAY USE PERMITS AND REGULATIONS

The project owner shall comply with limitations imposed by the Department of Transportation (Caltrans) and other relevant jurisdictions, including the cities of Stanton, Anaheim, Buena Park, Garden Grove, and Westminster, and the county of Orange, on vehicle sizes and weights, driver licensing, and truck routes.

Verification: In the Monthly Compliance Reports (MCRs), the project owner shall identify the permits received during that reporting period (copies of actual permits are not required in the MCR) to demonstrate project compliance with limitations of relevant jurisdictions for vehicle sizes, weights, driver licensing, and truck routes. The project owner shall retain copies of permits and supporting documentation on-site for compliance project manager (CPM) inspection if requested.

TRANS-2 TRAFFIC CONTROL PLAN

Prior to the start of construction, the project owner shall prepare a Traffic Control Plan (TCP) for the project's construction traffic. The TCP shall address the movement of workers, vehicles, and materials, including arrival and departure schedules and designated workforce and delivery routes.

The project owner shall consult with the city of Stanton in the preparation and implementation of the TCP. The project owner shall submit the proposed TCP to the city in sufficient time for review and comment, and to the CPM for review and approval prior to the proposed start of construction and implementation of the plan.

The TCP shall include:

- Routes used for construction-related trips for workers, deliveries, and heavy haul trucks, with heavy haul trucks using truck routes wherever possible;

- Any alternate routes used for non-bulk hazardous materials delivery, including the Beach Boulevard to Cerritos Avenue to Fern Avenue route that would allow the project owner to make deliveries more easily to the rear of the project site;

- Parking/Staging Plan (PSP) for project construction and operation. The PSP must comply with the city of Stanton's parking regulations;

- Placement of necessary signage, lighting, and traffic control devices at the project construction site, including locations of linear facilities construction, and the worker parking site;

- Means of access for emergency vehicles to the project site;

- Location and details of construction along affected roadways at night where permitted;

- Means of maintaining access to adjacent residential and commercial property during the construction of linear facilities in or near the right-of-way;

- Details regarding temporary closure of travel lanes or disruptions to street segments and intersections during construction activities;

- Plan for advance notification to residents, businesses, emergency providers, and hospitals that would be affected when roads may be partially or completely closed.

Verification: At least 60 calendar days prior to the start of construction, the project owner shall submit the TCP to the city of Stanton 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 Stanton requesting review and comment.

At least 30 calendar days prior to the start of construction, the project owner shall provide copies of any comment letters received from the city of Stanton or any other interested agencies, along with any changes to the TCP, for CPM review and approval. After CPM review and approval, the project owner shall provide completed copies of the final TCP to the city of Stanton and any other interested agencies, sending copies of the correspondence to the CPM.

TRANS-3 RESTORATION OF ALL PUBLIC ROADS, EASEMENTS, AND RIGHTS-OF-WAY

The project owner shall restore all public roads, easements, rights-of-way, and any other transportation infrastructure damaged due to project-related construction and traffic. Restoration shall be completed in a timely manner to the infrastructure's original condition. Restoration of significant damage which could cause hazards (such as potholes, deterioration of pavement edges, or

damaged signage) shall take place immediately after the damage has occurred.

Prior to the start of site mobilization, the project owner shall notify the relevant agencies, including the city of Stanton, county of Orange, Caltrans District 12, and any jurisdictions affected by construction of the linear facilities, of the proposed schedule for project construction. The purpose of this notification is to request that these agencies consider postponement of any planned public right-of-way repairs or improvement activities in areas affected by project construction until construction is completed, and to coordinate any concurrent activities that cannot be postponed.

Verification: Prior to the start of site mobilization, the project owner shall videotape roads and intersections along the major routes construction vehicles would take in the vicinity of the project site. The project owner shall provide the videotapes or other recorded visual media to the CPM.

If damage to any public road, easement, or right-of-way occurs during construction, the project owner shall notify the CPM and the affected agency/agencies to identify the sections to be repaired. At that time, the project owner and CPM shall establish a schedule for completion of the repairs with which the project owner must comply, unless approval for a schedule change is provided by the CPM. Following completion of any repairs, the project owner shall provide the CPM with letters signed by the affected agency/agencies stating their satisfaction with the repairs.

TRANS-4 ENCROACHMENT INTO PUBLIC RIGHTS-OF-WAY

Prior to any ground disturbance, improvements, or obstruction of traffic within any public road, easement, or right-of-way, the project owner shall coordinate with all applicable jurisdictions, including the city of Stanton, to obtain necessary encroachment permits and comply with all applicable regulations, including applicable road standards.

Verification: At least 10 days prior to ground disturbance, improvements, or interruption of traffic in or along any public road, easement, or right-of-way, the project owner shall provide copies to the CPM of all permits received from any affected jurisdictions. In addition, the project owner shall retain copies of the issued permits and supporting documentation in its compliance file for a minimum of 180 calendar days after the start of commercial operation.

TRANS-5 TRANSPORTATION OF HAZARDOUS MATERIALS

The project owner shall contract with licensed hazardous materials delivery and waste hauler companies for the transportation of hazardous materials and wastes. The project owner shall ensure compliance with all applicable regulations and implementation of the proper procedures.

Verification: In the MCRs during construction and the Annual Reports during operation, the owner shall provide the names of the contracted hazardous materials delivery and waste hauler companies used, as well as licensing verification. Licensing verification only needs to be included in the MCRs when a new company is used. If a company's licensing verification has already been submitted in an MCR, it is not necessary to submit it again. Licensing verification must be included in all Annual Reports, even if the company has already been used.

TRANS-6 RAIL CROSSING SAFETY PLAN

Prior to any construction-related ground disturbance, the project owner shall develop and implement a rail crossing safety plan for construction that addresses construction-related pedestrian activity (including workers walking between the parking area and the site or working at the site), construction vehicles, and heavy/oversize loads.

Verification: At least 60 calendar days prior to the start of construction-related ground disturbance, the project owner shall submit the rail crossing safety plan to the city of Stanton and Union Pacific Railroad (UPRR) 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 letters to the city of Stanton and UPRR requesting review and comment.

At least 30 calendar days prior to the start of construction-related ground disturbance, the project owner shall provide copies of any comment letters received from the city of Stanton and UPRR, along with any changes to the rail crossing safety plan, for CPM review and approval. After CPM review and approval, the project owner shall provide completed copies of the final rail crossing safety plan to the city of Stanton and UPRR, sending copies of the correspondence to the CPM.

TRANS-7 FAA NOTIFICATION FOR CONSTRUCTION EQUIPMENT AT OR EXCEEDING 153 FEET AGL

The project owner or its contractor(s) shall file Federal Aviation Administration (FAA) Form 7460-1, Notice of Proposed Construction or Alteration, with the

FAA for any construction equipment 153 feet above ground level (AGL) or taller. The project owner shall comply with any conditions imposed by the FAA as part of their hazard determination, such as marking and lighting requirements.

Verification: At least 30 days prior to the presence onsite of any construction equipment 153 feet AGL or taller, the project owner shall submit to the CPM a copy of the FAA's hazard determination.

TRANS-8 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:

1. 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. The letter shall also request that the NOTAM be maintained in active status until the applicable navigational charts and Chart Supplements (formerly called the Airport Facility Directory) have been updated.

2. 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.

3. Submit a request to the Los Alamitos Army Airfield (LAAA) Manager and Fullerton Municipal Airport (FMA) Manager to add new remarks to the Automatic Terminal Information Service (ATIS) and to the Chart Supplements for LAAA and FMA. The remarks shall identify the location of the power plant and advise pilots to avoid direct overflight as they approach or depart the airports.

Verification: Within 60 days following the start of construction, the project owner shall submit to the CPM for review and approval draft language for the letters of request to the FAA, the LAAA Manager, and the FMA Manager. The letters should request a response within 30 days that includes a timeline for implementing the required actions.

Within 60 days after CPM approval of the draft language, the project owner shall submit the required letters of request to the FAA, the LAAA Manager, and the FMA Manager. 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. If the

FAA, the LAAA Manager, or the FMA Manager does not respond within 30 days, the project owner shall contact the CPM.

TRANSMISSION LINE SAFETY AND NUISANCE

TLSN-1 The project owner shall construct the proposed 66-kV underground transmission line according to the requirements of California Public Utility Commission's GO-128, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, sections 2700 through 2974 of the California Code of Regulations, and Southern California Edison's EMF reduction guidelines.

Verification: At least 30 days prior to start of 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 line will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall ensure that all permanent metallic objects within the proposed route are grounded according to industry standards.

Verification: At least 30 days before the line is energized, the project owner shall submit to the compliance project manager (CPM) a letter signed by a California registered electrical engineer affirming compliance with this condition.

VISUAL RESOURCES

SURFACE TREATMENT OF PROJECT STRUCTURES

VIS-1 The project owner shall treat the surfaces of all project structures and buildings visible to the public such that a) their colors minimize visual intrusion and contrast by blending with the landscape; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

Surface color treatment shall include painting and finish of the gas turbine facility enclosures and all other visible major power plant features, as well as all transmission line monopoles, in the colors and finishes outlined in Table 5.13-2 of the Stanton project Application for Certification (SERC 2016a). The project owner shall submit for CPM review and approval, a specific surface treatment plan that would satisfy these requirements. The treatment plan shall include:

1. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

2. A list of each major project structure, building, tank, pipe, and wall; the transmission line structures; 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;

3. One set of color brochures or color chips showing each proposed color and finish;

4. One set of 11” x 17” color photo simulations at life-size scale when the picture is held 10 inches from the viewer's eyes, of the treatment proposed for use on project structures, including structures treated during manufacture, from Key Observation Points (KOP) 1 and 2

5. A specific schedule for completion of the treatment; and

6. A procedure to ensure proper treatment maintenance for the life of the project.

Protocol: The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

Verification: At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the city of Stanton for review and comment.

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 treatment plan must be submitted to the CPM for review and approval.

Prior to 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 same key observation points identified in (d) above.

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.

SCREENING LANDSCAPE PLAN

VIS-2 The project owner shall also submit to the CPM for review and approval, and simultaneously to the city of Stanton for review and comment, a detailed landscape plan and irrigation plan for the power plant site in fulfillment of requirements of applicable laws, ordinances, regulations, and standards, including water efficiency irrigation standards as required by the city of Stanton.

Protocol: The plans shall provide a detailed installation schedule demonstrating installation of as much of the landscaping as early in the construction process as is feasible in coordination with project construction.

A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, suitable native and non-invasive plant species, and local availability of proposed species. expected time to maturity, expected size at five years and at maturity, spacing, number, availability, and a discussion of the suitability of the plants for the site conditions and mitigation objectives, with the objective of providing the widest possible range of species from which to choose;

Maintenance procedures, including a plan for routine annual or semi-annual debris removal for the life of the project, if applicable;

The plans shall demonstrate compliance with applicable city of Stanton irrigation requirements;

A procedure for monitoring for, and replacement of, unsuccessful plantings for the life of the project; and

Digital photo-simulations of the proposed landscaping at five years and 20 years after planting, as viewed from the foreground of Dale Road (KOP 1) of the right-of-way; and of the power plant site viewed from Pacific Street (KOP 3).

The plan shall not be implemented until the project owner receives final approval from the CPM.

Verification: The landscaping plans and irrigation plans shall be developed and submitted at the earliest feasible time during or prior to construction. The landscaping plans and irrigation plans shall be submitted to the CPM for review and approval and simultaneously to the city of Stanton for review and comment at least 90 days prior to installation.

If the CPM determines that the plans require revision, the project owner shall provide to the CPM and simultaneously to the city of Stanton a revised plan for review and approval by the CPM.

The planting must occur during the first optimal planting season following completion of site construction. The project owner shall simultaneously notify the CPM and the city of Stanton within seven days after completing installation of the landscaping, that the landscaping 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. The CPM shall have authority to require replacement planting of dead or dying vegetation through the life of the project.

SITE LIGHTING – PROJECT CONSTRUCTION AND COMMISSIONING

VIS-3 Consistent with applicable worker safety regulations, the project owner shall ensure that lighting of on-site construction areas, and construction worker parking lots, minimizes potential night lighting impacts by implementing the following measures:

A. All fixed-position lighting shall be hooded and shielded to direct light downward and toward the construction area to be illuminated to prevent illumination of the night sky and minimize light trespass (i.e., direct light extending beyond the boundaries of the parking lots and construction sites, including any security-related boundaries).

B. Lighting of any tall construction equipment (e.g., scaffolding, derrick cranes, etc.) shall be directed toward areas requiring illumination and shielded to the maximum extent practicable.

C. Task-specific lighting shall be used to the maximum extent practicable.

D. Wherever and whenever feasible, lighting shall be kept off when not in use and motion sensors shall be installed and used to the maximum extent practicable.

E. The CPM shall be notified of any construction-related lighting complaints. Complaints shall be documented using a form in the format shown in Attachment 1, and completed forms shall record resolution of each complaint. A copy of each completed complaint form shall be provided to the CPM. Records of lighting complaints shall also be kept in the compliance file at the project site.

Verification: Within seven calendar 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 determines that modifications to the lighting are needed for any construction milestone, within 14 calendar days of receiving that notification, the project owner shall correct the lighting and notify the CPM that modifications have been completed. Within 48 hours of receiving a lighting complaint for any construction activity, the project owner shall provide to the CPM a copy of the complaint report and resolution form, including a schedule for implementing corrective measures to resolve the complaint. The project owner shall report any lighting complaints and document their resolution in the monthly

compliance report for the project, accompanied by copies of completed complaint report and resolution forms for that month.

LIGHTING MANAGEMENT PLAN – PROJECT OPERATION

VIS-4 The project owner shall prepare and implement a comprehensive Lighting Management Plan. The comprehensive Lighting Management Plan shall be submitted to the CPM, and the Planning Director of the city of Stanton for simultaneous review and comment. Any comments on the plan from the city shall be provided to the CPM. The project owner shall not purchase or order any lighting fixtures or apparatus until written approval of the final plan is received from the CPM. Modifications to the Lighting Management Plan are prohibited without the CPM's approval.

Consistent with applicable worker safety regulations, the project owner shall design, install, and maintain all permanent exterior lighting such that light sources are not directly visible from areas beyond the project site, glare is avoided, and night lighting impacts are minimized or avoided to the maximum extent feasible. All lighting fixtures shall be selected to achieve high energy efficiency for the facility.

1) The Lighting Management Plan shall meet the following requirements:

   A. The Lighting Management Plan shall include three printed sets of full size plans (24" x 36", minimum), three sets of 11" x 17" reductions,

   B. A digital copy in PDF format.

   C. The Lighting Management Plan shall be prepared with the direct involvement of a certified lighting professional trained to integrate efficient technologies and designs into lighting systems.

2) The project owner shall meet, and the Lighting Management Plan shall demonstrate, the following requirements for permanent lighting:

   A. Exterior lights shall be hooded and shielded and directed downward or toward the area to be illuminated to prevent obtrusive spill light (i.e., light trespass) beyond the project site.

   B. Exterior lighting shall be designed to minimize backscatter to the night sky to the maximum extent feasible.

C. Exterior lighting shall utilize fully-shielded luminaires, and conform generally to International Dark-Sky Association recommendations for lighting zone LZ1.

D. Energy efficient lighting products and systems shall be used for all permanent new lighting installations. Smart bi-level exterior lighting using high efficiency directional LED fixtures shall be used as appropriate for exterior installations. The lighting system shall work in conjunction with occupancy sensors, photo sensors, wireless controls, and/or other scheduling or controls technologies to provide adequate light for security and maximize energy savings.

E. Lighting fixtures shall be kept in good working order and continuously maintained according to the original design standards.

F. Lighting shall be consistent with all applicable laws, ordinances, regulations, and standards.

G. The CPM shall be notified of any complaints about permanent lighting at the project site. Complaints shall be documented using the Lighting Complaint Resolution Form shown in **Attachment-1**, and completed forms shall record resolution of each complaint. A copy of each completed complaint form shall be provided to the CPM. Records of lighting complaints shall also be kept in the compliance file at the project site.

Verification: At least 90 calendar days before ordering any permanent lighting equipment for the project, the project owner shall submit the comprehensive Lighting Management Plan simultaneously to the Planning Director of the city of Stanton for review and comment and the CPM for review and approval. The project owner shall provide the CPM with a copy of the transmittal letters submitted to the city requesting their review of the Lighting Management Plan. The CPM shall deem the Lighting Management Plan acceptable to the city of Stanton if comments are not provided to the CPM within 45 calendar days of receipt of said plan.

If the CPM determines that the plan requires revision, the project owner shall provide a plan with the specified revision(s) for review and approval by the CPM. A courtesy copy of the revised plan shall be provided to the Planning Director of the city of Stanton for review and comment and the CPM from review and approval. No work to implement the plan (e.g., purchasing of fixtures) shall begin until final plan approval is received from the CPM.

Prior to the start of commercial operation of the project, the project owner shall notify the CPM that installation of permanent lighting for the project has been completed and that the lighting is ready for inspection. If the CPM notifies the project owner that modifications to the lighting system are required, within 30 days of receiving that notification, the project owner shall implement all specified changes and notify the CPM that the modified lighting system(s) is ready for inspection.

Within 48 hours of receiving a complaint about permanent project lighting, the project owner shall provide to the CPM a copy of the complaint report and resolution form, including a schedule for implementing corrective measures to resolve the complaint.

The project owner shall report any complaints about permanent lighting and document their resolution in the Annual Compliance Report for the project, accompanied by copies of completed complaint report and resolution forms for that year. 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 installation of the lighting has been completed 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.

Lighting Complaint Resolution Form
Facility Name: Stanton Energy Reliability Center Complaint Log No:
Complainant's name and address: Phone No: Complainant's Email address:
Date and time complaint received: Complaint filed: ☐By Telephone ☐In Writing (attach letter) ☐In Person Date of first occurrence:
Description of the complaint (lighting, duration, etc.):
Findings of investigation by SERC personnel: Indicate if complaint relates to a violation of an Energy Commission condition: ☐Yes ☐No Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: In not, explain: Additional relevant information:
If corrective action necessary, date completed: Date of first response to complainant: (attach copy) Date of final response to complainant: (attach copy)
This information is certified to be correct: Plant or project manager's signature: Date:

WASTE MANAGEMENT

WASTE-1 The project owner shall prepare and submit to the compliance project manager (CPM) a Soils Management Plan (SMP) prior to any earthwork. The SMP shall be prepared by a California Registered Geologist or a California Registered Civil Engineer with sufficient experience in hazardous waste management. The SMP shall be updated as needed to reflect changes in laws, regulations or site conditions. All earthwork at the site shall be conducted in accordance with the SMP. Where actions are required in accordance with the SMP, an SMP summary report, which includes all analytical data and other findings, shall be submitted once the earthwork has been completed. Topics covered by the SMP shall include, but not be limited to:

1. Land use history including description and locations of any known contamination.

2. The nature and extent of any previous investigations and remediation at the site.

3. The nature and extent of any unremediated contamination at the proposed site.

4. A listing and description of institutional controls such as the county's excavation ordinance and other local, state, and federal regulations and laws that would apply to the project.

5. Names and positions of individuals involved with soils management and their specific roles.

6. An earthwork schedule.

7. A description of protocols for the investigation and evaluation of any previously unidentified contamination that may be encountered in time. The protocol shall be for temporary and permanent controls that may be required to reduce exposure to on-site workers, visitors, and the public.

8. A site-specific Health and Safety Plan (HSP) to be implemented by all contractors at the site. The HSP shall be prepared by a Certified Industrial Hygienist and would protect on-site workers by including engineering controls, personal protective equipment, monitoring, and security to prevent unauthorized entry and to reduce construction related hazards.

The HSP shall address the possibility of encountering subsurface chemical contamination and include procedures to protect workers and the public.

9. Hazardous waste determination and disposal procedures for known and previously unidentified contamination.

10. Requirements for site-specific techniques at the site to minimize dust, manage stockpiles, run-on and run-off controls, waste disposal procedures, etc.

11. Copies of relevant permits or closures from regulatory agencies.

Verification: At least 45 days prior to any earthwork, the project owner shall submit the SMP to the CPM for review and approval. An SMP summary shall be submitted to the CPM within 25 days of completion of any earthwork.

WASTE-2 The project owner shall provide the resume of an experienced and qualified professional engineer or professional geologist, who shall be available for consultation during site characterization (if needed), demolition, excavation, and grading activities, to the CPM for review and approval. The resume shall reflect experience in remedial investigation and feasibility studies.

The professional engineer or professional geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

WASTE-3 If seemingly contaminated soil is identified during site characterization, demolition, excavation, or grading at either the proposed site or linear facilities (as evidenced by discoloration, odor, detection by handheld instruments, or other signs), the professional engineer or 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 Department of Toxic Substances Control, 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. If, in the opinion of the professional engineer or professional

geologist, significant remediation may be required, the project owner shall contact the CPM and representatives of the Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any final 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-4 The project owner shall prepare a Construction and Demolition (C & D) Environmental Resources Management and Recycling Plan for demolition and construction wastes generated and shall submit a copy of the plan to the Orange County's Public Works/Planning Department for review, and to the CPM for review and approval. The plan shall include at a minimum, the following information:

1. a description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications;

2. 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 plan; a method for collecting weigh tickets or other methods for verifying the volume of transported and location of waste disposal; and,

3. a method for reporting to demonstrate project compliance with construction waste diversion requirements of 65% pursuant to the Cal Green Code and Orange County's Construction & Demolition Program.

Verification: The project owner shall submit the C & D Environmental Resources Management and Recycling Plan to Orange County's Public Works Department for review and comment and the CPM for review and approval, no less than 30 days prior to the initiation of demolition activities at the site.

The project owner shall also document in each monthly compliance report (MCR) 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 Construction and Demolition Waste

Management Plan; and update the Construction and Demolition Waste Management Plan as necessary to address current waste generation and management practices.

WASTE-5 Prior to demolition of pipelines, buildings, and associated structures, the project owner shall survey for asbestos-containing material (ACM) and notify the CPM of the results. In the case of a need to remove such material, the project owner shall complete and submit a copy of a South Coast Air Quality Management District Notification of Demolition or Renovation Form to the CPM as related to asbestos and other materials.

Verification: No less than 60 days prior to commencement of structure demolition, the project owner shall provide the Notification of Demolition or Renovation Form to the CPM for review. In the case of asbestos removal, the project owner shall inform the CPM, via the Monthly Compliance Report of the date when all ACM is removed from the site.

WASTE-6 The project owner shall report new or temporary hazardous waste generator identification numbers from the United States Environmental Protection Agency prior to generating any hazardous waste during demolition, construction, or operations.

Verification: The project owner shall keep a copy of the identification number(s) on file at the project site and provide documentation of the hazardous waste generation and notification and receipt of the number to the CPM in the next scheduled Monthly Compliance Report after receipt of the number. Submittal of the notification and issued number documentation to the CPM is only needed once, unless there is a change in ownership, operation, waste generation, or waste characteristics that requires a new notification to USEPA. Documentation of any new or revised hazardous waste generation notifications or changes in identification number shall be provided to the CPM in the next scheduled compliance report.

WASTE-7 Upon becoming aware 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 to be taken, against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within ten days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the way project-related wastes are managed.

WASTE-8 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 include, at a minimum, the following:

1. a detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;

2. 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;

3. information and summary records of conversations with the local Certified Unified Program Agency and the Department of Toxic Substances Control regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notifications of enforcement actions, and/or authorizations shall be included in the plan and updated as necessary;

4. 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

5. A detailed description of how facility wastes will be managed and disposed 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-9 The project owner shall ensure that all spills or releases of hazardous substances, materials, or waste are reported, cleaned up, and remediated as necessary, in accordance with all applicable federal, state, and local requirements.

Verification: The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. 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. Copies of the unauthorized spill documentation shall be provided to the CPM within 48 hours of the date the release was discovered.

WASTE-10 Prior to transportation of soils for disposal at the Olinda Alpha Landfill, the project owner shall obtain approval to dispose of soils at the Olinda Alpha Landfill from Orange County Waste and Recycling.

Verification: At least 30 days prior to transportation of soils for disposal to the Olinda Alpha Landfill, the project owner shall submit a Soils Information Form to Orange County Waste and Recycling and the CPM.

At least 5 days prior to transportation of soils for disposal to the Olinda Alpha Landfill, the project owner shall submit to the CPM Orange County Waste and Recycling's correspondence documenting its ability to accept the soils for disposal.

WORKER SAFETY AND FIRE PROTECTION

WORKER SAFETY-1 The project owner shall submit to the compliance project manager (CPM) a copy of the Project Construction Health and Safety Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- 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 Orange County Fire Authority 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 and Safety and Health Program. The project owner shall provide to the CPM a copy of a letter from the Orange County Fire Authority stating the fire department's comments on the Construction Fire Prevention Plan and the 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 items:

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- a Hazardous Materials Management Program;
- a Fire Prevention Plan (Cal Code Regs., tit. 8, § 3221);
- a Fire Protection System Impairment Program; and

- a Personal Protective Equipment Program (Cal Code Regs, tit.8, §§ 3401—3411).

The Operation Injury and Illness Prevention Plan, Hazardous Materials Management Program, Emergency Action Plan, Fire Prevention Plan, Fire Protection System Impairment Program, and Personal Protective Equipment Program shall be submitted to the CPM for review and approval concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan, Fire Protection System Impairment Program, and the Emergency Action Plan shall also be submitted to the Orange County Fire Authority 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 to the CPM of a letter from the Orange County Fire Authority stating the fire department's timely comments on the Operations Fire Prevention Plan, Fire Protection System Impairment Program, and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant worker safety-related 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 overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;

- ensure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;

- ensure that all construction and commissioning workers and supervisors receive adequate safety training;

- conduct accident and safety-related incident investigations and provide emergency response reports for injuries, and inform the CPM of safety-related incidents; and

- ensure that all the plans identified in Conditions of Certification **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:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);

- summary report of safety management actions and safety-related incidents that occurred during the month;

- report of any continuing or unresolved situations and incidents that may pose danger to life or health;

- report of any visits from Cal/OSHA and/or any complaints from workers to Cal/OSHA; and

- report of accidents, injuries, and near misses that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Delegate Chief Building Official (DCBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the DCBO. Those services shall be in addition to other work performed by the DCBO. The Safety Monitor shall be selected from an independent company not affiliated with the DCBO and report directly to the DCBO and will be responsible for verifying that the Construction Safety Supervisor, as required in Condition of Certification **WORKER SAFETY-3**, implements all appropriate Cal/OSHA and Energy 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 60 days prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall 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, commissioning, and demolition, 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 on site shall be trained in its use. The training program shall be submitted to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM proof that a portable automatic external defibrillator (AED) is available to be made available on site as soon as physically possible along with a copy of the training and maintenance program for review and approval.

WORKER SAFETY-6 The project owner shall prepare an Emergency Access Plan that shows a secondary emergency access to the Stanton site where the specifications of the roadway will comply with the Stanton Municipal Code and the 2016 (or latest edition) California Fire Code. A secondary access must be maintained to the standards listed above for the life of the project.

Verification: At least 60 days prior to the start of construction, or within a time frame approved by the CPM, the project owner shall submit the Emergency Access Plan showing the secondary emergency access to the Orange County Fire Authority for review and timely comment, and to the CPM for review and approval. If a change to the secondary access is proposed by the project owner, 90 days before it would occur, the project owner must submit the proposed change, with an updated Emergency Access Plan that shows the new proposed location/arrangement for the secondary emergency access road, to the Orange County Fire Authority for review and timely comment, and to CPM for review and approval.

WORKER SAFETY-7 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 state or local LORS have application, the more restrictive shall apply.

Verification: The project owner shall ensure that the project adheres to all applicable provisions of NFPA 850. 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 Orange County Fire Authority for review and comment, to the CPM for review and approval, and to the DCBO for plan check approval and construction inspection.

WORKER SAFETY-8 The project owner shall ensure that the lithium ion battery energy storage system has UL 9540: UL Standard for Safety for Energy Storage Systems and Equipment certification. The project owner shall submit the certification along with the fire protection drawings and specifications for the ESS to the Orange County Fire Authority for review and comment and to the CPM for review and approval. The project owner shall also collaborate with the Orange County Fire Authority to assist the development of standard operating procedures for first responders to implement when confronting a fire occurring within the lithium ion ESS located on site.

Verification:

(a) At least 60 days prior to the start of construction of the project, the project owner shall provide to the CPM:

(1) A copy of UL 9540 design certification for the ESS, or

(2) A copy of the contract with UL (or authorized UL agent) to perform a field certification during construction of the ESS to obtain UL 9540 certification.

(b) At least 60 days prior to the start of construction of the ESS, the project owner shall:

(3) provide the complete ESS fire protection drawings and specifications to the Orange County Fire Authority for review and comment, and to the CPM for review and approval, and;

(4) submit to the CPM, a copy of a letter from UL stating that the design drawings for the ESS have been reviewed and meet UL 9540 requirements for performing a field certification.

(c) At least 60 days prior to the start of ESS commissioning, the project owner shall provide a copy of a letter from the project owner to the OCFA offering collaboration and assistance in developing standard operating procedures for first responders to any lithium ion battery fires that may occur at the project site.

(d) Prior to the start of commissioning, the project owner shall provide a copy of the final completed UL 9540 certification of the ESS to the CPM.

FACILITY DESIGN

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2016 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the 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 (onsite), demolition, repair, or maintenance of the completed facility.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2016 CBSC is in effect, the 2016 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 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.

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, and master drawings and master specifications list. The master drawings and master specifications list shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures, systems, and equipment. Major structures, systems, and equipment are structures and their associated components or equipment that are necessary for power production, costly or time consuming to repair or replace, are used for the storage, containment, or handling of hazardous or toxic materials, or could become potential health and safety hazards if not constructed according to applicable engineering LORS. The schedule shall contain the date of each submittal to the CBO. 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 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, and the master drawings and master specifications list of documents to be submitted to the CBO, for review and approval. These documents shall be the pertinent design documents for the major structures, systems, and equipment defined above in Condition of Certification **GEN-2**. Major structures and equipment shall be added to or deleted from the list only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

GEN-3 The project owner shall make payments to the CBO (the Energy Commission) for design review, plan checks, construction inspections, and other applicable CBO activities, based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. If the Energy Commission delegates the CBO function to a third party or local agency, the project owner, at the Energy Commission's direction, shall make payments directly to the DCBO based upon a fee schedule negotiated between the Energy Commission and the DCBO. These fees may be consistent with the fees listed in the 2016 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.

Verification: The project owner shall make the required payments to the CBO (the Energy Commission) in accordance with the agreement between the project owner and the CBO (the Energy Commission). If the Energy Commission delegates the CBO function to a third party or local agency, the project owner, at the Energy Commission's direction, shall make payments directly to the DCBO based upon a fee schedule

negotiated between the Energy Commission and the DCBO. The project owner shall send a copy of the DCBO'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, or a structural or civil engineer, as the resident engineer (RE) in charge of the project.

The RE 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 RE 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 (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

The RE shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the RE 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 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 RE and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the RE and other delegated engineer(s) within five days of the approval.

If the RE 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 sections 6704, 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California).

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, 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.

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, and sanitary sewer systems; and

3. Provide consultation to the RE 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;

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the

2016 CBC (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 RE.

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.

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 2016 CBC (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 RE 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 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 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, including prefabricated assemblies, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2016 CBC.

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. Inspect the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action; and

4. Submit a final signed report to the RE, 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 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. 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 the CBO to 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 another accessible location, during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-built shall be provided to the 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" (Adobe .pdf 6.0 or newer version) files, 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. A construction storm water pollution prevention plan (SWPPP);
4. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
5. Soils, geotechnical, or foundation investigations reports required by the 2016 CBC.

Verification: At least 15 days (or 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.

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 2016 CBC. 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. 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.

Verification: Within 30 days (or 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. 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, the project owner shall submit plans, calculations, and other supporting documentation to the CBO for design review and acceptance for all project structures and equipment identified in the CBO-approved master drawing and master specifications list. The design plans and calculations shall include the lateral force procedures and details as well as vertical calculations.

Construction of any structure or component shall not begin until the 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;

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;

4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and

5. Submit to the CBO the responsible design engineer’s signed statement that the final design plans conform to applicable LORS.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in the CBO-approved master drawing and master specifications list, 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 sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2016 CBC.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within five days, prepare and submit a 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. 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 to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2016 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.

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 2016 CBC shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or 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 monthly compliance report following receipt of such approvals. 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 the CBO-approved master drawing and master specifications list. The submittal shall also include the applicable quality assurance/quality control (QA/QC) procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction.

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, which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (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;
- NFPA 56;
- 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); and
- Title 24, California Code of Regulations, Part 2 (California Building Code).

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

Verification: At least 30 days (or project owner- and CBO-approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in the CBO-approved master drawing and master specifications list, 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.

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 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.

Verification: At least 30 days (or 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.

A. Final plant design plans shall include:

1. one-line diagram for the 13.1 kV, 4.16 kV and 480 V systems;
2. system grounding drawings;
3. lightning protection system; and
4. 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 13.1 kV, 4.16 kV and 110/480 V systems;
6. system grounding requirements;

7. lighting energy calculations; and

8. 110 volt system design calculations and submittals showing feeder sizing, transformer and panel load confirmation, fixture schedules and layout plans.

C. The following activities shall be reported to the CPM in the monthly compliance report:

1. Receipt or delay of major electrical equipment;

2. Testing or energizing of major electrical equipment; and

3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the 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.

GEOLOGY AND PALEONTOLOGY

GEO-1 A Soils Engineering Report, as required by Section 1803 of the California Building Code (CBC, 2016), or its successor in effect at the time construction of the project commences, shall specifically include laboratory test data, associated geotechnical engineering analyses, and a thorough discussion of seismicity; liquefaction; dynamic compaction; compressible soils; corrosive soils; and ground rupture due to faulting. In accordance with the CBC, the report must also include recommendations for ground improvement and foundation systems necessary to mitigate these potential geologic hazards, if present. In accordance with the California Business and Professions Code, the appropriate qualified California licensed individual(s) is required to sign and seal the Soils Engineering Report.

Verification: The project owner shall include in the application for a grading permit a copy of the Soils Engineering Report which addresses the potential for strong seismic shaking; liquefaction; dynamic compaction; settlement due to compressible soils; corrosive soils: and ground rupture due to faulting, and a summary of how the results of the analyses were incorporated into the project's foundation and grading plan design for review and comment by the delegate chief building official (CBO). The project owner shall provide to the CPM a copy of the Soils Engineering Report, application for grading permit and any comments by the CBO at least 60 days prior to grading.

PAL-1 The project owner shall provide the CPM with the resume, qualifications, and contact information of its paleontological resource specialist (PRS) for review and approval. The PRS's resume shall 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, 2010). The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree (M.S, Ph.D., or equivalent).

2. Ability to recognize and collect fossils in the field.

3. Local geological and biostratigraphic expertise.

4. Proficiency in identifying vertebrate and invertebrate fossils.

5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontological resource monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and a minimum of one year of relevant experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and a minimum of four years' relevant experience monitoring in California; or
- Enrollment in upper division classes pursuing a Bachelor's or more advanced degree in the field of geology or paleontology and a minimum of three years relevant monitoring experience in California.

If the approved PRS is replaced prior to completion of project mitigation and submittal of the paleontological resources report (PRR), the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified paleontological resources monitors (PRMs). The PRM's resume shall include the names and contact information of references. If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM for review and approval.

Verification:

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 30 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated PRM's for the project. The letter shall state that the identified PRM's meet the minimum qualifications for paleontological resource monitoring as required by this condition of certification. If additional PRM's are needed during the project, the PRS shall provide additional letters and resumes to the CPM. The letter shall be provided to the CPM for approval no later than one week prior to the monitor's beginning on-site duties.

3. Prior to any change of the PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide 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 the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings must show the location, depth, and extent of all ground disturbances and be at a scale between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent and construction field manager to confirm area(s) to be worked the following week, until ground disturbance is completed.

Verification:

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 planned changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

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 function as the formal guide for monitoring, collecting, sampling, and reporting activities, and may be modified with CPM approval. The PRMMP shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall include all updates and reside with the PRS, each PRM, the project's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the 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 and 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 required by the PRMMP and these 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, 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 at these locations.

6. A discussion of procedures to be followed: (a)in the event of a significant fossil discovery, (b) stopping construction, (c) resuming construction, and

   (d) 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 meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources.

9. Identification of the institution that has agreed to receive data and fossil materials collected, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution.

10. A copy of the paleontological resources conditions of certification.

11. A copy of the daily monitoring log form.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP to the CPM. 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 paleontological resources and identify procedures they must follow to ensure there are no impacts to sensitive paleontological resources. The WEAP shall include:

1. A discussion of applicable laws and penalties under the law.

2. Good quality photographs or physical examples of fossils expected to be found in units of high paleontological sensitivity at, or near, the site.

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.

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

The project owner shall submit the training script and, if the project owner is planning to use a video for training, a copy of the training video, with the set of reporting procedures for workers to follow that will be used to present the WEAP and qualify workers to conduct ground disturbing activities that could impact paleontological 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 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. If the project owner is planning to use a video for training, a copy of the training video shall be submitted following final approval of WEAP and training script.

PAL-5 No worker shall excavate or perform any ground disturbance activity prior to receiving CPM-approved WEAP training by the PRS, unless specifically approved by the CPM.

Prior to project ground disturbance the following workers shall be WEAP trained by the PRS in-person: project managers, construction supervisors, foremen, and all general workers involved with or operate ground-disturbing equipment or tools. Following the start of ground disturbing activities and after the initial WEAP training conducted prior to ground disturbance, a CPM- approved video or in-person training may be used for new employees. If a video is used a qualified trainer shall be present to monitor training and respond to questions. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous

materials, or other areas of interest or concern. A WEAP certification of completion form shall be used to document who has received the required training.

Verification:

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, trainer identification, and type of training (in-person and/or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

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 and excavation 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 PRS may not further delegate the responsibility for determining whether full-time monitoring is necessary.

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; copies of these logs shall be

submitted with the monthly compliance report. The name and contact information of PRM(s) and PRS who were making field observations will be included in the daily log. 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, or Monday morning in the case of a weekend event. In the event construction has been stopped because of a paleontological find, such notification will be effected as soon as practical, but not later than 24-hours after a stop work order has been issued.

5. For excavations planned in material that is classified as having a moderate to high paleontological sensitivity prior to construction additional precautions may be required. Should excavation methods be proposed that would preclude effective monitoring and examination of paleontological resources encountered during excavation, appropriate mitigation involving education of the public about the lost resources will be proposed in the PRMMP.

The project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities to be included in each MCR. The summary shall include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils**.**

Negative findings, when no fossils are identified, shall also be reported. A final section of the report shall address any issues or concerns about the project relating to paleontological 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:

1. A copy of the daily monitoring log of paleontological resource activities shall be included in the monthly compliance report (MCR).

2. The project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 15 days in advance of any proposed changes in monitoring different from that identified in the PRMMP, which will require concurrence between the PRS and CPM. If there is any unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-7 The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and shall be submitted to the CPM for approval.

The report shall include, but not be limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; and the PRS' description of sensitivity and significance of those resources; and indicate if and how fossil material was curated in accordance with **PAL-3**.

Any portions of this report that involve any independent judgment or analysis of the earth's crust, and the rocks and other materials which compose it, must be done by or under the responsible charge of a California licensed Professional Geologist.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

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 projectowner shall submit documentation to the CPM identifying the entity that will be responsible for curating collected specimens. This documentation shall also show that fees have been paid for curation and the owner relinquishes control and ownership of all fossil material.

Certification of Completion
Worker Environmental Awareness
Program STANTON ENERGY CENTER
(16-AFC-01)

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
1.			
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Cultural Trainer:_____Signature:_____Date:_____/_____/_____

Paleo Trainer:_____Signature:_____Date:_____/_____/____

Biological Trainer:_____Signature:_____Date:_____/_____/____

TRANSMISSION SYSTEM ENGINEERING

TSE-1 The project owner shall furnish to the compliance project manager (CPM) and to the delegate chief building official (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 of transmission facilities, 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 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 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:

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

c) the number of electrical drawings approved, submitted for approval, and still to be submitted.

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, 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-3 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(s) and complete engineering, environmental, and economic rationale for the change, to the CPM and CBO for review and approval.

a) 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); Title 8 of the California Code of 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.

b) Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.

c) 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.

d) The project conductors shall be sized to accommodate the full output of the project.

e) Termination facilities shall comply with applicable SCE interconnection standards.

f) The project owner shall provide to the CPM:

    i) A copy of the executed LGIA signed by the SCE and the project owner and approved by the Federal Energy Regulatory Commission.

Prior to the start of construction or start of modification of transmission facilities, the project owner shall submit to the CBO for approval:

a) Design drawings, specifications, and calculations conforming with CPUC General Order 95, CPUC General Order 128, or National Electric Safety Code (NESC); Title 8 of the 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;

b) 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,"[3] 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); Title 8 of the 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;

c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in charge, a route map, and an

[3] Worst-case conditions for the foundations would include for instance, a dead-end or angle pole.

engineering description of the equipment and configurations covered by requirements **TSE-3** a) through f); and

d) A copy of the executed Large Generator Interconnection Agreement (LGIA) signed by SCE and the project owner and approved by the Federal Energy Regulatory Commission.

Prior to the start of construction 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-4 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.

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-5 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 General Order (GO) 95, CPUC GO 128, or NESC, Title 8, CCR, Articles 35, 36 and 37 of the “High Voltage Electric Safety Orders”, applicable interconnection standards, as well as 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.

Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

a) “As built” engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO 95, CPUC GO 128, or NESC, Title 8, California Code of Regulations, Articles 35, 36, and 37 of the “High Voltage Electric Safety Orders”, and applicable interconnection standards, NEC, and related industry standards.

b) 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”.

c) A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in charge.

COMPLIANCE CONDITIONS OF CERTIFICATION

Compliance Table 1: Summary of Compliance Conditions of Certification

Condition Number	Subject	Description
COM-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, regardless of whether the conditions were satisfied directly by the project owner or by an agent.
COM-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until all of the following activities/submittals have been completed: • Project owner has submitted a pre-construction matrix identifying conditions to be fulfilled before the start of construction; • Project owner has completed all pre-construction conditions to the CPM's satisfaction; and • CPM has issued a letter to the project owner authorizing construction.
COM-5	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each Monthly and Annual Compliance Report, which includes the current status of all Compliance conditions of certification.
COM-6	Monthly Compliance Reports and Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due 1 one month following the docketing of the Energy Commission's Decision on the project and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-7	Periodic and Annual Compliance Reports	After construction ends, and throughout the life of the project, the project owner shall submit Annual Compliance Reports (ACRs) instead of MCR's.
COM-8	Confidential Information	Any information the project owner designates as confidential shall be submitted to the Energy Commission's Executive Director with a request for confidentiality.
COM-9	Annual Fees	Required payment of the Annual Energy Facility Compliance Fee.
COM-10	Amendments, Staff-Approved Project Modifications, Ownership Changes, and Verification Changes	The project owner shall petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements, and/or transfer ownership or operational control of the facility. Petitions to Amend require the payment of amendment processing fees.
COM-11	Reporting of Complaints, Notices, and Citations	Prior to the start of construction, the project owner shall provide all property owners within a one-mile radius a telephone number to contact project representatives with questions, complaints, or concerns. The project owner shall respond to all recorded complaints within 24 hours. Within 5 five days of receipt, the project owner shall report to the CPM all notices, complaints, violations, and citations.

Condition Number	Subject	Description
COM-12	Site Contingency Plan	No less than 60 days prior to the start of commercial operation, the project owner shall submit an on-site Contingency Plan to ensure protection of public health and safety and environmental quality during a response to an emergency.
COM-13	Incident-Reporting Requirements	The project owner shall notify the CPM within one 1 hour of an incident, submit a detailed incident report within 1 one week, maintain records of incident report, and submit public health and safety documents with employee training provisions.
COM-14	Non-Operation	No later than two weeks prior to a facility's planned non-operation, or no later than one week after the start of unplanned non-operation, the project owner shall notify the CPM, interested agencies, and nearby property owners of this status. During non-operation, the project owner shall provide written updates to the CPM.
COM-15	Facility Closure Planning	No less than one year prior to closing, or upon an order compelling permanent closure, the project owner shall submit a Final Closure Plan and Cost Estimate.

COM-1 **Unrestricted Access**. The project owner shall take all steps necessary to ensure that the CPM, responsible Energy Commission staff, and delegate agencies or consultants, have unrestricted access to the facility site, related facilities, project-related staff, and the records maintained on-site for the purpose of conducting audits, surveys, inspections, or general or closure- related site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time, whether such visits are by the CPM in person or through representatives from Energy Commission 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 one hard copy of:

1. the facility's Final Decision;
2. all amendment petitions 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 structural plans and "as-built" drawings for the entire project;
6. all citations, warnings, violations, or corrective actions applicable to the project, and
7. the most current versions of any plans, manuals, and training documentation required by the conditions of certification or applicable LORS.

Energy Commission 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 AFC or amendment processing, particularly if construction is planned to commence shortly after certification. The verification procedures, unlike the conditions, may be modified as necessary by the CPM after notice to the project owner.

A cover letter 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 bar scale, and the most recent revision date.

The project owner is responsible for the content and delivery of all verification submittals to the CPM showing 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, please address as follows:

Compliance Project Manager
Stanton Energy Reliability Center (16-AFC-01C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

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 project certification, it may be necessary for the project owner to file compliance submittals prior to project certification. In these instances, compliance verifications can be submitted in advance of the required deadlines and the anticipated authorizations to start construction. The project owner must understand that submitting items required in compliance verifications prior to these authorizations is at the owner's own risk. Any approval by Energy Commission 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 Delegate Chief Building Official (DCBO), CPM, or delegate agency, if applicable;

7. the compliance status of each condition (e.g., "not started," "in progress" or "completed" (include the date)); and

8. if the condition 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 Conditions and Compliance Monitoring Plan** section.)

During pre-construction, construction, or closure, the project owner or authorized agent shall submit an electronic searchable version of the MCR to the CPM within 10 business days after the end of each reporting month.

MCRs shall be submitted each month until construction is complete and the final certificate of occupancy is issued by the DCBO. MCRs shall be clearly identified for the month being reported. The MCR shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;

2. documents required by specific conditions 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; 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 periodic compliance reports (PCRs) required by the various technical disciplines. ACRs shall be completed for each year of commercial operation and are due each year on a date agreed to by the CPM. Other PCRs (e.g. quarterly reports 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 condition(s) it satisfies, and 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 Title 20, California Code of Regulations, section 2505(a). Any information deemed confidential pursuant to the regulations will remain undisclosed, as provided in Title 20, California Code of Regulations, section 2501 *et seq*.

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 an annually adjusted compliance fee. Current compliance fee information is available on the Energy Commission's website at http://www.energy.ca.gov/siting/filing_fees.html. The project owner may also contact the CPM for the current fee information. The initial payment is due on the date the Energy Commission dockets its Final Decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification.

COM-10 **Amendments, Staff-Approved Project Modifications, Ownership Changes, and Verification Changes**. The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to modify the design, operation, or performance requirements of the project or linear facilities, or to transfer ownership or operational control of the facility. The CPM will determine whether staff approval will be sufficient, or whether Commission approval will be necessary. It is the project owner's responsibility to contact the CPM to determine if a proposed project change triggers the requirements of section 1769. Section 1769 details the required contents for a Petition to Amend an Energy Commission Decision. The only change that can be requested by means of a letter to the CPM is a request to change the verification method of a condition of certification.

A project owner is required to submit a $5,000 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 $830,336, adjusted annually. Current amendment fee information is available on the Energy Commission's website at http://www.energy.ca.gov/siting/filing_fees.html.

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 owner 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 business days of receipt, the project owner shall report, and provide copies to the CPM, all complaints, including, but not limited to, noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **Noise and Vibration** conditions of certification. All other complaints shall be recorded on the

complaint form (Attachment A) at the end of this compliance plan. Additionally, the project owner must include in the next MCR, ACR or PCR, copies of all complaints, notices, warnings, citations and fines, a description of how the issues were resolved, and the status of any unresolved or ongoing matters.

COM-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 twenty-four-hour site security;

7. procedures for maintaining contingency response capabilities; and

8. the procedures and implementation sequence for the safe and secure shutdown of all non-critical equipment and removal of hazardous materials and waste (see also specific conditions of certification for the technical areas of **Public Health, Waste Management, Hazardous Materials Management, and Worker Safety).**

COM-13 **Incident-Reporting Requirements.** The Energy Commission needs timely and clear information on incidents that have occurred (or are still ongoing) at the project site. Energy Commission staff requires that the project owner notify the CPM within one hour after it is safe and feasible to do so. The list of incidents includes but is not limited to, any of the following:

- Any release of hazardous or non-hazardous materials to the environment that could result in public concerns due to fire, smoke, noise, odor, visual plume or potential health impacts, or one that requires notification to, or emergency response by, any federal, state, or local agency; and,

- The discharge (including accidental) of onsite fixed emergency fire or plume suppression equipment (excluding portable hand held fire extinguishers) for other than routine maintenance, readiness testing, or training; or,

- Any breach of the power plant's physical or cyber security that requires notification to, or emergency response by, any federal, state, or local agency.

Within six business days of an incident, the project owner shall submit to the CPM an incident report that includes, as appropriate and available, the following information:

- Description of the incident, including its date, time, and location;

- Suspected cause of the incident;

- Location of any suspected off-site impacts;

- Federal, state, and local agencies notified;
- Responding agencies;
- Emergency response actions taken;
- Hazardous materials released and estimates of quantities released;
- Suspected injuries, fatalities, or property damage;
- Name, phone number, and e-mail address of a facility contact person(s) having knowledge of the incident; and
- Initial corrective actions.

After the initial 6-day report, the project owner shall start submitting monthly status reports; within 48-hours of a request by the CPM, the project owner shall submit a status report. Status reports shall include the activities already taken, and those currently being taken, to remedy the impacts of the incident. The CPM will determine when reporting is no longer needed. The project owner shall maintain all incident records and reports for the life of the project. A report or a lack of a report would not trigger or preclude staff from investigating incidents at the facilities in the normal course of business.

COM-14 Non-Operation and Repair/Restoration Plans.

(a) If the facility ceases operation temporarily (excluding planned and unplanned maintenance for longer than one week (or other CPM- approved date), but less than three months (or other CPM-approved date), the project owner shall notify the CPM. Notice of planned non-operation shall be given at least two weeks prior to the scheduled date. Notice of unplanned non-operation shall be provided no later than one week after non-operation begins.

For any non-operation, a Repair/Restoration Plan for conducting the activities necessary to restore the facility to availability and reliable and/or improved performance shall be submitted to the CPM within one week after notice of non-operation is given. If non-operation is due to an unplanned incident, temporary repairs and/or corrective actions may be undertaken before the Repair/Restoration Plan is submitted. The Repair/Restoration Plan shall include:

1. Identification of operational and non-operational components of the plant;
2. A detailed description of the repair and inspection or restoration activities;
3. A proposed schedule for completing the repair and inspection or restoration activities;

4. An assessment of whether 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.

(b) 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.

(c) 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 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.

Final Closure Plan and Cost Estimate

(a) No less than one year (or other CPM-approved date) prior to initiating a permanent facility closure, or upon an order compelling permanent closure, the project owner shall submit for Energy Commission review and approval a Final Closure Plan and Cost Estimate, which includes any site maintenance and monitoring.

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.

(b) 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 site maintenance activities, with a description and explanation of methods to be used, broken down by phases, including, but not limited to:

    a. dismantling and demolition;

    b. recycling and site clean-up;

    c. impact mitigation and monitoring;

    d. site remediation and/or restoration;

    e. exterior maintenance, including paint, landscaping and fencing;

    f. site security and lighting; and

    g. any contingencies.

5. a final cost estimate for all closure activities, by phases, including 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 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 **Public Health, Waste Management, Hazardous Materials Management, and Worker Safety).**

If the Energy Commission-approved Final Closure Plan and Cost Estimate procedures are not initiated within one year of the plan 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 corrective actions against the project owner to complete facility closure. The project owner remains liable for all costs of contingency planning and closure.

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	
Start Recycled Water Supply Line Construction	
Complete Recycled Water Supply Line Construction	

COMPLAINT LOG NUMBER:_____ DOCKET NUMBER:_____

ATTACHMENT A

COMPLAINT REPORT AND RESOLUTION FORM

PROJECT NAME: _____

COMPLAINANT INFORMATION

NAME: _____ PHONE NUMBER: _____

ADDRESS: _____

EMAIL: _____

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: _____

ATTACHMENT A

COMPLAINT REPORT AND RESOLUTION FORM

(ATTACH ADDITIONAL PAGES AND ALL SUPPORTING PHOTO/DOCUMENTATION, AS REQUIRED)

EXHIBIT LIST

APPENDIX B

Transportation

Exhibit List

Docket: 16-AFC-01
Project Title: Stanton Energy Reliability Center
Generated On: 10/5/2018 9:23:44 AM

Exhibit Number	Document Title and Description	Disposition
1	TN # 214206-1 **Transmittal Letter for the Application for Certification** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
2	TN # 214206-2 **Title Page** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
3	TN # 214206-3 **Acronyms** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
4	TN # 214206-4 **Contents** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
5	TN # 214206-5 **Executive Summary** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
6	TN # 214206-6 **1.0 Introduction** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
7	TN # 214206-7 **2.0 Project Description** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
8	TN # 214206-8 **3.0 Electric Transmission** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
9	TN # 214206-9 **4.0 Natural Gas Supply** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.

Exhibit Number	Document Title and Description	Disposition
10	TN # 214206-10 **5.0 Environmental Analysis** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
11	TN # 214206-11 **5.1 Air Quality** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
12	TN # 214206-12 **5.2 Biological Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
13	TN # 214206-13 **5.3 Cultural Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
14	TN # 214206-14 **5.4 Geological Hazards and Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
15	TN # 214206-15 **5.5 Hazardous Materials Handling** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
16	TN # 214206-16 **5.6 Land Use** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
17	TN # 214206-17 **5.7 Noise** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
18	TN # 214206-18 **5.8 Paleontological Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
19	TN # 214206-19 **5.9 Public Health** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
20	TN # 214206-20 **5.10 Socioeconomics** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
21	TN # 214206-21 **5.11 Soils** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
22	TN # 214206-22 **5.12 Traffic and Transportation**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
23	TN # 214206-23 **5.13 Visual Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
24		Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.

Exhibit Number	Document Title and Description	Disposition
	TN # 214206-24 **5.14 Waste Management** Application for Certification Vol. 1	
25	TN # 214206-25 **5.15 Water Resources** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
26	TN # 214206-26 **5.16 Worker Health and Safety** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
27	TN # 214206-27 **6.0 Alternatives** Application for Certification Vol. 1	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
28	TN # 214207-1 **Application for Certification Volume 2 -Table of Contents** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
29	TN # 214207-2 **Appendix 1A - ALTA Survey** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
30	TN # 214207-3 **Appendix 1B - List of Owners of Nearby Properties** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
31	TN # 214207-4 **Appendix 1C - Persons Who Prepared this AFC** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
32	TN # 214207-5 **Appendix 2A - Engineering Design Criteria** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
33	TN # 214207-6 **Appendix 2B - Golden State Water Will-Serve Letter** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
34	TN # 214207-7 **Appendix 2C - City of Stanton Can-Serve Letter** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
35	TN # 214207-8 **Appendix 2D - Correspondence with Orange County Sanitation District Personnel** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
36	TN # 214207-9 **Appendix 3A - Interconnection Request Studies** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
37		

Exhibit Number	Document Title and Description	Disposition
	TN # 214207-10 **Appendix 3A-1a - Addendum 1 to the Interconnection Study Report** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
38	TN # 214207-11 **Appendix 3A-1b - Addendum 1 to the Interconnection Study Report** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
39	TN # 214207-12 **Appendix 5.1A - Support Data for Emissions Calculations** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
40	TN # 214207-13 **Appendix 5.1B - Air Quality Impact Analysis Support Data** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
41	TN # 214207-14 **Appendix 5.1C - Dispersion Modeling Protocol** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
42	TN # 214207-15 **Appendix 5.1D - Risk Assessment Support Data** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
43	TN # 214207-16 **Appendix 5.1E - Estimated Construction Period Emissions and Impacts** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
44	TN # 214207-17 **Appendix 5.1F - Evaluation of Best Available Control Technology** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
45	TN # 214207-18 **Appendix 5.1G - Regional Emissions Inventory Data** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
46	TN # 214207-19 **Appendix 5.1H -Mitigation Strategy Support Data** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
47	TN # 214207-20 **Appendix 5.1I - Permitting Forms** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
48	TN # 214207-21 **Appendix 5.2A - Special-Status Species** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
49		

Exhibit Number	Document Title and Description	Disposition
	TN # 214207-22 **Appendix 5.2B - Rare Plant Survey Report**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
50	TN # 214207-23 **Appendix 5.2C - Biological Resources Resumes** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
51	TN # 214207-24 **Appendix 5.3A - Consultation Record** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
52	TN # 214207-27 **Appendix 5.3D - Cultural Resources Resumes** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
53	TN # 214207-28 **Appendix 5.4A - Preliminary Geotechnical Report** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
54	TN # 214207-29 **Appendix 5.5A - Offsite Consequences Analysis** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
55	TN # 214207-30 **Appendix 5.6A - Cumulative Projects** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
56	TN # 214207-31 **Appendix 510A - Environmental Justice Analysis** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
57	TN # 214207-32 **Appendix 510B - Records of Conversation with OCFA and OCSD** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
58	TN # 214207-33 **Appendix 5.11A - Soil Loss Calculation** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
59	TN # 214207-34 **Appendix 5.13A - Design Concept** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
60	TN # 214207-35 **Appendix 5.13B - Landscape Plan** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
61	TN # 214207-36 **Appendix 5.14A -Phase I ESA** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
62	TN # 214207-37 **Appendix 5.14B - Phase II ESA** Application for Certification Vol. 2	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
63		

Exhibit Number	Document Title and Description	Disposition
	TN # 214321 **Stanton Energy Reliability Center LLC's AFC Air Quality Modeling Files** The CD containing the Air Quality Modeling Files is located in the Docket Unit	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
64	TN # 214377 **Stanton Energy Reliability Center Geotechnical Report 10-27-16** Geotechnical Report	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
65	TN # 215097 **Stanton Energy Reliability Center Application for Certification Data Adequacy Supplement 12.20.2016** Data Adequacy Supplement	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
66	TN # 215165 **Attachment DA3.0-1 One-Line Diagram, searchable .pdf** Attachment DA3.0-1 One-Line Diagram, searchable .pdf	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
67	TN # 216917 **Magnolia School District's Letter of Support for Stanton Energy Reliability Center**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
68	TN # 217179 **Stanton Energy Reliability Center LLC's Presentation for Public Site Visit, Environmental Scoping Mtg. and Informational Hearing**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
69	TN # 217461 **Stanton Energy Reliability Center's Data Request Response, Set 1 (A1-A63)**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
70	TN # 217681 **Response to Staff Data Requests A1-A5** Responses to South Coast Air Quality Management District Comments on AFC Section 5.1, Air Quality	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
71	TN # 217699 **Stanton Energy Reliability Center's Responses to Staff Data Requests A34-A35 and Revised Human Health Risk Assessment** SERC Public Health DRR A34-A35 - CD is for human health risk assessment modeling files	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
72	TN # 217717 **Air Quality Letter** Air Quality Letter	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
73	TN # 217787 **Stanton Energy Reliability Center, LLC's Response Response Staff Data Requests A1-A5**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.

Exhibit Number	Document Title and Description	Disposition
	and Responses to South Coast Air Quality Stanton Energy Reliability Center, LLC's Response Response Staff Data Requests A1-A5 and Responses to South Coast Air Quality Management District Comments	
74	TN # 218794 **Stanton Energy Reliability Center AFC Noise Section, Table 5.7-7, Revised**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
75	TN # 220620 **Stanton Energy Reliability Center, LLC's Proposed Modifications to Condition of Certification HAZ-8**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
76	TN # 220821 **Stanton Energy Reliability Center Data Request Response Set 2, for Data Requests A64 through A70**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
77	TN # 220942 **Stanton Energy Reliability Center Supplemental Response to Data Request A17**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
78	TN # 221180 **Letter of Support for Stanton Energy Reliability Center from Chairwoman Steel**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
79	TN # 221300 **SERC_Data_Request_Response-Set_3-09.21.2017.pdf** SERC_Data_Request_Response-Set_3-09.21.2017.pdf	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
80	TN # 221722 **Stanton Energy Reliability Center, LLC Response to SCAQMD October 16, 2017**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
81	TN # 221721 **Stanton Energy Reliability Center, LLC Supplemental Response to SCAQMD October 16, 2017 Letter RE Emission Gaurantees**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
82	TN # 221769 **Barre Substation Form DPR523 dated 11.14.2017 for Cultrual Resources**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
83	TN # 222124 **Stanton Energy Reliability Center LLC's Supplemental Response to Data Request A10**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
84	TN # 222519 **Preliminary Determination Of Compliance (PDOC)** Stanton - Notice of SCAQMD PDOC - for Permits to Construct	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
85		

Exhibit Number	Document Title and Description	Disposition
	TN # 222545 **Stanton Energy Reliability Center LLC's Cumulative Air Quality Impact Analysis**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
86	TN # 222611 **Stanton Energy Reliability Center LLC's Comments on the Preliminary Determination of Compliance**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
87	TN # 222651 **Record of Conversation between G. Darvin and W. Qian Re Cumulative Modeling Assessment**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
88	TN # 223179 **Stanton Energy Reliability Center LLC's Initial Comments on the Preliminary Staff Assessment**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
89	TN # 223184 **Stanton Energy Reliability Center LLC's Water Quality Management Plan**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
90	TN # 223189 **Stanton Energy Reliability Center LLC's Initial Comments on the Preliminary Staff Assessment -Attachment A, App.5.1E Replacement**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
91	TN # 223281 **Stanton Energy Reliability Center LLC's Response to PSA Workshop Queries**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
92	TN # 223293 **Stanton Energy Reliability Center LLC's Final Comments on the Preliminary Staff Assessment**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
93	TN # 223402 **Southern California Edison Company Generator Interconnection Agreement for Stanton Energy Reliability Center**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
94	TN # 223409 **Stanton Energy Reliability Center LLC's Supplemental Responses to PSA Workshop Query Relating to Stormwater Discharge**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
95	TN # 223414 **Stanton Energy Reliability Center LLC's Supplemental NOISE-7 Comment on Preliminary Staff Assessment**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
96	TN # 223425 **Stanton Energy Reliability Center's Responses to Data Requests A73 through A85**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
97	TN # 224077 **NREL Land Use Requirements for Solar Power Plants in the United States**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.

Exhibit Number	Document Title and Description	Disposition
98	TN # 224076 **CAISO 2019 Local Capacity Technical Report** Final Report and Study Results, May 15, 2018	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
99	TN # 224081 **CPUC Hearing Transcript Excerpts** CPUC Evidentiary Hearing Transcript, Application 14-11-012, May 5, 2015, Volume 1 Page 30, lines 17-23, Testimony of Jesse Bryson	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
100	TN # 224018 **Stanton Energy Relibility Center LLC's Opening Testimony**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
101	TN # 224083 **SERC, LLC Final Rebuttal Testimony Package - Alternatives - Declarations**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
102	TN # 224084 **Rebuttal to Clean Colation Alternatives Testimony - Corrected Cost Analysis**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
103	TN # 224043 **Resume of Jim McLucas** Resume of Jim McLucas as Attachement to Opening Testimony for SERC, LLC	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
104	TN # 224391 **Orange County Recorder Office Pages 36 and 37 of Book 278** Official Plat Map recorded in Book 278, pages 36 and 37 showing Parcel 2 as an official legal parcel, Exhibit 104	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 8/2/2018.
105	TN # 224777 **SERC Revised Natural Gas Figures and Declaration of Doug Davy**	Offered by Applicant (Stanton Energy Reliability Center); Admitted on 10/5/2018.
300	TN # 223726 **Final Staff Assessment**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
301	TN # 223313-2 **Stanton Energy Reliability Center (SERC) Final Determination of Compliance (FDOC) Package**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
302	TN # 223882 **Energy Commission Staff's Opening Testimony**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
303	TN # 223897 **Declaration of Brett Fooks**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
304	TN # 224071 **Energy Commission Staff's Rebuttal Testimony**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
305		Offered by Commission Staff (Staff); Admitted on 8/2/2018.

Exhibit Number	Document Title and Description	Disposition
	TN # 224143 **Deep Decarbonization in a High Renewables Future**	
306	TN # 224289 **Energy Commission Staff's Air Quality Greenhouse Gas Emissions Errata**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
307	TN # 224315 **Energy Commission Staff's Response to the Committee's Request for Clarification**	Offered by Commission Staff (Staff); Admitted on 8/2/2018.
308	TN # 224746 **Energy Commission Staff's Response to the Committee Order for Resubmission of Maps to Conform to Evidence**	Offered by Commission Staff (Staff); Admitted on 10/5/2018.
900	TN # 224025 **Opening Testimony of Clean Coalition**	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
901	TN # 224086 **Miles Maurino Comments Clean Coalition Rebuttal Testimony**	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
902	TN # 224169 **LBNL Article - Demand Response Potential** This document was cited in Note 3 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
903	TN # 224168 **Integrating Increased DR and Dynamic Price Response into NYISO Markets** This document was cited in Note 4 of the Clean Coalition's Opening Testimony (TN#: 224025)	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
904	TN # 224167 **FERC 2015 Assessment of DR and AMI.** Note 5 of the Clean Coalition's Opening Testimony (TN#: 224025) references this document.	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
905	TN # 224165 **SCE Demand Response Programs** This website was cited in citations 7, 8 and 9 in the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
906	TN # 224163 **GreenBiz Article - Here comes the sun Solar plus storage energy solutions get competitive** This article was cited in Note 11 of the Clean Coalition's Opening Testimony (TN#: 224025)	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
907	TN # 224162 **Carbon Budget Article** This document was cited in Note 12 of the Clean Coalition's Opening Testimony (TN# 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.

Exhibit Number	Document Title and Description	Disposition
908	TN # 224161 **NREL Advanced Inverter Article** This document was cited in Note 13 of the Clean Coalition's Opening Testimony (TN# 224025)	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
909	TN # 224160 **KIUC SolarCity Selects Battery System for Kaua'i Co-op Solar Storage Project** This document was cited in Note 14 of the Clean Coalition's Opening Testimony (TN#: 224025)	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
910	TN # 224159 **Renewables Now, Hawaii Regulators approve solar-plus-storage project on Kaua'i** This article was cited in Note 15 of the Clean Coalition's Opening Testimony (TN#: 224025)	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
911	TN # 224158 **Clean Coalition Solar Siting Surveys** This webpage was cited in Note 16 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
912	TN # 224157 **US EIA 2018 Annual Energy Outlook** This document was cited in Notes 24, 25, and 26 in the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
913	TN # 224156 **CPUC Decision 15-11-041** This Decision was cited in Notes 29, 31, 32 and 33 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
914	TN # 224155 **CPUC Decision 16-09-004** This Decision was cited in Note 30 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
915	TN # 224154 **CPUC Decision 16-05-050** This Decision was cited in Note 34 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
916	TN # 224171 **Clean Coalition - Wall Street Journal Article Summary and Link** This document was cited in Note 35 of the Clean Coalition's Opening Testimony (TN#: 224025).	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
917	TN # 224026 **Opening Testimony Supplement**	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.
918	TN # 224175 **Doug Karpa Declaration**	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.

Exhibit Number	Document Title and Description	Disposition
	Clean Coalition Opening and Response Testimony Co-Author, Doug Karpa, Declarations Page	
919	TN # 224174 **Doug Karpa Statement of Qualifications** Clean Coalition Opening and Rebuttal Testimony Co-Author, Doug Karpa, Statement of Qualifications	Offered by Intervenor (Clean Coalition); WITHDRAWN on 7/31/2018.

DEFINITIONS

AND

ACRONYMS

APPENDIX C

Acronyms

AAQS	Ambient Air Quality Standard
AB	Assembly Bill
ACGIH	American Conference of Governmental and Industrial Hygienists
ACQMP	Air Quality Construction Mitigation Plan
AERMOD	AMS/EPA Regulatory Model
AFC	Application for Certification
AFY	Acre Feet per Year
AIHA	American Industrial Hygienists Association
APCO	Air Pollution Control Officer
AQCMM	Air Quality Construction Mitigation Manager
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	California Air Resources Board
AVQMD	Antelope Valley Air Quality Management District
BACT	Best Available Control Technology
Btu	British Thermal Unit
CAA	Clean Air Act (Federal)
CAAQS	California Ambient Air Quality Standards
CAISO	California Independent System Operator
CalEPA	California Environmental Protection Agency
California ISO	California Independent System Operator
CAPCOA	California Air Pollution Control Officers Association
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_2	Carbon Dioxide
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CO_2e	Carbon Dioxide Equivalent
CPM	(CEC) Compliance Project Manager
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CTGs	Combustion Turbine Generators
Degrees F	Degrees Fahrenheit
DPMs	Diesel Particulate Matter
DSCFM	Dry Standard Cubic Feet per Minute
EEGL	Emergency Exposure Guidance Level
EIR	Environmental Impact Report
EPA	Environmental Protection Agency
EPS	Emission Performance Standard
ERC	Emission Reduction Credit
ERPG	Emergency Response Planning Guidelines
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_2S	Hydrogen Sulfide
HAPs	Hazardous Air Pollutants
HARP	Hot Spots Reporting Program
HARP2	Hot Spots Reporting Program Version 2
HEPA	High Efficiency Particulate Air
HFC	Hydrofluorocarbons
HI	Hazard Index
HRA	Health Risk Assessment
HSC	Health and Safety Code
IDLH	Immediately Dangerous to Life and Health Level
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
MACT	Maximum Achievable Control Technology
MCR	Monthly Compliance Report
MEIR	Maximally Exposed Individual Resident
MEIW	Maximally Exposed Individual Worker
mg/m3	Milligrams per Cubic Meter

MICR	Maximum Individual Cancer Risk
MMBtu	Million British thermal units
MMBTu/hr	Million British Thermal Units per Hour
MT	Metric tones
$MTCO_{2e}$	Metric tons of CO_2-Equivalent
MW	Megawatts (1,000,000 Watts)
MWh	Megawatt-hour
N_2O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NIOSH	National Institute of Occupational Safety and Health
NO	Nitric Oxide
NO_2	Nitrogen Dioxide
NO_3	Nitrates
NOx	Oxides of Nitrogen or Nitrogen Oxides
NRC	National Research Council
NSPS	New Source Performance Standard
NSR	New Source Review
O_2	Oxygen
O_3	Ozone
OEHHA	Office of Environmental Health Hazard Assessment
OSHA	Occupational Safety and Health Administration
OTC	Once-through Cooling
PAHs	Polycyclic Aromatic Hydrocarbons
PDOC	Preliminary Determination of Compliance
PEP	Palmdale Energy Project

PFC	Perfluorocarbons
PHPP	Palmdale Hydrogen Power Plant
PM	Particulate Matter
PM10	Particulate Matter less than 10 microns in diameter
PM2.5	Particulate Matter less than 2.5 microns in diameter
PMI	Point of Maximum Impact
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
RELs	Reference Exposure Levels
RPS	Renewables Portfolio Standard
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
Scf	Standard Cubic Feet
SCGT	Simple Cycle Gas Turbine
SERC	Stanton Energy Reliability Center
SF_6	Sulfur Hexafluoride
SIDS	Sudden Infant Death Syndrome

SIP	State Implementation Plan
SO_2	Sulfur Dioxide
SO_4	Sulfate
SOx	Oxides of Sulfur
SRP	Scientific Review Panel
Stanton	Stanton Energy Reliability Center
STEL	Short Term Exposure Limit
STPEL	Short Term Public Emergency Limit
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resource Control Board
TACs	Toxic Air Contaminants
T-BACT	Best Available Control Technology for Toxics
TLV	Threshold Limit Value
Tpv	Tons per year\
U.S. EPA	United States Environmental Protection Agency
WCI	Western Climate Initiative
WHO	World Health Organization

DEFINITIONS

AAC	All aluminum conductor.
ACSR	Aluminum conductor steel-reinforced.
ACSS	Aluminum conductor steel-supported.
Ampacity	Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, at which damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.
Ampere	The unit of current flowing in a conductor.
Bundled	Two wires, 18 inches apart.
Bus	Conductors that serve as a common connection for two or more circuits.
Conductor	The part of the transmission line (the wire) that carries the current.
Congestion management	A scheduling protocol, which provides that dispatched generation and transmission loading (imports) will not violate criteria.
Double–contingency condition	Also known as emergency or N-2 condition, a forced outage of two system elements usually (but not exclusively) caused by one single event. Examples of an N-2 contingency include loss of two transmission circuits on a single tower line or loss of two elements connected by a common circuit breaker due to the failure of that common breaker.
Emergency overload	See single–contingency condition. This is also called an N-1 condition.
kcmil	One-thousand circular mil. A unit of the conductor's cross-sectional area divided by 1,273 to obtain the area in square inches.
Kilovolt (kV)	A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground.
Loop	An electrical cul-de-sac. A transmission configuration that interrupts an existing circuit, diverts it to another connection, and returns it back to the interrupted circuit, thus forming a loop or cul-de-sac.
Megavar	One megavolt ampere reactive.
Megavars	Mega-volt-ampere-reactive. One million volt-ampere-reactive. Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system.
Megavolt ampere (MVA)	A unit of apparent power equal to the product of the line voltage in kilovolts, current in amperes, the square root of 3, and divided by 1000.
Megawatt (MW)	A unit of power equivalent to 1,341 horsepower.
N-0 condition	See normal operation/normal overload.
Normal operation/normal overload (N-0)	When all customers receive the power they are entitled to without interruption and at steady voltage, and no element of the transmission system is loaded beyond its continuous rating.
N-1 condition	See single–contingency condition.

N-2 condition	See double–contingency condition.
Outlet	Transmission facilities (e.g., circuit, transformer, circuit breaker) linking generation facilities to the main grid.
Power flow analysis	A power flow analysis is a forward-looking computer simulation of essentially all generation and transmission system facilities that identifies overloaded circuits, transformers, and other equipment and system voltage levels.
Reactive power	Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system. An adequate supply of reactive power is required to maintain voltage levels in the system.
Remedial action scheme (RAS)	A remedial action scheme is an automatic control provision, which, for instance, will trip a selected generating unit upon a circuit overload.
SF6	Sulfur hexafluoride is an insulating medium.
Single–contingency condition	Also known as emergency or N-1 condition, occurs when one major transmission element (e.g., circuit, transformer, circuit breaker) or one generator is out of service.
Solid dielectric cable	Copper or aluminum conductors that are insulated by solid polyethylene-type insulation and covered by a metallic shield and outer polyethylene jacket.
Special protection scheme/system (SPS)	An SPS detects a transmission outage (either a single or credible multiple contingency) or an overloaded transmission facility and then trips or runs back generation output to avoid potential overloaded facilities or other criteria violations.
Switchyard	A power plant switchyard is an integral part of a power plant and is used as an outlet for one or more electric generators.
Thermal rating	See ampacity.
TSE	Transmission System Engineering.
Tap	A transmission configuration creating an interconnection through a sort single circuit to a small- or medium-sized load or generator. The new single circuit line is inserted into an existing circuit by using breakers at existing terminals of the circuit, rather than installing breakers at the interconnection in a new switchyard.
Undercrossing	A transmission configuration where a transmission line crosses below the conductors of another transmission line, generally at 90 degrees.
Under build	A transmission or distribution configuration where a transmission or distribution circuit is attached to a transmission tower or pole below (under) the principle transmission line conductors.

PROOF
OF
SERVICE LIST

APPENDIX D

Proof of Service List

Docket: 16-AFC-01
Project Title: Stanton Energy Reliability Center
Generated On: 10/4/2018 11:19:03 AM

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