CPV SENTINEL ENERGY PROJECT

Presiding Member's Proposed Decision

CALIFORNIA
ENERGY COMMISSION
Arnold Schwarzenegger, Governor

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CALIFORNIA
ENERGY COMMISSION

1516 Ninth Street
Sacramento, CA 95814

http://www.energy.ca.gov/sitingcases/sentinel/index.html

JAMES D. BOYD
Vice Chair
Presiding Committee Member

KENNETH CELLI
Hearing Officer

DISCLAIMER

This report was prepared by the California Energy Commission Sentinel Energy Project AFC Committee as part of the Sentinel Energy Project, Docket No. 07-AFC-3. The views and recommendations contained in this document are not official policy of the Energy Commission until the report is adopted at an Energy Commission Business Meeting.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

The Committee hereby submits its Presiding Member's Proposed Decision for the ***CPV SENTINEL PROJECT*** (Docket Number 07-AFC-3). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code Regs., §§ 1749-1752.5.)

The Committee recommends that the Application for Certification be approved, subject to the Conditions of Certification set forth herein, and that the Energy Commission grant the Project Owner a license to construct and operate the Project.

Dated: October 5, 2010, at Sacramento, California.

JAMES D. BOYD
Vice Chair and Presiding Member
Sentinel AFC Committee

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INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision contains the Commission's rationale in determining that the proposed CVP Sentinel, LLC, (Sentinel), a simple-cycle (peaking) power plant facility located within unincorporated Riverside County, adjacent to the Palm Springs northern city limits, complies with all applicable laws, ordinances, regulations, and standards (LORS), and may therefore be licensed. It is based exclusively upon the evidence of record established during this certification proceeding and summarized in this document. We have independently evaluated the evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the Sentinel project is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On June 25, 2007, CVP Sentinel, LLC, (Sentinel) submitted an Application for Certification (AFC) to the California Energy Commission to construct and operate a simple-cycle (peaking) power plant. The Sentinel project is a proposed nominally rated 850 megawatt (MW) electrical generating facility. The proposed project consists of eight natural gas-fired General Electric (GE) LMS100 combustion turbine generators (CTGs) operating in simple-cycle mode. The project will supply quick-start peaking capacity, energy, and ancillary services into the California Independent System Operator's (CAISO) Los Angeles Basin Local Capacity Requirement Area. The CAISO has identified this region as one needing additional peaking capacity to meet resource adequacy requirements and ensure grid reliability.

The proposed project site is located approximately 1.3 miles east of State Route (SR) 62 (also referred to as Twenty-nine Palms Highway), 1.7 miles north of Interstate 10 (I-10), and 1.3 miles west of Indian Avenue. Powerline Roads North and South run along the south side of the property. Access to the site will be available from Dillon Road north onto the proposed access road to the project site. Access to Dillon Road is from the Dillon Road exit off SR 62 and from the Indian Avenue exit off I-10.

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 10/2/08 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix B** of this Decision.

The main project features will consist of a 37-acre power plant site, a 14 acre construction lay-down area, 2,300 feet of new transmission lines (in a configuration that follows property lines to the Devers substation), and 2.6 miles of new natural gas pipeline. The site is situated approximately 8 miles northwest of the center of Palm Springs and 4.5 miles west of the center of Desert Hot Springs.

The 37-acre proposed power plant site is currently vacant, with the exception of an unoccupied dwelling unit at the southeastern corner of the site. The surrounding area is primarily characterized by industrial use with extensive development of wind energy and transmission infrastructure. Southern California Edison's (SCE) Devers substation is approximately 700 feet to the west of the proposed project site and the 135 MW Indigo Energy Facility is approximately 1.8 miles to the southeast. The nearest current residence to the power plant site is approximately 330 feet to the east. Sentinel has an option to acquire this property. According to the Applicant, the project site was selected to optimize nearby access to a natural gas fuel supply line and tie-in location to the SCE transmission system at the Devers substation, as well as to minimize environmental impacts.

Project construction is expected to occur over an 18-month period with an estimated on-line date of May 2010. The number of construction workers would range from 27 in the first month of construction to 371 in the sixth month of construction, with the average number of workers on site over the course of the 18-month construction period would be 212. During operation of the project, 14 permanent and part-time workers would be needed to maintain and operate the project. The Applicant estimates capital costs associated with the project to be approximately $380 million.

Additionally, the Commission typically seeks comments from and works closely with other regulatory agencies that administer LORS that may be applicable to proposed projects. These agencies include as applicable the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Army Corps of Engineers, California Coastal Commission, State Water Resources Control Board/Regional Water Quality Control Board, California Department of Fish and Game, and the California Air Resources Board, and the California Independent System Operator (CAISO). The local water agencies were also contacted to ensure minimization of water usage and a clearer understanding of potential impacts. There were no formal Intervenors.

B. SITE CERTIFICATION PROCESS

The CVP Sentinel and its related facilities are subject to Energy Commission licensing jurisdiction. (Pub. Res. Code, § 25500 et seq.). During licensing proceedings, the Commission acts as lead state agency under the California Environmental Quality Act (CEQA). (Pub. Res. Code, §§ 25519(c), 21000 et seq.) The Commission's regulatory process, including the evidentiary record and associated analyses, is functionally equivalent to the preparation of an Environmental Impact Report. (Pub. Res. Code, § 21080.5.) The process is designed to complete the review within a specified time period when the required information is submitted in a timely manner; a license issued by the Commission is in lieu of other state and local permits.

The 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.

Specifically, the 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. Public participation is encouraged at every stage of the process.

The process begins when an Applicant submits an AFC. Commission staff reviews the data submitted as part of the AFC and makes a recommendation to the Commission on whether the AFC contains adequate information to begin the certification process. After the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the formal licensing process. This process includes public conferences and evidentiary hearings, where the evidentiary record is developed and becomes the basis for the Presiding Member's Proposed Decision (PMPD). The PMPD determines a project's conformity with applicable laws, ordinances, regulations, and standards and provides recommendations to the full Commission.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed Project and obtaining necessary technical information. During this time, the Commission staff sponsors public workshops

at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of the Project in its Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the PSA and its complete analyses and recommendations are published in the Final Staff Assessment (FSA).

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order to schedule formal evidentiary hearings. At the evidentiary hearings, all formal parties, including intervenors, may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public may offer oral or written comments at these hearings. Evidence submitted at the hearings provides the basis for the Committee's analysis and recommendations to the full Commission.

The Committee's analysis and recommendations appear in the PMPD, which is available for a 30-day public comment period. Depending upon 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 triggers an additional 15-day public comment period. Finally, the full 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 Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal 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 staffs, or assigned hearing officer unless these communications are made on the public record. The Office of the Public Adviser is available to assist the public in participating in all aspects of the certification proceeding.

C. PROCEDURAL HISTORY

Public Resources Code, sections 25500 et seq., and Energy Commission regulations (Cal. Code Regs., tit. 20, § 1701, et seq.) mandate a public review process and specify the occurrence of certain procedural events in which the

public may participate. The key procedural events that occurred in the present case are summarized below.

CVP Sentinel, LLC, submitted an AFC on June 25, 2007, with the California Energy Commission to construct and operate a simple-cycle (peaking) power plant. The proposed project consists of eight natural gas-fired General Electric (GE) LMS100 combustion turbine generators (CTGs) operating in simple-cycle mode. The project will supply quick-start peaking capacity, energy, and ancillary services into the CAISO Los Angeles Basin Local Capacity Requirement Area. The CAISO has identified this region as one needing additional peaking capacity to meet resource adequacy requirements and ensure grid reliability.

On August 29, 2007, the Energy Commission deemed the AFC data-adequate (sufficient data to proceed) and assigned a Committee of two Commissioners to conduct proceedings.

On October 5, 2007, the Committee issued a Notice of "Informational Hearing and Site Visit." 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 Sentinel project. The Committee conducted a Site Visit to tour the proposed project site and then convened a public Informational Hearing at the Carl May Center in the City of Desert Hot Springs. At that event, the Committee, interested governmental agencies, and other public participants discussed issues related to development of the project, described the Commission's review process, and explained opportunities for public participation. On October 15, 2007, the Committee issued its Scheduling Order and ultimately issued a Revised Scheduling Order on August 8, 2008.

In the course of review, Staff conducted public workshops on November 14, 2007, January 24, 2008, April 17, 2008, June 12, 2008, June 20, 2008, June 27, 2008, and September 3, 2008, to discuss issues with the Applicant, governmental agencies, and any interested members of the public.

Staff issued its Preliminary Staff Assessment (PSA) on July 31, 2008, and issued its Final Staff Assessment (FSA) on October 10, 2008.

A Notice of Prehearing Conference and Notice of Evidentiary Hearing was issued by the Committee on October 1, 2008. Both the Prehearing Conference and the Evidentiary Hearing were held in Sacramento at the Energy Commission headquarters.

The Committee issued an Evidentiary Hearing Order on October 22, 2008, establishing a schedule for the submission of legal briefs to assist the Committee in reviewing the record and drafting the PMPD.

The Committee published the PMPD on October 5, 2010, and scheduled a Committee Conference for November 2, 2010, where the parties and the public will offer comments on the PMPD. Notice of this meeting was sent to all parties and published in a general circulation publication. The 30-day comment period on the PMPD will expire on November 4, 1020.

I. PROJECT DESCRIPTION AND PURPOSE

On June 25, 2007, CPV Sentinel, LLC filed an Application for Certification (AFC) with the California Energy Commission to construct and operate the CPV Sentinel Energy Project, which has a combined nominal generating capacity of 850 megawatts.

1. Project Site

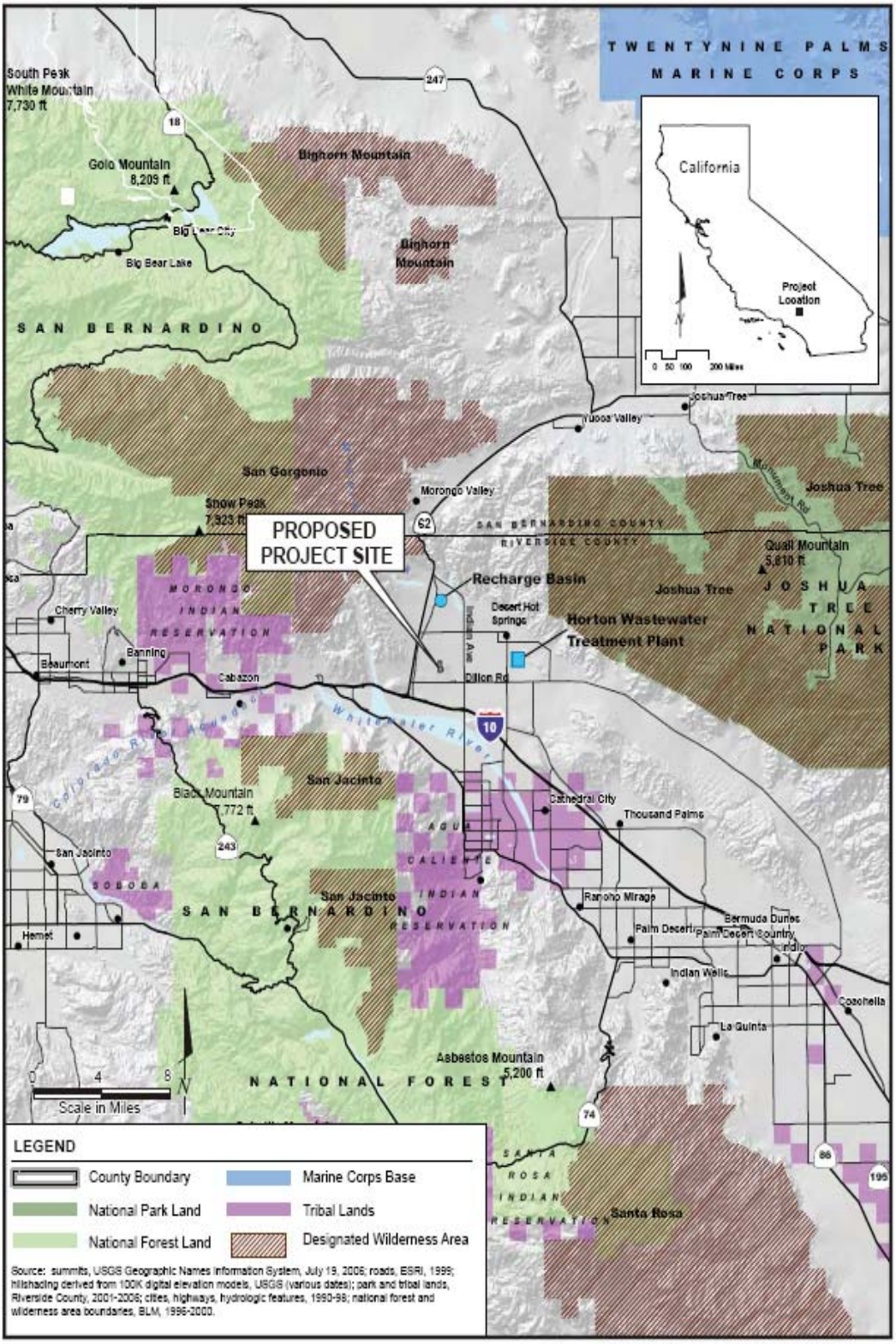
The power plant, transmission lines, and portions of the gas line and construction laydown area will be located within unincorporated Riverside County. Portions of the construction laydown area and portions of the gas line route will be located within the city of Palm Springs. The site is situated approximately 8 miles northwest of the center of Palm Springs and 4.5 miles west of the center of Desert Hot Springs. (Ex. 200, p. 3-2.)

The project site is located approximately 1.3 miles east of State Route 62 (SR 62, also referred to as Twentynine Palms Highway), 1.7 miles north of Interstate 10 (I-10), and 1.3 miles west of Indian Avenue. Powerline Roads North and South run along the south side of the property. Access to the site would be available from Dillon Road north onto the access road to the project site. Access to Dillon Road is from the Dillon Road exit off SR 62 and from the Indian Avenue exit off I-10. (Ex. 200, p. 3-2.)

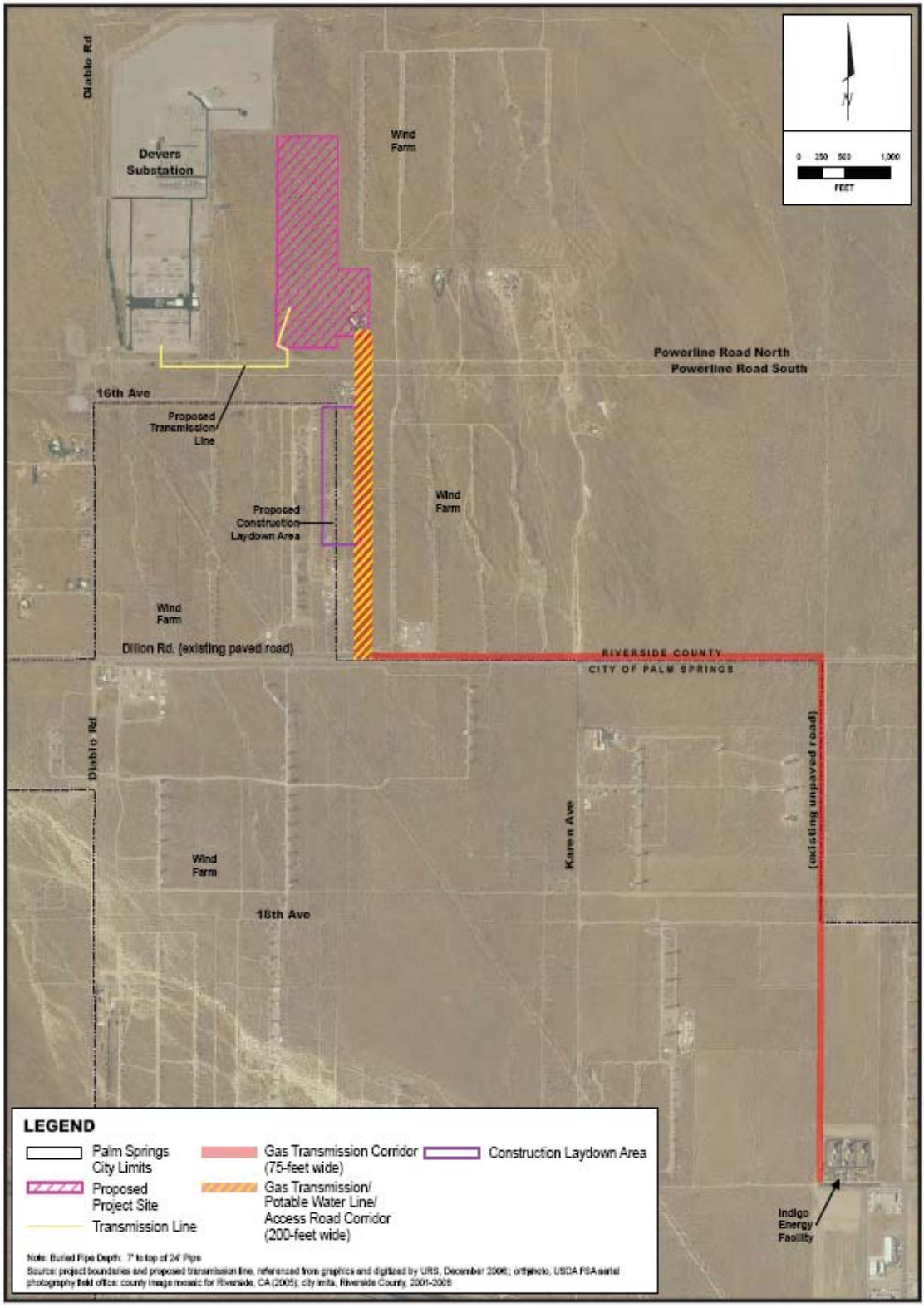
Project Description Figure 1 shows the regional setting, and **Project Description Figure 2** provides the local setting for the project. **Project Description Figure 3** shows the general arrangement while **Project Description Figure 4** provides a simulation of the project. (Ex. 200, p. 3-2.)

The 37-acre power plant site is currently vacant. The surrounding area is primarily characterized by industrial use with extensive development of wind energy and transmission infrastructure. The Devers substation is approximately 700 feet to the west of the project site, and the Indigo Energy Facility is approximately 1.8 miles to the southeast. The power plant site is zoned W2 (Controlled Development Area) and designated as PF (Public Facilities) in the

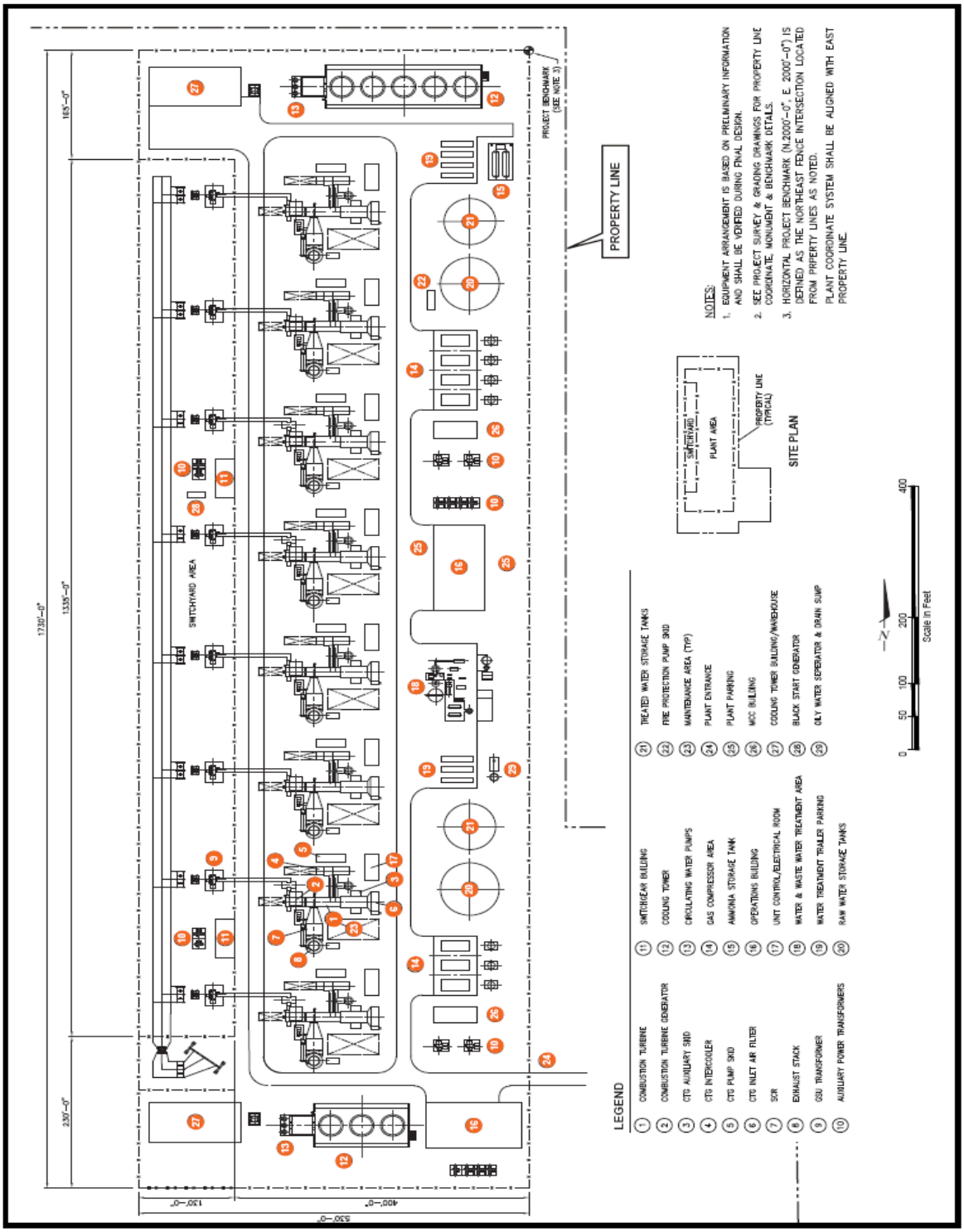
PROJECT DESCRIPTION – FIGURE 1
REGIONAL SETTING



PROJECT DESCRIPTION – FIGURE 2
LOCAL SETTING



PROJECT DESCRIPTION FIGURE 3
GENERAL ARRANGEMENT OF THE PROJECT



OCTOBER 2008 PROJECT DESCRIPTION

PROJECT DESCRIPTION - FIGURE 4
GENERAL ARRANGEMENT OF THE PROJECT

OCTOBER 2008 PROJECT DESCRIPTION

Riverside County General Plan. Electrical power-generating facilities are permitted uses within this zoning district and General Plan designation. The nearest current residence to the power plant site is approximately 330 feet to the east. CPV Sentinel has secured site control under an option to purchase this residence, and the structure is currently vacant. (Ex. 200, p. 3-3.)

2. Power Plant

The project consists of eight natural gas-fired, GE Energy LMS100 combustion turbine generators (CTGs) operating in simple-cycle mode. Each exhaust stack will be 13.5 feet in diameter and 90 feet tall. The project will produce up to 850 MW. The facility will employ Best Available Control Technology (BACT) to minimize gas turbine emissions. To achieve BACT, the emissions control system will use water-injected combustors with selective catalytic reduction and oxidation catalyst. Auxiliary equipment will include a spray mist fogging system for cooling the inlet combustion air to improve efficiency and output of the facility; a turbine intercooler; two mechanical draft cooling towers (one five cell and one three cell), each with circulating water pumps; natural gas compressors; generator step-up transformers; emergency generator; fire water pump skid; and water storage tanks. The project will use a crystallizer ZLD system to handle project wastewater. (Ex. 2, p. 2-4.)

3. Associated Facilities

The new CPV Sentinel 230- kV switchyard will be interconnected to the SCE Devers Substation 230-kV bus by building a new 2,300-foot long, 230-kV single-circuit overhead transmission line with steel reinforced aluminum conductor on nine 85-foot to 115-foot high tubular steel poles. About 1,850 feet of the line will be outside of the CPV Sentinel plant or Devers substation boundaries and this portion of the line will follow the right of way of existing SCE 230-kV and 115-kV lines adjacent to Powerline Road. (Ex. 200, p. 3-3.)

The new CPV Sentinel 230-kV switchyard is a single bus arrangement for nine switch bays. Each bay will have a single SF6 gas-insulated circuit breaker. Eight of the breakers will be connected by overhead conductors to the high voltage terminals of the respective Generator Step-up Transformer. The remaining switch bay and circuit breaker will be used for the new 230-kV overhead interconnection line to the Devers 500/230/115-kV Substation. The Applicant will build, own, and operate the CPV Sentinel switchyard. (*Id.*)

The Applicant will construct a 3,200-foot-long road extending off Dillon Road to the project site and widen the associated intersection at Dillon Road and the site access road. (Ex. 200, p. 3-4.)

Fuel will be supplied to the project site via a 2.6-mile-long, 24-inch-diameter natural gas line extending from the Indigo Energy Facility to the CPV Sentinel site. (*Id.*)

Potable water for the project will be supplied by either on-site wells that will also be used for process water supply, or a 3,200-foot-long potable water supply line extension to the project site from a current Mission Springs Water District's (MSWD) municipal line existing along Dillon Road. (Ex. 200, p. 3-4.)

Plant operations will require up to 1,100 acre feet per year (AFY) of water, with an expected flow range of 1,626 gallons per minute (gpm) to 2,059 gpm with all eight units operating. The project will require approximately 1,975 gpm of raw water makeup when operating at full plant load during average summer ambient conditions [90° F, 30.2 percent relative humidity (RH)]. Maximum water requirements on a peak ambient summer day (120° F, 12.7 percent RH) will be 2,059 gpm. Key plant raw water uses will include makeup to the cooling tower systems, makeup to the mobile demineralizer system (MDS), and makeup to the service water system. (Ex. 2, p. 2-8.)

Water supply wells will be installed on the project site. Water will be routed from these wells to the raw water storage tanks via one or more water lines. The on-site storage tanks have the capacity for approximately 24 hours of operation. In addition, one of the raw water storage tanks contains a fire water reserve, accessible only to the fire water pumps, equal to 2 hours of fire system flow. Demineralized water will be produced on-site by mobile trailer units containing demineralized water systems. (Ex. 2, p. 2-8.)

To off-set their groundwater use, CPV Sentinel will purchase water for importation equal to 108 percent of the CPV Sentinel project's groundwater production, and utilize Desert Water Agency's (DWA) entitlement as a State Water Project contractor to convey the imported water via the California Aqueduct. CPV Sentinel will also fund the installation of a recycled water line to replace the Palm Springs National Golf Course's current use of fresh water from private groundwater wells for irrigation purposes. Additionally, CPV Sentinel will fund installation of system controllers that use evapotranspiration and ambient temperature to limit outdoor irrigation for a portion of existing DWA customers to

complement DWA's program for installation of system controllers in new homes. These programs will conserve fresh water supplies throughout DWA's Service Area. (Ex. 200, p. 3-5.)

The proposed project would use a zero liquid discharge (ZLD) system, comprised of membrane-based wastewater treatment processes (microfiltration and reverse osmosis) coupled with a crystallizer system. This process would result in zero liquid wastewater discharge from the site. Instead, the ZLD would generate a salt cake that would be transported to, and disposed of in a landfill facility. (Ex. 200, p. 3-4.)

4. Construction and Operation

The CPV Sentinel project is expected to take about 18 months for construction. The construction workforce would average 208 workers per month and would peak during the sixth month, with up to 371 workers on-site. Construction costs are estimated to be $440 million. (Ex. 2, pp. 2-26; 2-61.)

During construction, equipment and materials laydown, storage, construction equipment parking, small fabrication areas, and office trailers will be on-site. Parking during construction at the main site will be located on 2 acres near the power plant. The parking area will not be fenced to maintain access to the operating windmills and power lines. In addition, approximately 14 acres (including the 2 acres for parking identified above) will be used off-site for a construction laydown area. The proposed 14-acre laydown area is an undeveloped area within an existing wind farm (see **Project Description Figure 2)**. This area is currently used for equipment laydown by the wind farm operator. Parking will be primarily at the south portion of the laydown area, and equipment laydown will occur at the northern portion of the construction laydown (closest to the project site). (Ex. 2, p. 2-24.)

The project is expected to be operated by approximately 10 full-time employees and four part-time staff. CPV Sentinel will sign an operations and maintenance agreement with a third party operations and maintenance provider who will be responsible for hiring full-time and part-time employees. The facility will be capable of operation 24 hours per day, 7 days per week. However, it is anticipated that operations of five of the eight units will not exceed 2,805 hours per year, while three of the eight units are not anticipated to operate more than 3,406 hours, given the permit limits. The facility is expected to operate during the

hottest hours of the summer when demand for electricity is the highest. The planned life of the generating facility is 30 years. (Ex. 2, pp. 2-26; 2-29.)

Electricity demand and availability fluctuate greatly depending on the weather and other factors. It is anticipated that the facility will operate at 100 percent load when dispatched during peak energy demand. At certain times, the facility may be operated in load following mode, where the output of a given unit would be adjusted, either by schedule or automatic generation control, to meet load pursuant to schedules from the power purchaser or as necessary by CAISO. When on-line and synchronized, the units may be called upon to provide spinning reserves or regulation service. Each turbine will be equipped with automatic generating control (AGC), which will allow each turbine to respond to remote dispatch control signals on a second by second basis. At certain times of the day, week, or year, the sum of the contractual load and spot market sales and demand could drop to a level where it would be economically favorable to shut down one or more CTGs. This mode of operation could occur during late evening and early morning hours, and weekends, when contractual load could decrease and/or market sales would not be economically viable. (Ex. 2, pp. 2-27.)

5. Purpose of the Project

The Applicant‘s objectives are to design, build, own, and operate the CPV Sentinel project in order to meet the need for additional electric generation capacity, energy, and ancillary services in Southern California. In particular, the Applicant intends to supply quick-start peaking capacity needs identified by Southern California Edison (SCE), the Energy Commission, the California Public Utilities Commission (CPUC), and the CAISO for the Los Angeles Basin Local Capacity Requirements Area. In February 2007, SCE executed a long-term contract for the capacity, energy, and ancillary services for five of the eight proposed CPV Sentinel Units, to be delivered to SCE at Devers substation by August 1, 2010. In March 2008, SCE signed an additional long-term power purchase agreement for the remaining three CPV Sentinel Units for an on-line date of May 1, 2012.

The CPV Sentinel AFC identifies several basic objectives for the development of the proposed power project. These objectives include:

- To construct and operate an 850-MW, natural gas-fired, simple-cycle generating facility specifically designed to serve electricity demand in the Southern California region;

- To provide competitively priced electricity in the form of peaking capacity, energy, and ancillary services for sale to electric service providers. To help meet expected electrical demand growth in Southern California, particularly in the rapidly growing portions of western Riverside County and the Coachella Valley;

- To generate power at a location near the electric load, thereby increasing reliability of the regional electricity grid and reducing regional dependence on imported power;

- To site the project at a location zoned and planned for industrial use with ready access cooling water, natural gas, and electrical interconnection;

- To build new generation that will require minimal additional project-specific transmission system upgrades;

- To develop the project in a manner that allows CPV Sentinel, LLC to satisfy its obligations under its power purchase agreements with SCE; and

- To develop a project that provides a reasonable rate of return on CPV Sentinel, LLC's investment. (Ex. 200, pp. 3-1 to 3-2.)

6. Facility Closure

CPV Sentinel is designed for an operating life of 30 years. At an appropriate point beyond that, the project would cease operation and close down in such a way that public health and safety and the environment are protected from adverse impacts.

Although the setting for this project does not appear to present any special or unusual closure problems, it is impossible to foresee what the situation would be in 30 years or more when the project ceases operation. Therefore, we have adopted Conditions of Certification which will ensure that plant closure will be consistent with all LORS in effect at the time of closure. These Conditions are found in the **Compliance and Closure** section of this Decision. (Ex. 200, pp. 7-1 to 7-19.)

FINDINGS OF FACT

Based on the undisputed evidentiary record, we find as follows:

1. CPV Sentinel, LLC will construct, own, and operate the CPV Sentinel Energy Project.

2. The CPV Sentinel Energy Project is a nominal 850 MW power plant consisting of eight natural gas-fired GE Energy LMS100 combustion turbine generators operating in simple-cycle mode utilizing two mechanical draft-cooling towers.

3. The CPV Sentinel Energy Project will be located within unincorporated Riverside County, California approximately 8 miles northwest of the center of Palm Springs and 4.5 miles west of the center of Desert Hot Springs.

4. Portions of the construction laydown area and portions of the gas line route will be located within the City of Palm Springs.

5. The 37-acre power plant site is currently vacant.

6. The surrounding area is primarily characterized by industrial use with extensive development of wind energy and transmission infrastructure.

7. The SCE Devers Substation is approximately 700 feet to the west of the project site.

8. The CPV Sentinel Energy Project 230 kV switchyard will connect to the SCE Devers Substation by a 2,300-foot-long, 230-kV single circuit overhead transmission line on nine 85-foot to 115-foot high tubular steel poles.

9. CPV Sentinel will construct a 3,200-foot-long road extending off Dillon Road to the project site and widen the associated intersection at Dillon Road.

10. Fuel will be supplied to the project site via a 2.6-mile-long, 24-inch-diameter natural gas line extending from the Indigo Energy Facility to the CPV Sentinel site.

11. Potable water for the project will either be supplied by on-site wells or a 3,200-foot-long potable water supply line extension to the project site from a Mission Springs Water District municipal line existing along Dillon Road.

12. Plant operations will require up to 1,100-acre feet per year (AFY) of water from ground water supply wells that will be installed on the project site.

13. Water importation and conservation program agreements between CPV Sentinel and the Desert Water Agency will offset the project's groundwater use and result in a net benefit to the underlying groundwater basin.

14. The CPV Sentinel Energy Project will offer quick-start peaking capacity to supply electricity for the Los Angeles Basin Local Capacity Requirements Area.

15. Applicant has described additional environmental benefits as objectives of the CPV Sentinel Energy Project.

16. The project and its objectives are adequately described in the relevant documents contained in the record.

CONCLUSIONS OF LAW

We therefore conclude that the CPV Sentinel Energy Project 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.

II. PROJECT ALTERNATIVES

As a general rule, the California Environmental Quality Act (CEQA), its Guidelines, and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which meet the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts. (Cal. Code Regs., tit. 14, §§ 15126.6(c) and (e); *see also*, tit. 20, § 1765.)

The range of alternatives, including the "no project" alternative, is governed by the "rule of reason" which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative where the effect cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f)(3).]

The undisputed evidence in this case demonstrates that the project, as mitigated, will not create any significant adverse impacts.

SUMMARY AND DISCUSSION OF THE EVIDENCE

There were no Intervenors in the CPV Sentinel AFC so Applicant and Staff were the only parties to submit substantive evidence on this topic. (Moved into evidence 11/3/08 RT 19; received into evidence 12/5/08.)

1. Project Objectives

The evidence (Exs. 23, pp. 8-1 to 8-2; 200, pp. 6-4) characterizes the project objectives as:

- To safely construct and operate a nominal 850-MW, natural-gas-fired, simple cycle generating facility;
- To provide quick-start peaking capacity, energy, and ancillary services;
- To meet electrical demand in the Southern California region, particularly Riverside County and the Coachella Valley;
- To deliver electricity to the SCE Devers Substation at 220 kV;
- To have proximity to the substation as well as gas and water infrastructure;

- To generate power at a location near the electric load, thus increasing reliability of the regional electricity grid and reducing regional dependence on imported power;
- To site the project at a location zoned and planned for industrial use with access to cooling water, natural gas, and electrical interconnection;
- To build new generation that will require minimal additional project-specific transmission system upgrades;
- To develop the proposed project in a manner that allows CPV Sentinel to satisfy its obligations under its power purchase agreement with SCE; and
- To develop a project that provides a reasonable rate of return on CPV Sentinel's investment.

To achieve these objectives, the evidence indicates without contradiction that any alternative site should be adjacent to or near SCE's Devers Substation to minimize or avoid constructing additional transmission lines; located in an area appropriate for industrial development and compatible with Riverside County general plans and zoning ordinances; in close proximity to water, transmission, and land gas infrastructure; and able to avoid significant impact on the environment with implementation of reasonable mitigation measures. (Exs. 23, pp. 8-1 to 8-2; 200, pp. 6-3 to 6-4.)

2. Alternative Sites

The evidence identifies and describes the five alternative sites considered; all located near the SCE Devers Substation. (Exs. 23, pp. 8-3 to 8-4; 200, pp. 6-5 to 6-8.)

Four of the five alternative site locations were rejected for a variety of reasons. Specifically, the area to the south of SCE Devers Substation is unavailable due to the zoning of this site where wind turbines are currently being developed. The area directly east of Devers Substation is owned by SCE and is not available to CPV Sentinel. The area 3,400 feet further to the east of Devers Substation has been approved by the Riverside County Planning Commission for development by the Dillon Wind Farm and therefore is not a feasible alternative. The area to the west of Devers Substation has also been approved for development by the Dillon Wind Farm and is likewise not a feasible alternative. (Exs. 23, pp. 8-3 to 8-4; 200, pp. 6-5 to 6-6.)

The area just to the north of the substation consists of multiple 5- to 10-acre lots owned by multiple private landowners. These sites would have to be

aggregated, requiring procurement from multiple landowners. Even though this site is farther away from the nearest residence and residential area as compared to the proposed site, the natural gas pipeline, potable water line, and access road corridor would have to be extended farther north by over 3,000 feet—potentially resulting in greater land use impacts. All other environmental impacts, including air quality impacts, from this site would be similar to the proposed site. (Exs. 23, pp. 8-4; 200, pp. 6-6 to 6-8.)

Based upon the uncontroverted evidence, we conclude that none of the alternative sites considered are superior to the proposed site.

3. Alternative Fuels and Technologies

The record examines various generation technology alternatives, as well as conservation and demand side management. (Exs. 23, pp. 8-4 to 8-6; 200, pp. 6-8 to 6-11.) The various generation alternatives considered by the parties were all deemed inferior to the project site due to infeasibility, failure to conform to the project objectives, or lack of environmental benefit. (Ex. 200, p. 6-9.)

Although viable, solar and wind technologies would require significantly greater land use and would not provide peaking capacity. The evidence further established that geothermal, biomass, and hydroelectric generation technologies would not be feasible in the Coachella Valley. No evidence suggests that an alternative fuel source would be superior to that proposed. (Exs. 23, pp. 8-4 to 8-6; 200, pp. 6-9 to 6-11.)

One alternative to meeting California's electricity demand with new generation is to reduce the demand for electricity. Such demand side measures include programs that increase energy efficiency, reduce electricity use, or shift electricity use away from peak hours of demand. (Ex. 200, p. 6-9.)

Even with a great variety of federal, state, and local demand side management programs, the state's electricity use is still increasing as a result of population growth and business expansion. Current demand side programs are not sufficient to satisfy future electricity needs, nor is it likely that even more aggressive demand side programs could accomplish this, given the economic and population growth rates of the last 10 years. Therefore, although it is likely that federal, state, and local demand side programs will receive even greater emphasis in the future, both new generation and new transmission facilities are needed in the immediate future and beyond to maintain adequate supplies. (Ex. 200, p. 6-9.)

4. No Project Alternative

The “no project” alternative assumes that the project is not constructed. The purpose of this analysis is to provide a comparison of the impacts of approving the proposed project against the impacts of not approving it. [14 Cal. Code Regs., § 15126.6(i).]

If the project were not built, the region would not benefit from a local and efficient source of 850 MW of new generation that this facility would provide. A primary benefit of the CPV Sentinel project is that it would serve load demands of cities that include Desert Hot Springs, Palm Springs, Cathedral City, and Palm Desert in the Coachella Valley. The evidence also demonstrates that the CPV Sentinel project would also have the ability to compensate for the intermittency of solar and wind plants.

Further, if the CPV Sentinel project were not built, other benefits would not be realized, such as, the installation of a recycled water line to serve the Palm Springs National Golf Course (PSNGC) to convert the golf course irrigation water supply from groundwater to recycled water; the replacement of existing residential irrigation controllers on at least 4,800 existing homes with new water conserving irrigation controllers within the MCGS and adjoining sub-basins and a water transfer and exchange program to replenish groundwater in the MCGS with fresh Colorado River water equal to the amount of project water extracted from onsite wells.

In the absence of the CPV Sentinel project, other power plants would likely be constructed in the project area or elsewhere in California to serve the demand that would have been met with the CPV Sentinel project. If those plants were to use dry cooling, the use of fresh water would be significantly reduced. However, new plants constructed in the area would likely have similar air quality effects to those of the proposed CPV Sentinel. If no new natural gas plants were constructed, SCE would have to rely on older power plants. These plants could consume more fuel and emit more air pollutants per kilowatt-hour generated than would the CPV Sentinel project. In the short term, a more likely result is that existing plants, many of which produce higher level of pollution, would operate more than they do now. The evidence shows that the “no project” alternative may have serious, long-term consequences on air quality and water supply. (Ex. 200, pp. 6-11 to 6-12.)

FINDINGS OF FACT

Based upon the uncontroverted evidence, including that presented on each subject area described in other portions of this Decision, we find and conclude as follows:

1. The record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.
2. The record contains an adequate review of alternative sites, linear routings, fuels, technologies, and the “no project” alternative.
3. Alternative fuels and technologies are not capable of meeting project objectives.
4. No site alternative identified is capable of meeting the stated project objectives and applicable siting criteria.
5. No feasible alternative site has been identified which would lessen project impacts.
6. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts.
7. Implementation of the Conditions of Certification contained in this Decision will ensure that the CPV Sentinel project does not create any significant direct, indirect, or cumulative adverse environmental impacts.

CONCLUSION OF LAW

1. We conclude, therefore, that the record contains a sufficient analysis of a reasonable range of alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, their respective regulations, and the Coastal Act.

No Conditions of Certification are required for this topic.

III. COMPLIANCE AND CLOSURE

Public Resources Code section 25532 requires the Commission to establish a post-certification monitoring system. The purpose of this requirement is to assure that certified facilities are constructed and operated in compliance with applicable laws, ordinances, regulations, and standards, (LORS) as well as the specific Conditions of Certification adopted as part of this Decision.

SUMMARY OF THE EVIDENCE

The evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the CPV Sentinel Energy Project (Sentinel) is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the Project Owner and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.

Compliance with the Conditions of Certification contained in this Decision is verified through mechanisms such as periodic reports and site visits. The Plan also contains requirements governing the planned closure, as well as the unexpected temporary and unexpected permanent closure, of the Project.

The Compliance Plan is composed of two broad elements. The first element establishes the "General Conditions," which:

- Set forth the duties and responsibilities of the Compliance Project Manager (CPM), the Project Owner, delegate agencies, and others;
- Set forth the requirements for handling confidential records and maintaining the compliance record;
- Set forth procedures for settling disputes and making post-certification changes;
- Set forth the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed Conditions; and
- Set forth requirements for facility closure.

The second general element of the Plan contains the specific "Conditions of Certification." These are found following the summary and discussion of each individual topic area in this Decision. The individual Conditions contain the measures required to mitigate potentially adverse Project impacts associated with construction, operation, and closure to levels of insignificance. Each Condition also includes a verification provision describing the method of assuring that the Condition has been satisfied.

The contents of the Compliance Plan are intended to be implemented in conjunction with any additional requirements contained in the individual Conditions of Certification.

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Sentinel Project will be designed, constructed, operated, and closed in conformity with applicable law.

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

We therefore conclude that the compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532. Furthermore, we adopt the following Compliance Plan as part of this Decision.

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

The following terms and definitions are used to establish when Conditions of Certification are implemented.

Pre-construction Site Mobilization

Pre-construction site mobilization consists of limited activities at the site to allow for the installation of fencing, construction trailers, construction trailer utilities, and construction trailer parking at the site. Limited ground disturbance, grading, and trenching associated with the above mentioned pre-construction activities is considered part of pre-construction site mobilization. Walking, driving or parking a passenger vehicle, pickup truck and light vehicles is allowable during pre-construction site mobilization.

Construction

Onsite work to install permanent equipment or structures for any facility. This includes the following:

- Ground disturbance: Refers to activities that result in the removal of top soil or vegetation at the site beyond site mobilization needs, and for access roads and linear facilities.

- Grading, boring, and trenching: Refers to activities that result in subsurface soil work at the site and for access roads and linear facilities, e.g., alteration of the topographical features such as leveling, removal of hills or high spots, moving of soil from one area to another, and removal of soil.

Not withstanding the definitions of ground disturbance, and grading, boring, and trenching above, construction does **not** include the following:

1. the installation of environmental monitoring equipment;

2. a soil or geological investigation;

3. a topographical survey;

4. any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; and

5. any work to provide access to the site for any of the purposes specified in “Construction” 1, 2, 3, or 4 above.

Start of Commercial Operation

For compliance monitoring purposes, “commercial operation” begins after the completion of start-up and commissioning, when the power plant has reached reliable steady-state production of electricity at the rated capacity. At the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

The Compliance Project Manager (CPM) shall oversee the compliance monitoring and is responsible for:

1. Ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision
2. Resolving complaints
3. Processing post-certification changes to the Conditions of Certification, project description (petition to amend), and ownership or operational control (petition for change of ownership) (See instructions for filing petitions)
4. Documenting and tracking compliance filings
5. Ensuring that compliance files are maintained and accessible

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies, Energy Commission, and staff when handling disputes, complaints, and amendments.

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a Condition of Certification requires CPM approval, the approval will involve all appropriate Energy Commission staff and management. All submittals must include searchable electronic versions (pdf or word files).

Pre-construction and Pre-operation Compliance Meeting

The CPM usually schedules pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings is to assemble both the Energy Commission’s and project owner’s technical staff to review the status of all pre-construction or pre-operation requirements, contained in the Energy Commission’s Conditions of Certification. This is to confirm that all applicable Conditions of Certification have been met, or if they have not been met, to ensure that the proper action is taken. In addition, these meetings ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight and to preclude any last minute,

unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

The Energy Commission shall maintain the following documents and information as a public record, in either the Compliance file or Dockets file, for the life of the project (or other period as required):

1. All documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility

2. All monthly and annual compliance reports filed by the project owner

3. All complaints of noncompliance filed with the Energy Commission

4. All petitions for project or Condition of Certification changes and the resulting staff or Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

The project owner is responsible for ensuring that the compliance Conditions of Certification and all other Conditions of Certification that appear in the Commission Decision are satisfied. The compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, Conditions of Certification, or ownership. Failure to comply with any of the Conditions of Certification or the compliance conditions may result in reopening of the case and revocation of Energy Commission certification; an administrative fine; or other action as appropriate. A summary of the Compliance Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section.

COMPLIANCE CONDITIONS OF CERTIFICATION

Unrestricted Access (COMPLIANCE-1)

The CPM, responsible Energy Commission staff, and delegated agencies or consultants shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on-site, for the purpose of conducting audits, surveys, inspections, or general 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.

Compliance Record (COMPLIANCE-2)

The project owner shall maintain project files on-site or at an alternative site approved by the CPM for the life of the project, unless a lesser period of time is

specified by the Conditions of Certification. The files shall contain copies of all "as-built" drawings, documents submitted as verification for conditions, and other project-related documents.

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.

Compliance Verification Submittals (COMPLIANCE-3)

Each Condition of Certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM.

Verification of compliance with the Conditions of Certification can be accomplished by the following:

1. Monthly and/or annual compliance reports, filed by the project owner or authorized agent, reporting on work done and providing pertinent documentation, as required by the specific Conditions of Certification;

2. Appropriate letters from delegate agencies verifying compliance;

3. Energy Commission staff audits of project records; and/or

4. Energy Commission staff inspections of work, or other evidence that the requirements are satisfied.

Verification lead times associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

A cover letter from the project owner or 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, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal**. The project owner shall also identify those submittals **not** required by a Condition of Certification with a statement such as: "This submittal is for information only and is not required by a specific Condition of Certification." When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and CEC submittal number.

The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed by the project owner or an agent of the project owner.

All hardcopy submittals shall be addressed as follows:

Compliance Project Manager
Docket No. 07-AFC-3C
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

Those submittals shall be accompanied by a searchable electronic copy, on a CD or by e-mail, as agreed upon by the CPM.

If the project owner desires Energy Commission staff action by a specific date, that request shall be made in the submittal cover letter and shall include a detailed explanation of the effects on the project if that date is not met.

Pre-Construction Matrix and Tasks Prior to Start of Construction (COMPLIANCE-4)

Prior to commencing construction, a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix will be included with the project owner's first compliance submittal or prior to the first pre-construction meeting, whichever comes first. It will be submitted in the same format as the compliance matrix described below.

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times for submittal of compliance verification documents to the CPM for Conditions of Certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

Failure to submit compliance documents within the specified lead-time may result in delays in authorization to commence various stages of project development.

If the project owner anticipates commencing project construction as soon as the project is certified, it may be necessary for the project owner to file compliance submittals prior to project certification. Compliance submittals should be completed in advance where the necessary lead time for a required compliance event extends beyond the date anticipated for start of construction. The project owner must understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change, based upon the Commission Decision.

Compliance Reporting

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the Energy Commission Decision. During construction, the project owner or authorized agent will submit Monthly Compliance Reports. During operation, an Annual Compliance Report must be submitted. These reports, and the requirement for an accompanying compliance matrix, are described below. The majority of the Conditions of Certification require that compliance submittals be submitted to the CPM in the monthly or annual compliance reports.

Compliance Matrix (COMPLIANCE-5)

A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of all Conditions of Certification in a spreadsheet format. The compliance matrix must identify:

1. the technical area;
2. the condition number;
3. a brief description of the verification action or submittal required by the condition;
4. the date the submittal is required (*e.g.,* 60 days prior to construction, after final inspection, etc.);
5. the expected or actual submittal date;
6. the date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;
7. the compliance status of each condition, *e.g.,* “not started,” “in progress” or “completed” (include the date); and
8. if the condition was amended, the date of the amendment.

Satisfied conditions shall be placed at the end of the matrix.

Monthly Compliance Report (COMPLIANCE-6)

The first Monthly Compliance Report is due one month following the Energy Commission business meeting date upon which the project was approved, unless otherwise agreed to by the CPM. The first Monthly Compliance Report shall include the AFC number and an initial list of dates for each of the events identified on the **Key Events List** found at the end of this section of this Decision**.**

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and an electronic searchable version of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports 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 Monthly Compliance Report. Each of these items must be identified in the transmittal letter, as well as the conditions they satisfy and submitted as attachments to the Monthly Compliance Report;

3. An initial, and thereafter updated, compliance matrix showing 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);

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, or 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 complaints, notices of violation, official warnings, and citations received during the month, a description of the resolution of the resolved actions, and the status of any unresolved actions.

All sections, exhibits, or addendums shall be separated by tabbed dividers or as acceptable by the CPM.

Annual Compliance Report (COMPLIANCE-7)

After construction is complete, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to

by the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by the CPM. Each Annual Compliance Report shall include the AFC number, identify the reporting period and shall contain the following:

1. An updated compliance matrix showing 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 Annual Compliance Report. Each of these items must be identified in the transmittal letter, with the condition it satisfies, and submitted as attachments to the Annual Compliance Report;

4. A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by 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 on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see Compliance Conditions for Facility Closure addressed later in this section]; and

10. A listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved matters, and the status of any unresolved matters.

Confidential Information (COMPLIANCE-8)

Any information that the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit with an application for confidentiality pursuant to Title 20, California Code of Regulations, section 2505(a). Any information that is determined to be confidential shall be kept confidential as provided for in Title 20, California Code of Regulations, section 2501 et. seq.

Annual Energy Facility Compliance Fee (COMPLIANCE-9)

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual compliance fee, which is adjusted annually. The amount of the fee for FY2007-2008 was $17,676. The initial payment is due on the date the Energy Commission adopts the final decision. You will be notified of the amount due. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9th St., Sacramento, CA 95814.

Reporting of Complaints, Notices, and Citations (COMPLIANCE-10)

Prior to the start of construction, the project owner must send a letter to property owners living 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 shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:

http://www.energy.ca.gov/sitingcases/power_plants_contacts.html

Any changes to the telephone number shall be submitted immediately to the CPM, who will update the web page.

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies to the CPM of all complaint forms, including noise and lighting complaints, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **NOISE** Conditions of Certification in this Decision. All other complaints shall be recorded on the complaint form (Attachment A).

FACILITY CLOSURE

At some point in the future, the project will cease operation and close down. At that time, it will be necessary to ensure that the closure occurs in such a way that public health and safety and the environment are protected from adverse impacts. Although the project setting for this project does not appear, at this time, to present any special or unusual closure problems, it is impossible to foresee what the situation will be in 30 years or more when the project ceases operation. Therefore, provisions must be made that provide the flexibility to deal with the specific situation and project setting that exist at the time of closure. LORS pertaining to facility closure are identified in the sections dealing with each

technical area. Facility closure will be consistent with LORS in effect at the time of closure.

There are at least three circumstances in which a facility closure can take place: planned closure, unplanned temporary closure and unplanned permanent closure.

CLOSURE DEFINITIONS

Planned Closure

A planned closure occurs when the facility is closed in an anticipated, orderly manner, at the end of its useful economic or mechanical life, or due to gradual obsolescence.

Unplanned Temporary Closure

An unplanned temporary closure occurs when the facility is closed suddenly and/or unexpectedly, on a short-term basis, due to unforeseen circumstances such as a natural disaster or an emergency.

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner implements the on-site contingency plan. It can also include unplanned closure where the project owner fails to implement the contingency plan, and the project is essentially abandoned.

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

Planned Closure (COMPLIANCE-11)

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 12 months (or other period of time agreed to by the CPM) prior to commencement of closure activities. The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;

2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;

3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and

4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of facility closure, and applicable Conditions of Certification.

Prior to submittal of the proposed facility closure plan, a meeting shall be held between the project owner and the Energy Commission CPM for the purpose of discussing the specific contents of the plan.

In the event that there are significant issues associated with the proposed facility closure plan's approval, or the desires of local officials or interested parties are inconsistent with the plan, the CPM shall hold one or more workshops and/or the Energy Commission may hold public hearings as part of its approval procedure.

As necessary, prior to or during the closure plan process, the project owner shall take appropriate steps to eliminate any immediate threats to public health and safety and the environment, but shall not commence any other closure activities until the Energy Commission approves the facility closure plan.

Unplanned Temporary Closure/On-Site Contingency Plan (COMPLIANCE-12)

In order to ensure that public health and safety and the environment are protected in the event of an unplanned temporary facility closure, it is essential to have an on-site contingency plan in place. The on-site contingency plan will help to ensure that all necessary steps to mitigate public health and safety impacts and environmental impacts are taken in a timely manner.

The project owner shall submit an on-site contingency plan for CPM review and approval. The plan shall be submitted no less than 60 days (or other time agreed to by the CPM) prior to commencement of commercial operation. The approved plan must be in place prior to commercial operation of the facility and shall be kept at the site at all times.

The project owner, in consultation with the CPM, will update the on-site contingency plan as necessary. The CPM may require revisions to the on-site contingency plan over the life of the project. In the annual compliance reports submitted to the Energy Commission, the project owner will review the on-site contingency plan, and recommend changes to bring the plan up to date. Any changes to the plan must be approved by the CPM.

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific Conditions of Certification for the technical areas of Hazardous Materials Management and Waste Management in this Decision.)

In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

In the event of an unplanned temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the circumstances and expected duration of the closure.
If the CPM determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than 12 months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CPM within 90 days of the CPM's determination (or other period of time agreed to by the CPM).

Unplanned Permanent Closure/On-Site Contingency Plan (COMPLIANCE-13)

The on-site contingency plan required for unplanned temporary closure shall also cover unplanned permanent facility closure. All of the requirements specified for unplanned temporary closure shall also apply to unplanned permanent closure.

In addition, the on-site contingency plan shall address how the project owner will ensure that all required closure steps will be successfully undertaken in the event of abandonment.

In the event of an unplanned permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, or e-mail, within 24 hours and shall take all necessary steps to implement the on-site contingency plan. The project owner shall keep the CPM informed of the status of all closure activities.

A closure plan, consistent with the requirements for a planned closure, shall be developed and submitted to the CPM within 90 days of the permanent closure or another period of time agreed to by the CPM.

Post Certification Changes to the Energy Commission Decision: Amendments, Ownership Changes, Insignificant Project Changes and Verification Changes (COMPLIANCE-14)

The project owner must petition the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. **It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.** Implementation of a project modification without first securing Energy Commission, or Energy Commission staff approval, may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

A petition is required for **amendments** and for **insignificant project changes** as specified below. Both shall be filed as a "Petition to Amend." Staff will determine if the change is significant or insignificant. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of approval and the process that applies are explained below. They reflect the provisions of Section 1769 at the time this condition was drafted. If the Commission's rules regarding amendments are amended, the rules in effect at the time an amendment is requested shall apply.

Amendment

The project owner shall petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769(a), when proposing modifications to the project (including linear facilities) design, operation, or performance requirements. If a proposed modification results in deletion or change of a Condition of Certification, or makes changes that would cause the project not to comply with any applicable laws, ordinances, regulations or standards, the petition will be processed as a formal amendment to the final decision, which requires public notice and review of the Energy Commission staff analysis, and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of section 1769(a). Upon request, the CPM will provide you with a sample petition to use as a template.

Change of Ownership

Change of ownership or operational control also requires that the project owner file a petition pursuant to section 1769 (b). This process requires public notice and approval by the full Commission. The petition shall be in the form of a legal brief and fulfill the requirements of section 1769(b). Upon request, the CPM will provide you with a sample petition to use as a template.

Insignificant Project Change

Modifications that do not result in deletions or changes to Conditions of Certification, and that are compliant with laws, ordinances, regulations and standards may be authorized by the CPM as an insignificant project change pursuant to section 1769(a) (2). This process usually requires minimal time to complete, and it requires a 14-day public review of the Notice of Insignificant Project Change that includes staff's intention to approve the modification unless substantive objections are filed. These requests must also be submitted in the form of a "petition to amend" as described above.

Verification Change

A verification may be modified by the CPM without requesting an amendment to the decision if the change does not conflict with the Conditions of Certification and provides an effective alternate means of verification.

CBO DELEGATION AND AGENCY COOPERATION

In performing construction and operation monitoring of the project, Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Energy Commission staff may delegate CBO responsibility to either an independent third party contractor or the local building official. Energy Commission staff retains CBO authority when selecting a delegate CBO, including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

Energy Commission staff may also seek the cooperation of state, regional and local agencies that have an interest in environmental protection when conducting project monitoring.

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of this Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision. The specific action and amount of any fines the Energy Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the

Energy Commission pursuant to Title 20, California Code of Regulations, section 1237, but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by future law or regulations.

The Energy Commission has established a toll-free ***Compliance*** telephone number of **1-800-858-0784** for the public to contact the Energy Commission about power plant construction or operation-related questions, complaints or concerns.

Informal Dispute Resolution Process

The following procedure is designed to informally resolve disputes concerning the interpretation of compliance with the requirements of this compliance plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate an informal dispute resolution process. Disputes may pertain to actions or decisions made by any party, including the Energy Commission's delegate agents.

This process may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1237, but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and Conditions of Certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The process encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be brought before the full Energy Commission for consideration via the complaint and investigation procedure.

Request for Informal Investigation

Any individual, group, or agency may request the Energy Commission to conduct an informal investigation of alleged noncompliance with the Energy Commission's terms and Conditions of Certification. All requests for informal investigations shall be made to the designated CPM.

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter. Within seven working days of the CPM's request, provide a written report to the CPM of the results of the investigation, including

corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to also provide an initial verbal report, within 48 hours.

Request for Informal Meeting

In the event that either the party requesting an investigation or the Energy Commission staff is not satisfied with the project owner's report, investigation of the event, or corrective measures proposed or undertaken, either party may submit a written request to the CPM for a meeting with the project owner. Such request shall be made within 14 days of the project owner's filing of its written report. Upon receipt of such a request, the CPM shall:

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;

2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;

3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and

4. After the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum that fairly and accurately identifies the positions of all parties and any understandings reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

Any person may file a complaint with the Energy Commission's Dockets Unit alleging noncompliance with a Commission decision adopted pursuant to Public Resources Code section 25500. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1237.

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

EVENT DESCRIPTION	DATE
Certification Date	
Obtain Site Control	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Grading	
Start Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Gas Turbine	
Obtain Building Occupation Permit	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
Synchronization with Grid and Interconnection	
Complete T/L Construction	
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	

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

CONDITION NUMBER	SUBJECT	DESCRIPTION
COMPLIANCE-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COMPLIANCE-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.
COMPLIANCE-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed or the project owner or his agent.
COMPLIANCE-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until the all of the following activities/submittals have been completed: ▪ property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns, ▪ a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction, ▪ all pre-construction conditions have been complied with, ▪ the CPM has issued a letter to the project owner authorizing construction.
COMPLIANCE-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 status of all compliance Conditions of Certification.
COMPLIANCE-6	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Energy Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.

CONDITION NUMBER	SUBJECT	DESCRIPTION
COMPLIANCE-7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COMPLIANCE-8	Confidential Information	Any information the project owner deems confidential shall be submitted to the Energy Commission's Dockets Unit with a request for confidentiality.
COMPLIANCE-9	Annual fees	Payment of Annual Energy Facility Compliance Fee
COMPLIANCE-10	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COMPLIANCE-11	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least 12 months prior to commencement of a planned closure.
COMPLIANCE-12	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COMPLIANCE-13	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COMPLIANCE-14	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a Condition of Certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.

ATTACHMENT A
COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: AFC Number:
COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date and time complaint received: Indicate if by telephone or in writing (attach copy if written): Date of first occurrence:
Description of complaint (including dates, frequency, and duration):
Findings of investigation by plant personnel: Indicate if complaint relates to violation of a CEC requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date 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: _____ Date:

(Attach additional pages and supporting documentation, as required.)

IV. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the Sentinel project consists of separate analyses that examine facility design, engineering, efficiency, and reliability aspects. These analyses include the on-site power generating equipment and project-related linear facilities.

A. FACILITY DESIGN

This review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to project design and construction. The evidentiary presentations were uncontested. (11/30/08 RT 13-14, 28-31; Exs. 1; 26; 27; 28; 29; 30; 69; 101; 200, § 5.1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Application for Certification (AFC) describes the preliminary facility design. In considering the adequacy of the plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes, as appropriate, the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 200, pp. 5.1-1 to 5.1-2.)

Staff proposed several Conditions of Certification, which we have adopted, that establish a design review and construction inspection process to verify compliance with applicable design standards and special design requirements. (Ex. 200, p. 5.1-4.) The project will be designed and constructed in conformance with the latest edition of the California Building Standards Code (currently the 2007 CBSC) and other applicable codes and standards in effect at the time design approval and construction actually begin. Condition of Certification **GEN-1** incorporates this requirement.

Staff considered potential geological hazards and reviewed the preliminary project design with respect to grading, flood protection, erosion control, site drainage, and site access in addition to the criteria for designing and constructing related linear facilities such as the natural gas pipeline and the transmission interconnection facilities. (Ex. 200, pp. 5.1-2 to 5.1-3; see also, the **Geology and**

Paleontology section of this Decision.) The evidence establishes that the project will incorporate accepted industry standards. This includes design practices and construction methods for preparing and developing the site. (Exs. 26; 200, p. 5.1-3.) Conditions **CIVIL-1** through **CIVIL-4** ensure that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production and facilities used for storage of hazardous or toxic materials, as well as those capable of becoming potential health and safety hazards if not constructed properly. (Exs. 26; 200, p. 5.1-3.; see also Response to Applicant's Project Design Refinements, December 19, 2008.) **Table 1**, contained in Condition **GEN-2,** lists the major structures and equipment included in the initial engineering design for the project. Conditions **GEN-3** through **GEN-8** require that qualified individuals oversee and inspect construction of the facility. Similarly, Conditions **MECH-1** through **MECH-3** address compliance of the project's mechanical systems with appropriate standards, and a quality assurance/quality control program assures that the Sentinel project will be designed, procured, fabricated, and installed as described. Condition **ELEC-1** provides that design and construction of major electrical features will comply with applicable LORS. (Ex. 200, pp. 5.1-3 to 5.1-4.) Compliance with design requirements will be verified through specific inspections and audits.

The power plant site is located in Seismic Risk Zone 4. (Ex. 200, p. 5.1-2.) The 2007 CBC requires specific "dynamic" lateral force procedures for certain structures to determine their seismic design criteria; others may be designed using a "static" analysis procedure. To ensure that project structures are analyzed appropriately, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the Chief Building Official (CBO)[2] for review and approval prior to the start of construction. (Ex. 200, p. 5.1-3.)

The evidentiary record also addresses project closure, which may range from "mothballing" the facility to removing all equipment and restoring the site. (Ex.

[2] The Energy Commission is the CBO for energy facilities we certify. We may delegate CBO authority to local building officials and/or independent consultants to carry out design review and construction inspections. When CBO duties are delegated, we require a Memorandum of Understanding with the delegate entity to outline respective roles, responsibilities, and qualifications of involved individuals such as those described in Conditions of Certification **GEN-1** through **GEN-8**. (Ex. 200, p. 5.1-4.) The conditions further require that every appropriate element of project construction be first approved by the CBO and that qualified personnel perform or oversee inspections.

200, pp. 5.1-4 to 5.1-5.) To ensure that decommissioning of the facility will conform to applicable LORS and be completed in a manner that protects the environment and public health and safety, the project owner is required to submit a decommissioning plan which will identify: decommissioning activities; applicable LORS in effect when decommissioning occurs; activities necessary to restore the site, if appropriate; and decommissioning alternatives. (Ex. 200, p. 5.1-5.) Related requirements are described in the general closure provisions of the Compliance Monitoring and Closure Plan. *See* **GENERAL CONDITIONS** in this Decision.

Overall, the evidentiary record conclusively establishes that the project will be designed and constructed in compliance with all applicable LORS, and that these activities will not negatively impact public health and safety.

FINDINGS OF FACT

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

1. The Sentinel project is currently in the preliminary design stage.
2. The evidentiary record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portion of **Appendix A** of this Decision.
3. The Conditions of Certification set forth below provide, in part, that qualified personnel will perform design review, plan checking, and field inspections of the proposed project.
4. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality as well as public health and safety.
5. The **GENERAL CONDITIONS,** included in a separate section of this Decision, establish requirements to be followed in the event of facility closure.

CONCLUSION OF LAW

1. We therefore conclude that implementation of the Conditions of Certification listed below ensure that the Sentinel project will be designed and constructed in conformance with the applicable laws pertinent to the engineering aspects summarized in this section of the Decision.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct, and inspect the project in accordance with the 2007 California Building Standards Code (CBSC), also known as Title 24, California Code of Regulations, which encompasses the California Building Code (CBC), California Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering laws, ordinances, regulations, and standards (LORS) in effect at the time initial design plans are submitted to the chief building official (CBO) for review and approval. The CBSC in effect is the edition that has been adopted by the California Building Standards Commission and published at least 180 days previously. The project owner shall ensure that all the provisions of the above applicable codes are enforced during the construction, addition, alteration, moving, demolition, repair, or maintenance of the completed facility (2007 CBC, Appendix. Chapter 1, § 101.2, Scope). All transmission facilities (lines, switchyards, switching stations, and substations) are covered in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

In the event that the initial engineering designs are submitted to the CBO when the successor to the 2007 CBSC is in effect, the 2007 CBSC provisions shall be replaced with the applicable successor provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction, or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

The project owner shall ensure that all contracts with contractors, subcontractors, and suppliers clearly specify that all work performed and materials supplied comply with the codes listed above.

Verification: Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the compliance project manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all design, 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 (2007 CBC, Appen. Chapter 1, § 110, Certificate of Occupancy).

Once the certificate of occupancy has been issued, the project owner shall inform the CPM at least 30 days prior to any construction, addition, alteration, moving, demolition, repair, or maintenance to be performed on any portion(s) of the completed facility that requires CBO approval for compliance with the above codes. The CPM shall then determine if the CBO needs to approve the work.

GEN-2 Before submitting the initial engineering designs for CBO review, the project owner shall furnish the CPM and the CBO with a schedule of facility design submittals, master drawing, and master specifications lists. The schedule shall contain a list of proposed submittal packages of designs, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM upon request.

Verification: At least 60 days (or within a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the master drawing, and master specifications lists of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in **FACILITY DESIGN Table 1,** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the monthly compliance report.

Facility Design Table 1
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Gas Turbine (CGT) Foundations and Connections	8
CGT Generator Foundations and Connections	8
CTG Intercooler Foundations and Connections	8
CTG Inlet Air Filter Foundations and Connections	8
Exhaust Stack Foundations and Connections	8
Selective Catalytic Reduction Skid Foundations and Connections	8
CTG Auxiliary Skid Foundations and Connections	8
CTG Pump Skid Foundations and Connections	8
GSU Transformer Foundations and Connections	8
Unit Control/Electrical Room Foundations and Connections	8
Auxiliary Power Transformers Foundations and Connections	8
Sound Wall Enclosure Foundations and Connections	1
Cooling Tower Foundations and Connections	8
Warehouse Foundations and Connections	1
Switchgear Building Foundations and Connections	1
Operations Building Foundations and Connections	1
MCC Building Foundations and Connections	2
Circulating Water Pump Foundations and Connections	2
Raw Water Storage Tank Foundations and Connections	2
Treated Water Storage Tank Foundations and Connections	2
Ammonia Storage Tank Foundations and Connections	1
Waste and wastewater Treatment Facility Foundations and Connections	1
Oil/Water Separator & Drain Sump Foundations and Connections	1
Fire Protection Pump Enclosure Foundations and Connections	1
Black State Generator Foundations and Connections	1
Prefebricated Assemblies	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2007 CBC (2007 CBC, Appen. Chapter 1, § 108, Fees; Chapter 1, § 108.4, Permits, Fees, Applications and Inspections), 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 in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next monthly compliance report indicating that applicable fees have been paid.

GEN-4 Prior to the start of rough grading, the project owner shall assign a California registered architect, structural engineer, or civil engineer as the resident engineer in charge of the project (2007 California Administrative Code, § 4-209, Designation of Responsibilities). All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The resident engineer may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may be delegated responsibility for mechanical and electrical portions of the project, respectively. A project may be divided into parts, provided that each part is clearly defined as a distinct unit. Separate assignments of general responsibility may be made for each designated part.

The resident engineer shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;

2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;

3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;

4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;

5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and

6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests when they do not conform to approved plans and specifications.

The resident engineer (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 period in which construction takes place.

The resident engineer shall have the authority to halt construction and to require changes or remedial work if the work does not meet requirements.

If the resident engineer or the delegated engineers are reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

Verification: At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO, for review and approval, the resume and registration number of the resident engineer and any other delegated engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the resident engineer and other delegated engineer(s) within five days of the approval.

If the resident engineer or the delegated engineer(s) is subsequently reassigned or replaced, the project owner has five days to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 require state registration to practice as a civil engineer or structural engineer in California.) All transmission facilities

(lines, switchyards, switching stations, and substations) are covered in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

The tasks performed by the civil, mechanical, electrical, or design engineers may be divided between two or more engineers as long as each engineer is responsible for a particular segment of the project (for example, proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

The project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project (2007 CBC, Appendix Chapter 1, § 104, Duties and Powers of Building Official).

If any one of the designated responsible engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned responsible engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer.

A. The civil engineer shall:

1. Review the foundation investigations, geotechnical, or soils reports prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;

2. Design (or be responsible for the design of), stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading; site preparation; excavation; compaction; and 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 resident engineer during the construction phase of the project and recommend changes in the design of the civil works facilities and changes to the construction procedures.

B. The soils engineer, geotechnical engineer, or civil engineer experienced and knowledgeable in the practice of soils engineering, shall:

1. Review all the engineering geology reports;

2. Prepare the foundation investigations, geotechnical or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load (2007 CBC, Appen. J, § J104.3, Soils Report; Chapter 18, § 1802.2, Foundation and Soils Investigations);

3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with requirements set forth in the 2007 CBC, Appendix J, section J105, Inspections, and the 2007 California Administrative Code, section 4-211, Observation and Inspection of Construction (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both); and

4. Recommend field changes to the civil engineer and resident engineer.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations (2007 CBC, Appendix Chapter 1, § 114, Stop Orders).

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and

2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2007 California Administrative Code, section 4-211, Observation and Inspection of Construction

(depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;

2. Provide consultation to the resident engineer during design and construction of the project;

3. Monitor construction progress to ensure compliance with engineering LORS;

4. Evaluate and recommend necessary changes in design; and

5. Prepare and sign all major building plans, specifications, and calculations.

E. The mechanical engineer shall be responsible for, and sign and stamp a statement with, each mechanical submittal to the CBO stating that the proposed final design plans, specifications, and calculations conform to all of the mechanical engineering design requirements set forth in the Energy Commission's Decision.

F. The electrical engineer shall:

1. Be responsible for the electrical design of the project; and

2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO, for review and approval, resumes and registration numbers of the responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of construction, the project owner shall submit to the CBO, for review and approval, resumes and registration numbers of the responsible design engineer, mechanical engineer, and electrical engineer assigned to the project.

The project owner shall notify the CPM of the CBO's approvals of the responsible engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2007 CBC, Chapter 17, Section 1704, Special Inspections; Chapter 17A, Section 1704A, Special Inspections; and Appendix Chapter 1, Section 109, Inspections. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A certified weld inspector, certified by the American Welding Society (AWS) and/or American Society of Mechanical Engineers (ASME), as applicable, shall inspect welding performed on-site requiring special inspection (including structural, piping, tanks, and pressure vessels).

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;

2. Observe the work assigned for conformance with the approved design drawings and specifications;

3. Furnish inspection reports to the CBO and resident engineer. All discrepancies shall be brought to the immediate attention of the resident engineer for correction then, if uncorrected, to the CBO and the CPM for corrective action (2007 CBC, Chapter 17, § 1704.1.2, Report Requirements); and

4. Submit a final signed report to the resident engineer, CBO, and CPM stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

Verification: At least 15 days (or within a project owner and CBO approved alternative time frame) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s) or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.

If the special inspector is subsequently reassigned or replaced, the project owner has five days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions (2007 CBC, Appen. Chapter 1, § 109.6, Approval Required; Chapter 17, § 1704.1.2, Report Requirements). The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request 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 an alternative site approved by the CPM during the operating life of the project (2007 CBC, Appendix Chapter 1, § 106.3.1, Approval of Construction Documents). Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next monthly compliance report: (a) a written notice that the completed work is ready for final inspection; and (b) a signed statement that the work conforms to the final approved plans.

After storing the final approved engineering plans, specifications, and calculations described above, the project owner shall submit to the CPM a letter stating both that the above documents have been stored and the storage location of those documents.

Within 90 days of the completion of construction the project owner, at its own expense, shall provide to the CBO three sets of electronic copies of the above documents. These are to be provided in the form of "read only" files (Adobe .pdf 6.0), with restricted (password-protected) printing privileges, on archive quality compact discs.

CIVIL-1 The project owner shall submit to the CBO for review and approval the following:

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils, geotechnical, or foundation investigation reports required by the 2007 CBC, Appen. J, section J104.3, Soils Report; and Chapter 18, section 1802.2, Foundation and Soils Investigation.

Verification: At least 15 days (or within a project owner and CBO approved alternative time frame) prior to the start of site grading the project owner shall submit the documents described above to the CBO for design review and approval. In the next monthly compliance report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer, geotechnical engineer, or the civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications, and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area (2007 CBC, Appendix Chapter 1, § 114, Stop Work Orders).

Verification: The project owner shall notify the CPM within 24 hours when earthwork and construction are 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 2007 CBC, Appendix Chapter 1, section 109, Inspections, and Chapter 17, section 1704, Special Inspections. All plant site grading operations for which a grading permit is required shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM (2007 CBC, Chapter 17, § 1704.1.2, Report Requirements). The project owner shall prepare a written report, with copies to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

Verification: Within five days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a non-conformance report (NCR) and the proposed corrective action for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs for the reporting month shall also be included in the following monthly compliance report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage work, the project owner shall obtain the CBO's approval of the final grading plans (including final changes) for the erosion and sedimentation control work. The civil engineer shall state that the work within his/her area of responsibility was done in accordance with the final approved plans (2007 CBC, Chapter 17, § 1703.2, Written Approval).

Verification: Within 30 days (or within a project owner and CBO approved alternative time frame) of the completion of the erosion and sediment control mitigation and drainage work, the project owner shall submit to the CBO, for review and approval, the final grading plans (including final changes) and the responsible civil engineer's signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans and that the facilities are adequate for their intended purposes, along with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next monthly compliance report.

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **FACILITY DESIGN Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans, and drawings for project structures. Proposed lateral

force procedures, designs, plans, and drawings shall be those for the following items (from **Table 1**, above):

1. Major project structures;

2. Major foundations, equipment supports, and anchorage; and

3. Large field-fabricated tanks.

Construction of any structure or component shall not begin until the CBO has approved the lateral force procedures to be employed in designing that structure or component.

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads, or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications (2007 CBC, Appendix Chapter 1, § 109.6, Approval Required);

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 (2007 California Administrative Code, § 4-210, Plans, Specifications, Computations and Other Data);

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 (2007 CBC, Appendix Chapter 1, § 106.3.4, Design Professional in Responsible Charge); and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS (2007 CBC, Appendix Chapter 1, § 106.3.4, Design Professional in Responsible Charge).

Verification: At least 60 days (or within a project owner and CBO approved alternative time frame) prior to the start of any increment of construction of any structure or component listed in **FACILITY DESIGN Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO the above final design plans, specifications, and calculations, with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM, in the next monthly compliance report, a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have been approved and comply with the requirements set forth in applicable engineering LORS.

STRUC-2 The project owner shall submit to the CBO the required number of sets of the following documents related to work that has undergone CBO design review and approval:

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);

2. Concrete pour sign-off sheets;

3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);

4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2007 CBC, Chapter 17, section 1704, Special Inspections, and section 1709.1, Structural Observations.

Verification: If a discrepancy is discovered in any of the above data the project owner shall, within five days, prepare and submit an NCR describing the nature of the discrepancies and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM (2007 CBC, Chapter 17, § 1704.1.2, Report Requirements). The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO's approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval and the revised corrective action necessary to obtain the CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2007 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 (2007 CBC, Appendix Chapter 1, § 106.1, Submittal Documents; § 106.4, Amended Construction Documents; 2007 California Administrative Code, § 4-215, Changes in Approved Drawings and Specifications).

Verification: On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes and shall submit the required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the monthly compliance report, when the CBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in the 2007 CBC, Chapter 3, Table 307.1(2) shall, at a minimum, be designed to comply with the requirements of that chapter.

Verification: At least 30 days (or within a project owner and CBO approved alternate time frame) prior to the start of installation of the tanks or vessels containing the above specified quantities of toxic or hazardous materials, the project owner shall submit to the CBO for design review and approval final design plans, specifications, and calculations, including a copy of the signed and stamped engineer's certification.

The project owner shall send copies of the CBO's approvals of plan checks to the CPM in the following monthly compliance report. The project owner shall also transmit a copy of the CBO's inspection approvals to the CPM in the monthly compliance report following completion of any inspection.

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **FACILITY DESIGN Table 1**, Condition of Certification **GEN-2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of that construction (2007 CBC, Appen. Chapter 1, § 106.1, Submittal Documents; § 109.5,

Inspection Requests; § 109.6, Approval Required; 2007 California Plumbing Code, § 301.1.1, Approvals).

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 (2007 CBC, Appendix Chapter 1, § 106.3.4, Design Professional in Responsible Charge) which may include, but are not limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI 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);
- 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 ventilations systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code);
- Riverside County codes.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency (2007 CBC, Appendix Chapter 1, § 103.3, Deputies).

Verification: At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of any increment of major piping or plumbing construction listed in **FACILITY DESIGN Table 1**, Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the final plans, specifications, and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with applicable LORS, and shall send the CPM a copy of the transmittal letter in the next monthly compliance report.

The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's inspection approvals.

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal/OSHA), prior to operation, the code certification papers and other documents required by applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal/OSHA inspection of that installation (2007 CBC, Appendix Chapter 1, § 109.5, Inspection Requests).

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

Verification: At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

The project owner shall transmit to the CPM, in the monthly compliance report following completion of any inspection, a copy of the transmittal letter conveying the CBO's and/or Cal/OSHA inspection approvals.

MECH-3 The project owner shall submit to the CBO for design review and approval the design plans, specifications, calculations, and quality control procedures for any heating, ventilating, air conditioning (HVAC), or refrigeration system. Packaged HVAC systems, where used, shall be identified with the appropriate manufacturer's data sheets.

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in

accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction. The final plans, specifications, and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings, and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications, and calculations conform with the applicable LORS (2007 CBC, Appendix Chapter 1, § 109.3.7, Energy Efficiency Inspections; § 106.3.4, Design Professionals in Responsible Charge).

Verification: At least 30 days (or within a project owner and CBO approved alternative time frame) prior to the start of construction of any HVAC or refrigeration system, the project owner shall submit to the CBO the required HVAC and refrigeration calculations, plans, and specifications, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the CBC and other applicable codes, with a copy of the transmittal letter to the CPM.

ELEC-1 Prior to the start of any increment of electrical construction for all electrical equipment and systems 480 Volts or higher (see a representative list, below), with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications, and calculations (2007 CBC, Appendix Chapter 1, § 106.1, Submittal Documents). 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 (2007 CBC, Appendix Chapter 1, § 109.6, Approval Required; § 109.5, Inspection Requests). All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

A. Final plant design plans shall include:

1. one-line diagrams for the 13.8 kV, 4.16 kV, and 480 V systems; and

2. system grounding drawings.

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 13.8 kV, 4.16 kV, and 480 V systems;

6. system grounding requirements; and

7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the monthly compliance report:

1. receipt or delay of major electrical equipment;

2. testing or energization of major electrical equipment; and

3. a signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least 30 days (or within a 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.

B. POWER PLANT EFFICIENCY

The CPV Sentinel Project will use substantial amounts of natural gas for its fuel. Pursuant to the California Environmental Quality Act (CEQA), we must determine whether the consumption of this non-renewable form of energy will result in substantial impacts upon energy resources. (Cal. Code Regs., tit. 14, § 15126.4(a)(1), Appendix F.)

The evidence of record on this matter is uncontested (11/3/08 RT 10, 14, 30-31) and examines the project's: energy requirements and energy use efficiency; effects on local and regional energy supplies and resources; requirements for additional energy supply capacity; and compliance with applicable energy standards. (Exs. 1, §§ 1.3, 1.8, 2.1, 2.9.3, 2.96; 5; 200, §5.3.) In addition, the evidence of record addresses whether there are feasible alternatives which would reduce any wasteful, inefficient, or unnecessary energy consumption attributable to the project.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project objectives include providing approximately 779 MW of flexible peaking electrical power and ancillary services (such as rapid start capability and automatic generation control) to the Los Angeles area. (Ex. 200, pp. 5.3-1 to 5.3.2, 5.3.4.) The Sentinel facility will operate in a simple cycle mode, utilizing eight General Electric (GE) LMS 100 gas turbine generators and ancillary equipment. The gas turbines will be equipped with evaporative inlet air cooling and compressor intercooling to enhance power, as well as combustor water injection, selective catalytic reduction (SCR), and a combustion catalyst to control emissions of oxides of nitrogen and carbon monoxide, respectively. According to the Applicant, the project will operate at no more than a 35 percent annual capacity factor. (Ex. 200, p. 5.3-2.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by the selection of equipment used to generate power.

The project will burn natural gas at a rate of approximately 6,139 million Btu (British Thermal Units) per hour LHV. Under average annual ambient conditions, Sentinel will generate electricity at a full load efficiency of approximately 42 percent. (Ex. 200, pp. 5.3-2 to 5.3-3.)

The project will be configured as eight simple cycle power plants in parallel, in which electricity is generated by eight natural gas-fired turbine generators. The evidence

establishes that the project's simple cycle configuration, with its short start-up time and fast ramping capability,[1] is well suited to providing peaking power in an efficient manner. Furthermore, the evidence shows that the GE LMS 100 turbine is the newest and most efficient machine available for this intended use.[2] (Ex. 200, pp. 5.3-3 to 5.3-4.) For example, each of the project's generators can be operated at loads as low as ten percent (10 MW), then ramped up quickly. When running at half load (50 MW) the LMS 100 can reach full load (100 MW) in less than a minute. In addition, the LMS 100 can go from a cold start to full load in ten minutes. The evidence indicates that this operating flexibility makes the LMS 100 the most capable machine available for producing electrical system ancillary services such as peaking, load following, spinning and non-spinning reserve, and automatic generation control. (Ex. 200, p. 5.3-6.)

The fuel will be delivered via a new 2.6 mile long natural gas pipeline which will interconnect with an existing Southern California Gas Company (SoCalGas) line at the Indigo Energy Facility (IEF). The evidence conclusively establishes that SoCalGas' present energy supply capacity is sufficient to meet the demands of the Project, even when it is considered in conjunction with the nearby IEF unit. (Ex. 200, pp. 5.3-3, 5.3-7.) Moreover, the evidence shows that only natural gas burning technologies are feasible for this project. Other technologies are either incapable of providing the Sentinel Project's ancillary services (*e.g.,* solar), are unavailable in the area (*e.g.*, wind, geothermal, biomass), or are too highly polluting (*e.g.*, coal, oil). (Ex. 200, p. 5.3-4.)

In conclusion, the uncontradictated evidence of record convincingly shows that the Sentinel Project will benefit the State's electrical system by providing peaking power and ancillary services during periods of high demand. It will provide this benefit in the most fuel efficient manner practicable, without creating adverse effects on energy supplies or resources. The project will not require additional sources of energy supply or consume energy in a wasteful or inefficient manner. (Ex. 200, pp. 5.3-7 to 5.3-8.)

FINDINGS

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

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[1] "Ramping" is increasing and decreasing electrical output to meet fluctuating load requirements.

[2] Staff's analysis describes the technological improvements of the LMS 100. The analysis also contains a comparison of the LMS 100 to several other machines, as well as a comparison of inlet air cooling methods. (Ex. 200, pp. 5.3-4 to 5.3-7.) These analyses confirm that, given the project's objectives, there are no alternatives that would significantly reduce energy consumption. (Ex. 200, p. 5.3-7.)

1. The CPV Sentinel Project will provide approximately 779 MW of peaking power and ancillary services, operate in a simple cycle mode, and utilize eight GE LMS 100 gas turbines.

2. The project's intended annual capacity factor is no more than 35 percent.

3. Under average annual ambient conditions, the project will generate electricity at a full load efficiency of approximately 42 percent.

4. The project's simple cycle configuration, short start-up time, and fast ramping capability is appropriate for providing peaking power in an efficient manner.

5. The LMS 100 turbine is the newest and most efficient machine available for meeting the project's generation objective.

6. The project will not require the development of new fuel supply resources.

7. The project will consume natural gas in as efficient a manner as practicable.

8. The evidence of record contains a comparative analysis of alternative fuel sources and generation technologies, none of which is superior at meeting project objectives in an efficient manner.

9. The project will benefit the State's electrical system by providing peaking power and ancillary services in the most efficient manner practicable.

10. No Federal, State, or local laws, ordinances, regulations, or standards apply to the efficiency of this project.

CONCLUSION OF LAW

1. We therefore conclude that the Sentinel Project will not create adverse effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner.

C. POWER PLANT RELIABILITY

We must determine whether the project will be designed, sited, and operated to ensure safe and reliable operation. [Pub. Res. Code, § 25520(b); Cal. Code Regs., tit. 20 § 1752(c)(2).] However, there are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation. Therefore, we look to typical industry norms for reliability of power generation as a benchmark against which to evaluate this proposal. Where a power plant compares favorably to industry norms, it is not likely to degrade the overall reliability of the electric system it serves. (Exs. 1, § 2.9.3; 200, p. 5.4-2.)

The California Independent System Operator (CAISO) has begun to establish specific criteria for each load-serving entity under its jurisdiction to help the entities decide how much generating capacity and ancillary services to build or purchase. Load serving entities then issue power purchase agreements to satisfy these needs. Sentinel has secured a power purchase agreement from SCE.

The CAISO criteria are designed to maintain system-wide reliability. However, it is possible that, if numerous power plants operated at reliability levels sufficiently lower than historical levels, the assumptions used by CAISO to ensure system reliability would prove invalid. As a result, the Commission must ensure that individual power plant owners continue to build and operate their projects to the \traditional level of reliability reflected in the power generation industry.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Applicant has predicted an availability factor of over 95 percent for the CPV Sentinel Project.[1] Commission staff evaluated this claim against typical industry norms as a benchmark for plant reliability. (Exs. 1, § 209.3; 200, p. 5.4-2.);

The availability factor for a power plant is the percentage of time that it is available to generate power. Both planned and unplanned outages subtract from a plant's availability. For practical purposes, a reliable power plant is one that is available when called upon to operate. The evidence of record shows that delivering acceptable reliability entails: 1) adequate levels of equipment availability; 2) plant maintainability with scheduled maintenance outages; 3) fuel and water availability; and 4) resistance to natural hazards. (Ex. 200, pp. 5.4-3

[1] The project, as a peaker unit, is expected to operate at an annual capacity factor of no more than 35 percent. (Ex. 200, p. 5.4-2.)

5.4-5.) If these factors compare favorably to industry norms, the evidence indicates that the power plant would be at least as reliable as other power plants on the electric system and would therefore not degrade overall system reliability. (Ex. 200, p. 5.4-3.)

1. Equipment Availability

Equipment availability will be ensured by use of 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 Quality Assurance/Quality Control 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. To ensure these measures are taken, we have incorporated appropriate Conditions of Certification in the **Facility Design** section of this Decision. (Ex. 200, p. 5.4-3.)

2. Plant Maintainability

A peaking generating facility such as the CPV Sentinel Project usually offers adequate opportunity for maintenance work during its extensive downtime. However, during periods of extended dispatch, the facility may be required to operate for long periods. A typical approach for achieving reliability in such circumstances is to provide redundancy for those pieces of equipment most likely to require service or repair. (Ex. 200, pp. 5.4-3 to 5.4-4.)

The evidence shows that the project incorporates an appropriate redundancy of function. It consists of eight combustion turbine generators operating in parallel as independent equipment trains. A single equipment failure cannot disable more than one train, thus allowing the plant to continue to generate at reduced output. In addition, all plant ancillary systems are designed with adequate redundancy to ensure continued operation in the face of equipment failure. (Exs. 1, §2.9-4, Table 2.3-1; 200, p. 5.4-4.)

The project owner will base its maintenance program on recommendations from the various equipment manufacturers. This will encompass both preventive and predictive maintenance techniques. Maintenance outages will be planned for periods of low electricity demand. The evidence establishes that the planned maintenance measures will ensure acceptable reliability. (Ex. 200, p. 5.4-4.)

3. Fuel and Water Availability

For any power plant, the long-term availability of fuel and of water for cooling or process use is necessary to ensure reliability. The project will burn natural gas supplied by SoCalGas. This fuel will be supplied via a new 2.6-mile long pipeline originating at the existing Indigo Energy Facility. (Ex. 1, §§ 1.3, 1.8, 2.1, 2.9.6) The line offers access to adequate supplies of gas to meet the project's needs. (Ex. 200, p. 5.4-4.)

CPV Sentinel will use process cooling water from on-site wells within the Mission Creek sub-basin. Potable water will be supplied via a 3,200 foot long line extension that will connect to an existing municipal water line located near Dillion Road. (See also, the **Soil and Water Resources** section.) The evidence indicates that the project's water supply will be reliable. (Ex. 200, p. 5.4-4.)

4. Natural Hazards

The project site lies in Seismic Risk Zone 4 and will be designed and constructed to the Seismic Zone 4 standards of the latest appropriate LORS. By implementing these seismic design criteria, this project will likely perform at least as well as, and perhaps better than, existing plants in the electric power system. We have adopted Conditions of Certification in the **Facility Design** section of this Decision to ensure this.

The site does not lie within either a 100-year or 500-year floodplain. Grading and construction will provide proper drainage to prevent on-site flooding. The record establishes that there should be no significant concerns with power plant functional reliability due to flooding. (Ex. 200, p. 5.4-5.)

5. Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains statistics for availability factors and other related reliability data. NERC reports generating unit statistics for the years 2002 through 2006 for gas turbine units (50 MW and larger); these statistics demonstrate an availability factor of 93.95 percent. (Ex. 200, p. 5.4-5.) The evidence shows that the CPV Sentinel Project's availability factor will approach 95 percent. Moreover, the LMS 100 turbines have been thoroughly tested by the manufacturer and can be expected to outperform the fleet of existing machines. (Ex. 200, p. 5.4-6.)

Finally, the evidence shows that the CPV Sentinel Project will enhance the reliability of California's electricity supply, contribute to electricity reserves in the region, and provide operating flexibility and load following capability. The evidence of record characterizes these factors as "noteworthy project benefits." (Ex. 200, p. 5.4-6.)

FINDINGS OF FACT

Based on the evidence, we make the following findings:

1. No federal, state, or local/county LORS apply to the reliability of the CPV Sentinel Project.

2. A project's reliability is acceptable if it does not degrade the reliability of the utility system to which it is connected.

3. The North American Electric Reliability Corporation (NERC) reports that for the years 2002 through 2006 gas turbine units (50 MW and larger) exhibited an availability factor of 93.95 percent.

4. Undisputed evidence predicts that an availability factor of 95 percent is achievable by the CPV Sentinel Project.

5. Implementation of Quality Assurance/Quality Control (QA/QC) programs during design, procurement, construction, and operation of the plant, as well as adequate maintenance and repair of the equipment and systems, will ensure the project is adequately reliable.

6. Appropriate Conditions of Certification included in the **FACILITY DESIGN** portion of this Decision ensure implementation of the QA/QC programs and conformance with seismic design criteria.

7. The project's fuel and water supply will be reliable.

8. The project will meet or exceed industry norms for reliability, including reliability during seismic events, and will not degrade the overall electrical system.

9. The project is a peaking unit and is expected to operate at an annual capacity factor of no more than 35 percent.

10. The project will enhance California's power supply reliability, contribute to electricity reserves in the region, and provide operating flexibility.

11. The use of eight combustion turbine generators, configured as independent equipment trains, provides the project inherent reliability.

12. The CPV Sentinel Project has procured a power purchase agreement with Southern California Edison.

CONCLUSIONS OF LAW

We therefore conclude that the project will be constructed and operated in accordance with typical power industry norms for reliable electricity generation and will not degrade overall system reliability.

No Conditions of Certification other than those included in the **Facility Design** portion of this Decision are required for this topic.

D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant…to a point of junction with an interconnected transmission system." (Pub. Res. Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The Commission also conducts an environmental review of the "whole of the action" related to the power plant proposal. This may include examining the environmental effects of facilities made necessary by the construction and operation of the proposed power plant but not licensed by the Commission. (Cal. Code Regs., tit. 14 § 15378.)

Southern California Edison (SCE) is responsible for ensuring electric system reliability in the SCE system with the addition of the proposed generating plant. SCE has provided its analysis and reports in the System Impact and Facilities Studies, and its approval for the facilities based upon changes required in the SCE system to accommodate the addition of the proposed transmission modifications. (Ex. 200, p. 2.)

The California Independent System Operator (CAISO) is responsible for ensuring electric system reliability for all participating transmission owners and is also responsible for developing the standards necessary to achieve system reliability. The CAISO will review the studies of the SCE system to ensure adequacy of the proposed transmission interconnection. The CAISO will also determine the reliability impacts of the proposed transmission modifications on the SCE transmission system in accordance with all applicable reliability criteria. According to the CAISO Tariffs, the CAISO will determine the need for transmission additions or upgrades downstream from the interconnection point to insure reliability of the transmission grid. The CAISO has reviewed the System Impact Study (SIS) performed by SCE and has provided its approval for the proposed project to interconnect to the grid. (Ex. 32, Appen. H.) Pursuant to the June 6, 2008 Large Generator Interconnection Agreement (LGIA) between CPV Sentinel, SCE, and the CAISO, SCE will complete an Operational Study examining the impact of adding the proposed project as of the in-service date.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Description

CPV Sentinel will consist of eight natural gas-fired combustion turbine generator (CTG) units (General Electric LMS100 model) operating in simple cycle mode with a total 850 MW nominal output. Each CTG unit rated 155 MVA, 13.8-kV will be connected through a 7,000 ampere segregated bus duct to the low voltage terminal of a dedicated generation station unit (GSU) 76/104/130 MVA, 13.8/230 kV step-up transformer with a specified impedance of 11.59 percent @76 MVA. (Ex. 32, Appen. H-6; Ex. 200, pp. 5.5-4 to 5.5-5.)

The new CPV Sentinel 230 kV switchyard is proposed for a 3,000-ampere single bus arrangement with nine switch bays. Each bay will have a single SF6 gas-insulated (GIS) breaker. Eight of the breakers with a 1,200-ampere continuous rating will be connected by overhead conductors to the high voltage terminals of the respective GSU transformer. The remaining switch bay with a 3,000-ampere breaker will be used for the new 230-kV overhead interconnection line to the Devers 500/230/115-kV Substation. The Applicant will build, own and operate the CPV Sentinel switchyard. (Ex. 200, p. 5.5-6.)

The new CPV Sentinel 230-kV switchyard would be interconnected to the SCE Devers Substation 230-kV bus by building a new approximately 2,300-foot long 230-kV single circuit overhead transmission line with a bundled 1,590 KCmil steel reinforced aluminum conductor (ACSR) on nine 85-foot to 115-foot high tubular steel poles. About 1,800 feet of the line would be outside of the CPV Sentinel plant or Devers substation boundaries and this portion of the line would follow the right of way of existing SCE 230-kV and 115-kV lines adjacent to Powerline Road. (Ex. 200, p. 5.5-6.)

To accommodate termination of the interconnecting line at the SCE Devers substation 230-kV bus, the existing Devers-Coachella 230-kV line and Devers-Vista #1 line outlets and their terminations would be relocated to adjacent switch bays with installation of five new 230-kV circuit breakers with 3,000-ampere continuous rating and 50 kA interrupting rating, and the new interconnection line from the CPV Sentinel switchyard would be terminated to the switch bay previously occupied by the Devers-Vista #1 230 kV line through a 3,000-ampere circuit breaker. SCE would build, own, and operate the new 230-kV transmission tie line and interconnecting facilities between the CPV Sentinel switchyard and Devers substation. (Ex. 200, p. 5.5-6.)

We are satisfied that the configuration of the CPV Sentinel switchyard, the generator tie line to the Devers substation and its termination is in accordance with good utility practices.

2. Study Results

The April 6, 2005 SCE SIS was prepared to evaluate the impact of the new 850 MW generation output from the CPV Sentinel plant to the Devers substation 230 kV bus. Based on the estimated commercial operation date of May 2008, the study was conducted with a 2008 heavy summer peak case and a 2008 spring case, derived from the annual CAISO 2005-2014 Transmission Expansion Plan. The full loop 2008 summer peak base case was prepared with and without the proposed CPV Sentinel 850 MW generation output with a 1-in-5 year extreme weather summer peak load, San Onofre Units 2 & 3 on-line, maximum generation in SCE eastern area system, maximum East of the River (EOR)/West of the River (WOR) power flow and high power flow into the Devers area. The base cases also included planned CAISO-approved transmission upgrades that would be operational by 2007/2008, and all queue generation higher than the CPV Sentinel. The full loop 2008 spring case was prepared with and without the proposed CPV Sentinel 850 MW generation output with 65 percent of the summer peak load and other assumptions remaining the same as in the summer peak cases. Further assuming the largest unit of the San Onofre (Unit 2 or 3) initially off-line, the study was also conducted with and without the CPV Sentinel generation output for single (N-1) contingencies. The study included a power flow analysis, a short circuit analysis, and substation evaluations. (Ex. 200, p. 5.5-7.)

The January 9, 2006 SCE Facility Study (FS) determined the scope of work and provided cost estimates for the CPV Sentinel generation tie line facilities and also necessary downstream reliability upgrades in the SCE system, assuming SCE would engineer, construct, own, and maintain the interconnecting facilities (except the CPV Sentinel switchyard) and engineer and construct the downstream upgrades. (Ex. 32, Appens. H-1, H-2, and H-3; Ex. 200, pp. 5.5-7 to 5.5-8.)

a. Power Flow Study Results

The SIS and FS demonstrate that the new 850 MW CPV Sentinel generation output would not cause any normal (N-0) overload or voltage criteria violations for both 2008 summer peak and spring system conditions with all transmission facilities in service. However, under certain contingency conditions the study identified the following overloads on the Devers-San Bernardino No.1 230 kV line and corresponding mitigation measures:

- The line overloaded to 103 percent during the 2008 summer peak system conditions and to 115 percent during the 2008 spring system conditions due to the Category B (N-1) contingency outage of the Devers-Valley 500 kV line.

- The line overloaded to 108 percent during 2008 spring system conditions due to Category C (N-2) contingency outages of the Devers-Vista #1 & 2 230 kV lines.

- The line overloaded to 114 percent during 2008 spring system conditions due to Category C (N-2) contingency outages of the Devers-Vista #1 and Devers-San Bernardino #2 230 kV lines.

- The line overloaded to 114 percent during 2008 spring system conditions due to Category C (N-2) contingency outages of the Devers-Vista # 2 and Devers-San Bernardino #2 230 kV lines. (Ex. 200, p. 5.5-8.)

A special protection scheme (SPS) to trip the CPV Sentinel generation under the above-mentioned outage conditions can be used to mitigate the above overload problem. As part of the West of Devers 230 kV rebuild project identified in the SCE/CAISO 2008 Transmission Plan, SCE has proposed to upgrade the Devers-San Bernardino no.1 230 kV line by 2012. Because this transmission upgrade is identified in the transmission plan as being needed to maintain system reliability and to reduce the cost of serving loads with or without the CPV Sentinel project, the need for the upgrade is not treated in the record as a consequence of the CPV Sentinel project. The evidence indicates that the line upgrade may eliminate the need for the SPS. Additional studies, taking into account the timing of both the transmission and generation projects and the final load flows after both projects are on-line, will be required to determine if the SPS would still be needed after the line upgrade. SCE's facility study report recommends

proceeding with a plan for installing a SPS to mitigate the overload on interim basis. We concur with the mitigation plan. (Ex. 200, p. 5.5-8.)

b. Short Circuit Study Results

The Short Circuit Study results identified that the addition of the CPV Sentinel generation would increase the three-phase to ground short circuit duty by 0.1 kA or more at three 500 kV substation buses, twenty-three 230 kV substation buses, and three 115 kV substation buses in the SCE system, where the breaker duty is in excess of 60 percent of the breaker name plate interrupting rating. The Short Circuit Study data is used to determine if any equipment would be overstressed due to increase in fault current by the addition of the CPV Sentinel. Nevertheless, the evidence established that the current plant configuration with eight CTG units having a net 850 MW generation output and corresponding GSU transformers each with a non-standard modified percentage impedance (11.59@ 76 MVA rating) would not have any material impact on the short circuit duty of the lower queued projects. Such impedance specification for the proposed eight GSU transformers, therefore, would eliminate any short circuit duty criteria violations observed in the study for the addition of the CPV Sentinel. We find the mitigation acceptable. (Ex. 200, p. 5.5-9.)

c. Substation Evaluation and Transient Stability Study Results

According to the evidence, all parties agree that several modifications would be required at the Devers Substation in order to reliably accommodate interconnection of the CPV Sentinel. The wave traps would be removed from the existing Devers-Coachella 230 kV line and Devers-Vista #1 230 kV line outlets, and the line terminations would be relocated to adjacent switch bays with five new 3,000-ampere circuit breakers. The interconnection 230 kV tie line from the CPV Sentinel switchyard will be terminated to the switch bay previously occupied by the Devers-Vista #1 230 kV line through a 3,000-ampere circuit breaker. The evidence also identified the need to install new relays and telecommunication equipment for the new tie line and the need to replace relays for the existing 230 kV lines. Remote control equipment will be required for the new generating units. (Ex 32, Appen. H-2 FS; Ex. 200, p. 5.5-9.)

The evidence is undisputed that the transient stability studies show there are no transient stability concerns in the SCE system due to the addition of the CPV Sentinel project. (Ex. 200, p. 5.5-9.)

d. CAISO Review

CAISO completed an LGIA with CPV Sentinel in June of 2008. Pursuant to Section 12.2.4 of the LGIP in the CAISO Tariff, after the execution of the LGIA, the CAISO or SCE will perform an Operational Study examining the impacts of the proposed project as of the in-service date. Condition of Certification **TSE-5** requires the operational study be filed **prior** to the start of construction of transmission facilities. (Ex. 209, p. 29.)

The implementation of the above mitigation measures, including performance of the Operational Study and execution of the LGIA, ensures system reliability in the CAISO grid and compliance with WECC/NERC and CAISO Planning standards. (Ex. 200, p. 5.5-10.)

e. Downstream Facilities

In addition to the interconnection facilities which include the new CPV Sentinel switchyard and the proposed new single circuit 230 kV line between the CPV Sentinel 230 kV switchyard and the Devers 500/230/115 kV substation, installation of five new 3,000-ampere 230 kV breakers and relocation of two existing 230 kV transmission line outlets and their terminations to adjacent switch bays will be required to accommodate the interconnection of the CPV Sentinel at the Devers substation 230 kV bus. SCE will be responsible for construction within the existing fence line of the Devers substation. (Ex. 200, p. 5.5-10.)

f. Cumulative Impacts

Evidence of the concentration of electrical generation and loads in the SCE Devers area (including about 2,200 MW import of power through the existing Devers-Palo Verde No.1 (DPV1) 500 kV line from the Southwest) indicates that the CPV Sentinel generation would create some cumulative effects in the area network, especially on the west of Devers 230 kV and 115 kV lines. However, SCE has proposed reconductoring the west of Devers 230 kV lines as part of their proposed annual grid expansion process. The cumulative marginal impacts due to the CPV Sentinel, as identified in the SIS, will thus be mitigated. Since the reconductoring project is not a direct network upgrade requirement for interconnection of the CPV Sentinel, it is beyond the scope of this general CEQA analysis. (Ex. 200, p. 5.5-10.)

The evidence also shows some positive cumulative impacts because the Sentinel Project would supplement local wind generation and import of power to the SCE system, meet the increasing load demand in the Riverside County and Coachella Valley, provide additional reactive power and voltage support in the local network, and may reduce system losses in the SCE system. (Ex. 200, p. 5.5-10.)

g. Conformance with LORS

The SIS shows that there would be an adverse impact in the SCE system with the addition of the CPV Sentinel connection to the Devers substation. However the identified impact would be mitigated by installing a SPS and a network upgrade that SCE has identified as needed with or without the CPV Sentinel project. The Applicant's submission of a CAISO or SCE Operational Study report will ensure system reliability in the CAISO grid and conformance with the reliability LORS. The proposed new interconnecting facilities, the CPV Sentinel 230-kV switchyard, and the single circuit 230-kV line and its termination to the Devers substation, will be constructed according to the NESC standards and GO-95 Rules. Therefore, we find that the new facilities will be built in accordance with good utility practices, and will conform to engineering LORS.

3. Public Comment

SCE submitted a letter on October 14, 2008, wherein they comment that they find it hard to distinguish whether the term "linear" as used in the Final Staff Assessment refers to gas, water, transmission, or all linear aspects.

As a general rule, the term "linear" as in "linear facilities" refers to all such fixed channels of conveyance to or from the power plant collectively. We have avoided using the term "linear" entirely in this section of the Decision. Other sections of this Decision may refer to the transmission lines directly or as included in the class of "linear facilities."

SCE further comments that "[t]here is no separation between the power plant component of the project and SCE's transmission line component in the impact analysis. Therefore, it is unclear as to exactly which mitigation measures will be required for the transmission line component of the project."

Under Title 20 California Code of Regulations, section 1703(n), the definition of "related facility" includes "electric transmission lines up to the first point of

interconnection" (see also *Public Utilities Com. v. Energy Resources Conservation & Dev. Com.* (1984) 150 Cal.App.3d 437, 197 Cal. Rptr. 866). This section of the Decision, entitled "Transmission System Engineering" contains the mitigation measures required for the construction and operation of the transmission line component of the project. Mitigation measures in other sections of this Decision may also affect transmission lines.

FINDINGS OF FACT

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

1. CPV Sentinel will consist of eight natural gas-fired combustion turbine generator (CTG) units (General Electric LMS100 model) operating in simple cycle mode with a total 850 MW nominal output.

2. Each CTG unit rated 155 MVA, 13.8 kV will be connected through a 7,000-ampere segregated bus duct to the low voltage terminal of a dedicated generation station unit (GSU) 76/104/130 MVA, 13.8/230 kV step-up transformer with a specified impedance of 11.59 percent @76 MVA.

3. The new CPV Sentinel 230 kV switchyard is proposed for a 3,000-ampere single bus arrangement with nine switch bays.

4. All nine switch bays will have a single SF6 gas-insulated (GIS) breaker. Eight of the breakers with a 1,200-ampere continuous rating will be connected by overhead conductors to the high voltage terminals of the respective GSU transformer. The remaining switch bay with a 3,000-ampere breaker will be used for the new 230 kV overhead interconnection line to the Devers 500/230/115 kV Substation.

5. The Applicant will build, own, and operate the CPV Sentinel switchyard.

6. The new CPV Sentinel 230 kV switchyard will be interconnected to the SCE Devers Substation 230 kV bus by a new approximately 2,300-foot long 230 kV single circuit overhead transmission line with a bundled 1590 KCmil steel reinforced aluminum conductor (ACSR) on nine 85-foot to 115-foot high tubular steel poles.

7. About 1,800 feet of the line will be outside of the CPV Sentinel plant or Devers substation boundaries following the right of way of existing SCE 230 kV and 115 kV lines adjacent to Powerline Road.

8. To accommodate termination of the interconnecting line at the SCE Devers substation 230 kV bus, the existing Devers-Coachella 230 kV line and Devers-Vista #1 line outlets and their terminations will be relocated to adjacent switch bays with installation of five new 230 kV circuit breakers with 3,000-ampere continuous rating and 50 kA interrupting rating, and the new interconnection line from the CPV Sentinel switchyard will be terminated to the switch bay previously occupied by the Devers-Vista #1 230 kV line through a 3,000-ampere circuit breaker.

9. SCE will build, own, and operate the new 230 kV transmission tie-line and interconnecting facilities between the CPV Sentinel switchyard and Devers substation.

10. The April 6, 2005 SCE System Impact Study (SIS) was prepared to evaluate the impact of the new 850 MW generation output from the CPV Sentinel plant to the Devers substation 230 kV bus.

11. The January 9, 2006 SCE Facility Study (FS) determined the scope of work and provided cost estimates for the CPV Sentinel generation tie-line facilities and also necessary downstream reliability upgrades in the SCE system.

12. The SIS and FS demonstrate that the 850 MW CPV Sentinel generation output will not cause any normal overload or voltage criteria violations for both 2008 summer peak and spring system conditions with all transmission facilities in service.

13. Certain contingency conditions could cause overloads on the Devers-San Bernardino No.1 230 kV line but a special protection scheme (SPS) to trip the CPV Sentinel generation under the outage conditions would mitigate the overload problem.

14. SCE has proposed to upgrade the Devers-San Bernardino No.1 230 kV line by 2012.

15. SCE's proposed upgrades the Devers-San Bernardino No.1 230 kV line by 2012 may eliminate the need for the SPS.

16. The interim mitigation for installing a SPS to trip the CPV sentinel generation may be replaced by follow-up reconductoring of the affected line as a part of the proposed SCE 2008 Transmission Expansion Plan.

17. The plant configuration using eight CTG units having a net 850 MW generation output and corresponding GSU transformers each with a non-standard modified percentage impedance (11.59@ 76 MVA rating) will

not have any material impact on the short circuit duty of lower queued projects.

18. There are no transient stability concerns in the SCE system due to the addition of the CPV Sentinel project.

19. CAISO completed an LGIA with CPV Sentinel in June of 2008.

20. CAISO or SCE will perform an Operational Study prior to the start of construction of transmission facilities.

21. Condition of Certification **TSE-5** requires the operational study be filed prior to the start of construction of transmission facilities.

22. The Conditions of Certification, including performance of the Operational Study and execution of the LGIA, ensure system reliability in the CAISO grid and compliance with WECC/NERC and CAISO Planning standards.

23. SCE will be responsible for construction within the existing fence line of the Devers substation.

24. SCE's proposed reconductoring the west of Devers 230 kV lines as part of their proposed annual grid expansion process will mitigate any cumulative marginal impacts attributable to the CPV Sentinel project.

25. Since the reconductoring project is not a direct network upgrade requirement for interconnection of the CPV Sentinel, it is beyond the scope of this general CEQA analysis.

26. The CPV Sentinel Project will supplement local wind generation and import of power to the SCE system.

27. The CPV Sentinel Project will help meet the increasing load demand in the Riverside County and Coachella Valley.

28. The CPV Sentinel Project will provide additional reactive power and voltage support in the local network, and may reduce system losses in the SCE system.

29. The proposed interconnecting facilities including the CPV Sentinel 230 kV switchyard, the single circuit 230 kV line to the Devers substation and its termination are adequate in accordance with good utility practices.

CONCLUSIONS OF LAW

We therefore conclude that with the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnection for the project will not contribute to significant direct, indirect, or cumulative impacts. The Conditions of Certification below ensure that the transmission-related aspects of the project will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the record.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall ensure that a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List are furnished to the CPM and to the CBO. 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 ensure that designated packages are provided to the CPM when requested.

Verification: At least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of construction, the project owner shall ensure that the schedule, a Master Drawing List, and a Master Specifications List are submitted to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with CPM and CBO approval. The project owner shall ensure that schedule updates are provided in the Monthly Compliance Report.

Table 1: Major Equipment List
Breakers
Step-up Transformer
Switchyard
Busses
Surge Arrestors
Disconnects and Wave-traps
Take off facilities
Electrical Control Building
Switchyard Control Building
Transmission Pole/Tower
Insulators and Conductors
Grounding System

TSE-2 Prior to the start of construction the project owner shall ensure that an electrical engineer and at least one of each of the following are assigned to the project: A) a civil engineer; B) a geotechnical engineer, or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) 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; or D) a mechanical engineer. (Bus.& Prof. Code §§ 6704 et seq., 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 (*e.g.,* 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 civil, geotechnical, or civil and design engineer assigned in conformance with Facility Design Condition **GEN-5**, may be responsible for design and review of the TSE facilities.

The project owner shall submit to the CBO for review and approval, the names, qualifications, and registration numbers of all engineers assigned to the project. If any one of the designated engineers is subsequently reassigned or replaced, the project owner shall submit the name, qualifications, and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer. This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations.

The electrical engineer shall:

1. Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall ensure that the names, qualifications and registration numbers of all the responsible engineers assigned to the project are submitted to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has five days in which to ensure that the name, qualifications, and registration number of the newly assigned engineer is submitted to to the CBO for review and approval. The project owner shall ensure that the CPM is notified of the CBO's approval of the new engineer within five days of the approval.

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall ensure that the discrepancy is documented and corrective action is recommended. (1998 CBC, Chap. 1, § 108.4, Approval Required; Chap. 17, § 1701.3, Duties and Responsibilities of the Special Inspector; appen. Chap. 33, § 3317.7, Notification of Noncompliance). The project owner shall ensure that the discrepancy documentation becomes a controlled document and is submitted to the CBO for review and approval and references this condition of certification.

Verification: The project owner shall ensure that a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy is submitted to the CPM within 15 days of receipt. If disapproved, the project owner shall ensure that the CPM is advised, within five days, the reason for disapproval, and the revised corrective action required to obtain the CBO's approval.

TSE-4 For the power plant switchyard, outlet line and termination, the project owner shall ensure that until plans for that increment have been approved by the CBO construction does not begin any increment. 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 ensure that the CBO is requested to 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.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of construction, the project owner shall ensure that 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 attesting to compliance with the applicable LORS, are submitted to the CBO for review and

approval and a copy of the transmittal letter is sent to the CPM in the next Monthly Compliance Report.

TSE-5 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The project owner shall ensure that the required number of copies of the design drawings and calculations are submitted to the CBO as determined by the CBO.

1. The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code 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.
2. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to accommodate full output from the project and to comply with a short-circuit analysis.
3. Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.
4. The project conductors shall be sized to accommodate the full output from the project.
5. Termination facilities shall comply with applicable PG&E interconnection standards.
6. The project owner shall ensure that the following items are provided to the CPM:
   a) A line route drawing after selecting one of the alternate route options for the generator interconnection 230 kV tie-line.
   b) The Special Protection System (SPS) sequencing and timing if applicable,
   c) A letter stating that the mitigation measures or projects selected by the transmission owners for each criteria violation are acceptable,
   d) The Operational study report based on the in-service date from the California ISO and/or SCE.

Verification: At least 60 days prior to the start of construction of transmission facilities (or a lesser number of days mutually agreed to by the project owner and

CBO), the project owner shall ensure that the following are submitted to the CBO for approval:

a) Design drawings, specifications and calculations conforming with CPUC General Order 95 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", NEC, applicable interconnection standards 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"[4] and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of them, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards.

c) Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **TSE-5** a) through f) above.

d) A line route drawing after selecting one of the alternate route options for the generator interconnection 230 kV tie line.

e) The Special Protection Scheme (SPS) sequencing and timing if applicable shall be provided concurrently to the CPM.

f) A letter stating that the mitigation measures or projects selected by the transmission owners for each criteria violation are acceptable.

g) The Operational study report based on 2010 or current COD system conditions (including operational mitigation measures) from the CAISO and/or PG&E.

TSE-6 The project owner shall ensure that the CPM and CBO are informed of any impending changes that may not conform to requirements **TSE-5** a) through f), and have not received CPM and CBO approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

[4] Worst case conditions for the foundations would include for instance, a dead-end or angle pole.

Verification: At least 60 days prior to the construction of transmission facilities, the project owner shall ensure that the CBO and the CPM are informed of any impending changes that` may not conform to requirements of **TSE-5** and request approval to implement such changes.

TSE-7 The project owner shall provide the following Notice to the California Independent System Operator (CAISO) prior to synchronizing the facility with the California Transmission system:

a) At least one week prior to synchronizing the facility with the grid for testing, provide the CAISO a letter stating the proposed date of synchronization; and

b) At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the ISO Outage Coordination Department.

Verification: The project owner shall provide copies of the CAISO letter to the CPM when it is sent to the CAISO one week prior to initial synchronization with the grid. The project owner shall contact the CAISO 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 CAISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-8 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37, "High Voltage Electric Safety Orders", applicable interconnection standards, NEC and related industry standards. In case of non-conformance, the project owner shall ensure that the CPM and CBO are informed in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall ensure that the following is transmitterd 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 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, related industry standards, and these conditions shall be provided concurrently.

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.

E. TRANSMISSION LINE SAFETY AND NUISANCE

The CPV Sentinel Project's transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This portion of the Decision assesses the potential impacts of the transmission line on aviation safety, radio frequency interference, audible noise, fire hazards, and hazardous and nuisance shocks. It also examines any risks arising from electric and magnetic field (EMF) exposure, as well as whether mitigation measures are required to reduce any potential impacts to insignificant levels. The evidence submitted by Applicant and Staff was uncontested. (11/3/08 RT 12-13, 31; Exs. 4; 32; 96; 118; 130; 200, § 4.11; 210.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The CPV Sentinel Project's associated transmission tie-line will extend from its switchyard to Southern California Edison's (SCE) Devers Substation. The 220 kV, single circuit line will be approximately 2,300 feet long and will traverse uninhabited desert land. It will be routed through an area with other 115 kV or 220 kV lines. These transmission corridors are not readily accessible to the general public. The nearest building is located approximately 1,300 feet away. (Ex. 200, pp. 4.11-1, 4.11-3 to 4.11-4.)

The line will be owned, operated, and maintained by SCE. Accordingly, its conductors will be standard low corona aluminum, steel reinforced cables; design and construction will be as specified in SCE's guidelines to ensure safety and efficiency, together with reliability and maintainability. (Ex. 200, p. 4.11-4.) Condition of Certification **TLSN-1** incorporates these factors.

The potential impacts from the project's transmission line involve aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure. Regarding each of these potential impacts, the evidence of record conclusively establishes the following:

- *Aviation Safety*

The nearest airport (Palm Springs International Airport) is approximately nine miles away and thus too far for the line's structures to pose a collision hazard.

The Devers Substation heliport is located to the north of the project site, also away from the project's structures. (Ex. 200, p. 4.11-4.)

- *Interference with Radio-Frequency Communication*

This potential impact arises from corona discharge and is primarily a concern for lines larger than 345 kV. The project's 220 kV line will be built and maintained according to standard SCE practices aimed at minimizing any interference. Moreover, the nearest residential receptor is about 1,300 feet from the line; this distance further reduces the potential for any impact. If interference should occur, however, Condition of Certificaton **TLSN-2** requires the project owner to mitigate these effects as feasible. (Ex. 200, pp. 4.11-4 to 4.11-5.)

- *Audible Noise*

This is typically perceived as a characteristic crackling, hissing, or frying sound or hum, especially in wet weather. The noise level depends upon the strength of the line's electric field, and is a concern mainly from lines of 345 kV or higher. The project line (220 kV) will embody a low corona design to minimize field strengths. It is not expected that the line will add significantly to the current background noise levels. (Ex. 200, p. 4.11-5.)

- *Hazardous Shocks*

These could result from contact between an individual and the energized line. Compliance with the CPUC's GO-95, as required in Condition of Certification **TLSN-1**, will ensure that adequate measures are implemented to mitigate this potential impact. (Ex. 200, p. 4.11-6.)

- *Nuisance Shocks*

These are effectively minimized through grounding procedures for all metallic objects within the right-of-way as specified in Condition of Certification **TLSN-5**. (Ex. 200, p. 4.11-6.)

- *Fire Hazards*

Fire can be caused by sparks from the line's conductors or by direct contact between the line and nearby combustible objects. SCE's standard fire prevention and suppression measures, and compliance with GO-95 as required

in Condition of Certification **TLSN-4**, ensure that appropriate fire prevention measures are implemented. (Ex. 200, p. 4.11-6.)

- *Exposure to Electric and Magnetic Fields*

Electric and magnetic fields (EMF) occur whenever electricity flows. The possibility of deleterious health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines.[1] Due to the present scientific uncertainty regarding potential health effects from EMF exposure, CPUC policy requires reduction of such fields, if feasible, without affecting safety, efficiency, reliability, and maintainability of the transmission grid. (Ex. 200, p. 4.11-7.)

The CPUC requires each new transmission line in California to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved. EMF fields produced by new lines must be similar to the fields of comparable lines in that service area. If the Sentinel line is designed in accord with existing SCE field strength-reducing guidelines, it will comply with CPUC requirements for EMF management. (Ex. 200, p. 4.11-8.)

SCE's specific field strength-reducing measures will be incorporated into the project line's design 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. (Ex. 200, p. 4.11-9.)

The evidentiary record also contains an estimation of the field strengths typically encountered along the route of a 220 kV line at a distance of 100 feet.[2] Condition of Certification **TLSN-3** requires that actual field strengths are measured, according to accepted procedures, before and after energization of

[1] While scientific research has not established a definitive correlation between EMF exposure and adverse health effects, the potential for EMF-related health hazards remains at issue. In this regard, the CPUC requires the regulated utilities, including SCE, to incorporate EMF-reducing measures in the design, construction, and maintenance of new transmission facilities and to operate existing facilities in accordance with those measures. (Ex. 200, p. 4.11-8.)

[2] The maximum strength of the electric field is estimated as 0.3 kV/m, that of the companion magnetic field as 7.1 mG. (Ex. 200, p. 4.11-9.) These strengths are similar to those of comparable SCE lines.

the line. These measurements will be used to assess any contribution the project may make to cumulative area exposures. (Ex. 200, p. 4.11-9.)

Overall, the evidence shows that the project will be designed, constructed, operated, and maintained in compliance with applicable LORS. Implementation of the Conditions of Certification will ensure that any impacts are reduced to less than significant levels. (Ex. 200, p. 4.11-11.)

FINDINGS OF FACT

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

1. The CPV Sentinel Project will interconnect to the existing SCE Devers Substation via a new 220 kV single circuit overhead outlet line approximately 2,300 feet long.
2. The new interconnection line will be routed through an area with other 115 kV or 220 kV lines and traverse uninhabited desert land.
3. The available scientific evidence does not establish that EMF fields pose a significant health hazard to humans.
4. There are no residences along the route of the project's transmission line.
5. The electric and magnetic fields generated by the project's transmission line will be managed to the extent the CPUC considers appropriate, based on available health effects information.
6. The project transmission line will comply with existing LORS for public health and safety.
7. The project transmission line will incorporate standard EMF-reducing measures established by SCE.
8. The project owner will coordinate with SCE to provide field intensity measurements before and after line energization to assess EMF contributions from the project-related current flow.
9. The project transmission line will not result in significant adverse environmental impacts to public health and safety or cause significant direct, indirect, or cumulative impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

CONCLUSIONS OF LAW

We therefore conclude that implementation of the Conditions of Certification, below, will ensure that the CPV Sentinel Project's outlet line complies with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall ensure that the proposed transmission lines are constructed according to the requirements of California Public Utility Commission's GO-95, 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 before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in this condition.

TLSN-2 The project owner shall ensure that every reasonable effort is made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project-related lines and associated switchyards. The project owner shall maintain written records for a period of five years of all complaints of radio or television interference attributable to line operation together with the corrective action taken in response to each complaint.

Verification: All reports of line-related complaints shall be summarized for the project-related lines and included during the first five years of plant operation in the Annual Compliance Report.

TLSN-3 The project owner shall use an individual experienced in measuring EMF according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/EEE) standard procedures to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity for which intensity estimates were provided by the project owner. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed not later than six months after the start of operations.

Verification: The project owner shall file copies of the pre-and post-energization measurements with the CPM within 60 days after completion of the measurements.

TLSN-4 The project owner shall ensure that the rights-of-way for the proposed transmission line are kept free of combustible material, as required under the provisions of Section 4292 of the Public Resources Code and Section 1250 of Title 14 of the California Code of Regulations.

Verification: During the first five years of plant operation, the project owner shall provide a summary of inspection results and any fire prevention activities carried out along the rights-of-way, and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the rights-of-way of the project-related lines are grounded according to industry standards regardless of ownership. In the event of refusal by any property owner to permit such grounding, the project owner shall so notify the CPM. Such notification shall include, when possible, the owner's written objection. Upon receipt of such notice, the CPM may waive the requirement for grounding the object involved.

Verification: At least 30 days before the lines are energized, the project owner shall transmit to the CPM a letter confirming compliance with this condition.

V. PUBLIC HEALTH AND SAFETY

Operation of the CPV Sentinel (Sentinel) Project 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 discusses the regulatory programs, standards, protocols, and analyses pertaining to these issues.

A. GREENHOUSE GAS (GHG) EMISSIONS

1. Introduction and Summary

The generation of electricity using fossil fuels, such as the natural gas that the Sentinel Project will consume, produces both "criteria pollutants" and greenhouse gas (GHG) emissions. Criteria pollutants are emissions that are known to adversely affect public health and for which regulatory agencies have established legal "criteria" which limit both the amount of the pollutants that may be emitted as well as the concentrations of the pollutants in the air. The project's criteria pollutant emissions and its compliance with applicable air quality laws are discussed in the Air Quality section of this Decision. This section assesses the GHG emissions that are likely to result from the construction and the operation of the project. (Ex. 214, p. 2.1-95.)

The GHG's consist of carbon dioxide (CO_2), nitrous oxide (N_2O), methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perflurocarbons (PFC). CO_2 emissions are far and away the most common of these emissions; as a result, even though the other GHGs have a greater impact on climate change on a per-unit basis, GHG emissions are often expressed in terms of "metric tons of CO_2-equivalent" ($MTCO_2e$) for simplicity. (Ex. 214, p. 2.1-95.)

There is general scientific consensus that climate change is occurring and that man-made emissions of GHG, if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures. (Ex. 214, p. 2.1-95.) Adding GHG to the atmosphere increases the insulating power of the air and thereby traps more heat at and near the earth's surface. The California Legislature has declared that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California." (Health & Saf. Code, § 38501(a).) (Ex. 214, p. 2.1-95.)

In this part of the Decision we determine that:

- The Sentinel Project's construction-produced GHG emissions will be insignificant;

- From a physical standpoint, the GHG emissions from a power plant's operation should be assessed not by treating the plant as a standalone facility operating in a vacuum, but rather in the context of the operation of the entire electricity system of which the plant is an integrated part;

- From a policy and regulatory standpoint, the GHG emissions from a power plant's operation should be assessed in the context of the state's GHG laws and policies, such as AB 32; and

- The Sentinel Project's operation will be consistent with the state's GHG policies and will help achieve the state's GHG goals, by (1) causing a decrease in overall electricity system GHG emissions; and (2) fostering the addition of renewable generation into the system, which will further reduce system GHG emissions.

As a result we find that the Sentinel's GHG emissions will comply with all applicable LORS (identified below in **Greenhouse Gas Table 1**) and will not result in any significant environmental impacts. We also find that the project is consistent with California's ambitious GHG goals and policies. (Ex. 214, pp. 2.1-111 to 2.1-112.)

2. Policy and Regulatory Framework

As the Legislature stated 35 years ago, "it is the responsibility of state government to ensure that a reliable supply of electrical energy is maintained at a level consistent with the need for such energy for protection of public health and safety, for promotion of the general welfare, and for environmental quality protection." (Pub. Res. Code, § 25001.) Today, as a result of legislation, the most recent aspect of "environmental quality protection" is the reduction of GHG emissions. Several laws and statements of policy are applicable as shown by **Greenhouse Gas Table 1** below.

Greenhouse Gas Table 1
Laws, Ordinances, Regulations, and Standards (LORS)

Applicable Law	Description
Federal	
40 Code of Federal Regulations (CFR) Part 98	This rule requires mandatory reporting of GHG emissions for facilities that emit more than 25,000 metric tons of CO_2 equivalent emissions per year.
State	
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	This act requires the California Air Resource Board (CARB) to enact standards that will reduce GHG emission to 1990 levels by 2020.
Title 20, California Code of Regulations, Subchapter 10, Article 2, sections 95100 et. seq.	These CARB regulations implement mandatory GHG emissions reporting as part of AB 32.
Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	These regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a GHG emissions 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)

(Ex. 214, p. 2.1-96).

a. AB 32

The organizing framework for California's GHG policy is set forth in the California Global Warming Solutions Act of 2006. [Assembly Bill 32, codified in Health & Saf. Code, § 38560 et seq. (hereinafter AB 32).] AB 32 requires the California Air Resources Board ("CARB") to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the level of statewide GHG emissions that existed in 1990. Gubernatorial Executive Order S-3-05 (June 1, 2005) requires a further reduction, to a level 80 percent below the 1990 GHG emissions, by the year 2050. (Ex. 214, p. 2.1-96).

Along with all other regulatory agencies in California, the Energy Commission recognizes that meeting the AB 32 goals is vital to the state's economic and environmental health. While the AB 32 goals have yet to be translated into regulations that limit GHG emissions from generating facilities, the scoping plan adopted by ARB relies heavily on cost-effective energy efficiency and demand response, renewable energy, and other priority resources in the loading order (discussed below) to achieve significant reductions of emissions in the electricity sector by 2020. Even more dramatic reductions in electricity sector emissions would likely be required to meet California's 2050 greenhouse gas reduction

goal. Facilities under our jurisdiction, such as the Sentinel Project, must be consistent with these policies. (Ex. 214, pp. 2.1-96 through 2.1-97.)

In addition to AB 32, there are several other important components of the GHG policy and regulatory structure.

b. Renewable Portfolio Standard

California statutory law requires the state's utilities to provide at least 20 percent of their electricity supplies from renewable sources by the year 2020. (Pub. Util. Code, § 399.11 et seq.) Recent gubernatorial Executive Orders increase the requirement to 33 percent and require CARB to adopt regulations to achieve the goal. [Governor's Exec. Orders Nos. S-21-09 (Sept. 15, 2009), S-14-08 (Nov. 17, 2008).] (Ex. 214, p. 2.1-97).

c. Emissions Performance Standard

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into long-term commitments with any facilities having a capacity factor greater than or equal to a 60 percent that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of CO_2 per megawatt-hour. This is the equivalent of 1,100 pounds CO_2/MWh. (Ex. 214, pp. 2.1-97-2.1-98, Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) Currently, the EPS is the only LORS that limits power plant emissions. (Ex. 214, p. 2.1-96 through 2.1-97.)

d. Loading Order

In 2003 the Energy Commission and the CPUC agreed on a "loading order" for meeting electricity needs: the first resources that should be added are energy efficiency and demand response (at the maximum level that is feasible and cost-effective); followed by renewables and distributed generation, and combined heat and power (also known as cogeneration); and finally efficient fossil sources and infrastructure development.[1] CARB's AB 32 Scoping Plan reflects these policy preferences. (California Air Resources Board, Climate Change Scoping Plan, December 2008). (Ex. 214, p. 2.1-96 through 2.1-97).

[1] California Energy Commission 2008, *2008 Integrated Energy Policy Report Update*, (IEPR) (CEC-100-2008-008-CMF.)

e. Energy Commission Policy on New Gas-Fired Power Plants

Implementation of the State and Energy Commission policies discussed above should result in increasing availability and flexibility of renewable generation. Gas-fired power plants such as Sentinel currently play a vital role in advancing the State's climate and energy goals by displacing less-efficient generation resources and facilitating the integration of renewables into the system. However, as the Energy Commission observed in its recent decision on the Avenal Energy Project (08-AFC-1), the ability of gas-fired generation to contribute to the State's climate and energy goals is limited. The availability of renewable generation will increase as new projects are licensed and built and the technology develops. Efficiency and conservation measures have already had a substantial impact on California's energy consumption, and new measures continue to be implemented. We therefore expect that the proportion of gas generation in the state's generation mix will gradually diminish. Accordingly, we must evaluate the consistency of each proposed gas-fired power plant with these policies in order to ensure that we license only those plants which will help to reduce GHG.

In Avenal, the Energy Commission established a three-part test to aid in its analysis of a proposed gas-fired plant's ability to advance the goals and policies described above. Gas-fired plants must:

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

2. not interfere with generation from existing renewable facilities nor with the integration of new renewable generation; and

3. reduce system-wide GHG emissions and support the goals and policies of AB 32.

We now turn to a discussion of whether, and how well, the project would comply with the above-stated policies.

3. Construction Emissions

Power plant construction involves vehicles and other equipment that emit GHG. The Sentinel Project's construction emissions are projected at 9,170 metric tons of CO_2-equivalent GHG during the 18-month construction period. (Ex. 214, p. 2.1-99.) By way of comparison, as discussed in the next section, the project's

GHG emissions from operations are estimated to be 960,504 metric tons annually, over 100 times the construction emissions.

There are no adopted, enforceable federal or state LORS applicable to the project's construction emissions of GHG. Nor is there a quantitative threshold over which GHG emissions are considered "significant" under CEQA. Nevertheless, there is guidance from regulatory agencies on how the significance of such emissions should be assessed.

We understand that "best practices" include the implementation of all feasible methods to control construction-related GHG emissions. As the "best practices" approach is currently recommended by the state agency primarily responsible not only for air quality standards but also for GHG regulation, we will use it here to assess the GHG emissions from the Sentinel Project's construction.

In order to limit vehicle emissions of both criteria pollutants and GHG during construction, the project owner will use (1) operational measures, such as limiting vehicle idling time and shutting down equipment when not in use; (2) regular preventive maintenance to manufacturer specifications; (3) low-emitting diesel engines meeting federal emissions standards for construction equipment, whenever available; and (4) equipment that meets the latest criteria emissions standards. These are the current "best practices" for limiting emissions from construction equipment; no party suggested otherwise. (Ex. 214, p. 2.1-101, Condition of Certification **AQ-SC5**.)

We find that the measures described above to directly and indirectly limit the emission of GHGs during the construction of the Sentinel Project are in accordance with current best practices. We also note that the GHG emissions anticipated from construction are minimal compared with anticipated operational emissions. GHG emissions will be intermittent and mitigated during that time due to the implementation of the best practices. We therefore find that the GHG emissions from short-term construction activities will not result in a significant adverse impact.

4. Emissions During Operation of the Facility

a. <u>Sentinel Project Emissions</u>

The primary sources of GHG emissions during the Sentinel Project's operation will be from the natural gas-fired combustion turbines. There will also be a small amount of GHG emissions from the diesel fuel consumed in the new emergency

fire pump engine, and sulfur hexafluoride emissions from electrical components. (Ex. 214, p. 2.1-100.) In operation, the project is expected to produce 960,504 metric tons of CO_2 equivalent annually. (Ex. 214, p. 2.1-100, **Greenhouse Gas Table 3**.)

The project's annual GHG emissions from operation equate to an emissions performance factor of 0.451 metric tons of CO_2 per megawatt hour. This is less than the Emission Performance Standard (EPS) of 0.500 metric tons of CO_2 per megawatt-hour described above. (*Id*.) However, that standard does not apply to this project, which is intended to operate in a peaking scenario as opposed to operating as a base load facility. (Ex. 214, pp. 2.1-93, 2.1-97 through 2.1-99.)

As we also noted above, the EPS is the only GHG LORS currently applicable to the Sentinel Project and determining compliance was readily calculated. Assessing whether the project's operational emissions are "significant" under CEQA is a more complicated matter.

b. Determining Significance: the Necessity of a System Approach

The process of electricity generation, production, and consumption is unique compared to other industrial projects. As a result, assessing the GHG impacts of power plants requires an approach that is different from the approach taken to analyze any other type of project, whether the analysis is scientific or legal.

In general, when an agency conducts a CEQA analysis of a project such as a proposed factory, shopping mall, or residential subdivision, it does not need to analyze how the operation of the proposed project will affect the larger system or group of factories, malls, or houses in a large multistate region. Rather, such projects are generally analyzed and evaluated on a stand-alone basis. The analysis and evaluation for power plants is, by necessity, different.

California's electricity system – which is actually a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex. Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity is produced and consumed instantaneously, and will be unless and until large-scale electricity storage technologies are available, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators. (Committee CEQA Guidance (*Committee Guidance on Fulfilling California*

Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications, CEC-700-2009-004.)[2]

Not only is the electricity system integrated physically, but also operates as such. The California Independent System Operator (CAISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus the CAISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). (Committee CEQA Guidance, p. 20.) Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), *when one power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated* (emphasis added). (Committee CEQA Guidance, *2007 IEPR*.)

In sum, the unique way power plants operate in an integrated system means that we must assess their operational GHG emissions on a system-wide basis rather than on a stand-alone basis.

We now turn to the specifics of the project's operation.

c. <u>SENTINEL's Effects on the Electricity System</u>

(1) Providing Capacity and Ancillary Services

Power plants serve a variety of functions. Most obviously, they provide energy to keep lights shining and machinery working (typically referred to as "load"). But in order to keep the system functioning properly, they must also meet local needs for capacity and for the "ancillary services" of regulation, spinning reserve, non-spinning reserve, voltage support, and black start capability. (Ex. 214, p. 2.1-98.)

Even as more renewable generation is introduced into the system, gas-fired power plants such as Sentinel will be necessary to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support, as well as meet local capacity requirements. At this time, gas-fired plants are better able to provide such services than are most renewables because they can be called upon when they are needed (dispatchable). (Ex. 214, p. 2.1-99.)

[2] The report was issued in March 2009 and is found on the Commission website at: **http://www.energy.ca.gov/2009publications/CEC-700-2009-004/CEC-700-2009-004.PDF**

(2) Displacement of More-Costly, Less-Efficient, and Higher-Emitting Power Plants

The CPV Sentinel Energy Project will have a heat rate 8,468 Btu/kWhr. This heat rate is lower than the heat rates of most other peaking and boiler generating units in the area, and would thus be more efficient and emit fewer GHG per MWh of generation that those other units. Because local generating units with the best (lowest) heat rate or lowest GHG performance factor generally operate more than other units with higher hear rates, Sentinel will most likely displace one or more of the other peaking and boiler generating plants, thus reducing the GHG emissions that would otherwise occur. (Ex. 214, pp. 2.1-102 through 2.1-103.)

(3) Fostering Renewables Integration

Most new renewable generation in California will be wind and solar generated power. But the wind and the sun are not continuous, on-demand resources. As a result, in order to rely on such intermittent sources of renewable-generated power, utilities must have available other, nonrenewable generating resources or significant storage that can fill the gap when renewable generation decreases. Indeed, because of this need for backup generation, or if and when utility-scale storage becomes feasible and cost-effective, nonrenewable generation must increase in order for the state to meet the 20 percent renewable portfolio standard. (Ex. 214, pp. 2.1-93, 2.1-103 through 2.1-104.)

As such, the Sentinel facility is a needed, nonrenewable generating resource. Because it can start quickly, it will provide flexible, dispatchable power necessary to integrate some of the growing generation from intermittent wind and solar generation. And it can do so more effectively than the more GHG efficient but slower reacting combined–cycle generators (Ex. 214, pp. 2.1-103 through 2.1-104.)

d. <u>The Limited Benefits of Natural Gas Power Plants</u>

At present, the California electricity system needs new efficient gas-fired generation to displace and replace less efficient generation, and to help integrate additional intermittent renewable generation. But as new gas plants are built to meet those needs, the system will change; moreover, the specific location, type, operation, and timing of each plant will be different. As a result, each plant will have somewhat different impacts. Furthermore, future implementation of efficiency and demand response measures, and new technologies such as storage, smart grid, and distributed generation, may also significantly change the physical needs and operation of the electrical system.

Therefore, we cannot and should not continue adding gas-fired plants *ad infinitum.* Here the evidence establishes that the Sentinel Project will not increase the system heat rate as it has a lower heat rate than many of the generators in the greater Los Angeles area. (Compare the Sentinel heat rate of 8,468 Btu/kWhr with those in Ex. 214, Greenhouse Gas Table 4, p. 2.1-102.) As we describe above, it will support, rather than interfere with, existing and new renewable generation. Finally, it will reduce system-wide GHG emissions and otherwise support the goals of AB 32.

We therefore find that GHG emissions from operation activities will not be significant.

FINDINGS OF FACT

1. The GHG emissions from the CPV Sentinel Energy Project construction are likely to be 9,170 $MTCO_2$ equivalent ("$MTCO_2E$") during the 18-month construction period.

2. There is no numerical threshold of significance under CEQA for construction-related GHG emissions.

3. Construction-related GHG emissions will be less than significant if they are controlled with best practices.

4. The project will use best practices to control its construction-related GHG emissions.

5. State government has a responsibility to ensure a reliable electricity supply, consistent with environmental, economic, and health and safety goals.
6. California utilities are obligated to meet whatever demand exists from any and all customers.

7. The maximum annual CO_2 emissions from the SENTINEL' Project's operation will be 960,504 $MTCO_2E$, which constitutes an emissions performance factor of 0.451 $MTCO_2E$ / MWh.

8. Under SB 1368 and implementing regulations, California's electric utilities may not enter into long-term commitments with base load power plants with CO_2 emissions that exceed the Emissions Performance Standard ("EPS") of 0.500 $MTCO_2$/MWh.

9. The EPS in SB 1368 is the only LORS that limits power plant emissions.

10. The Sentinel Project meets the EPS of 0.500 $MTCO_2$/MWh with a rating of 0.451 $MTCO_2$/MWh.

11. The California Renewable Portfolio Standard (RPS) requires the state's electric utilities obtain at least 33 percent of the power supplies from renewable sources, by the year 2020.

12. California's power supply loading order requires California utilities to obtain their power first from the implementation of all feasible and cost-effective energy efficiency and demand response, then from renewables and distribution generation, and finally from efficient fossil-fired generation and infrastructure improvement.

13. Even as more renewable generation is added to the California electricity system, gas-fired power plants such as the will be necessary to meet local capacity requirements and to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support.

14. There is no evidence in the record that construction or operation of the Sentinel will be inconsistent with the loading order.

15. When it operates, Sentinel will have a heat rate of 8.468 Btu/kWh.

16. When it operates, Sentinel will displace generation from less-efficient (i.e., higher-heat-rate and therefore higher-GHG-emitting) power plants in the Los Angeles Basin Local Capacity Requirements Area.

17. The Sentinel Project's operation will reduce overall GHG emissions from the electricity system.

18. Intermittent solar and wind generation will account for most of the installation of renewables in the next few decades.

19. Intermittent generation needs dispatchable generation, such as the SENTINEL, in order to be integrated effectively into the electricity system.

20. The Sentinel Project's operation will foster the addition of renewable generation into the electricity system, which will further reduce system GHG emissions.

21. The addition of some efficient, dispatchable, natural-gas-fired generation will be necessary to integrate renewables into California's electricity system and meet the state's RPS and GHG goals, but the amount is not without limit.

CONCLUSIONS OF LAW

1. The Sentinel Project's construction-related GHG emissions will not cause a significant adverse environmental impact.

2. The GHG 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.

3. The Sentinel Project's operational GHG emissions will not cause a significant environmental impact.

4. The Sentinel Project's GHG emissions will comply with the SB 1368 EPS.

5. The Sentinel Project's operation will help California utilities meet their RPS obligations.

6. The SENTINEL's construction and operation will be consistent with California's loading order for power supplies.

7. The Sentinel Project's operation will foster the achievement of the GHG goals of AB 32 and Executive Order S-3-05.

8. The GHG emissions of any power plant must be assessed within the system on a case-by-case basis.

9. The Sentinel Project will not increase the overall system heat rate for natural gas plants.

10. The Sentinel project will not interfere with generation from existing renewables or with the integration of new renewable generation; and

11. Taking into account Conclusions of Law 9 and 10 above, the Sentinel project will reduce system-wide GHG emissions.

12. Any new natural-gas-fired power plant that we certify must:

    a) not increase the overall system heat rate for natural gas plants;
    b) not interfere with generation from existing renewables or with the integration of new renewable generation; and
    c) have the ability to reduce system-wide GHG emissions.

B. AIR QUALITY

Operation of the CPV Sentinel Project will create combustion products and utilize certain hazardous materials that could pose health risks to the general public and workers at the facility. The following describes the regulatory programs, standards, protocols, and analyses pertaining to these issues.

This section examines the expected air quality impacts resulting from the emission of criteria air pollutants during construction and operation of the CPV Sentinel Energy Project (CPV Sentinel). Criteria air pollutants are defined as those air contaminants for which the state and/or federal government has established an ambient air quality standard to protect public health. The criteria pollutants analyzed are nitrogen dioxide (NO_2), sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), and particulate matter (PM10 and PM2.5). In addition, volatile organic compounds (VOC) emissions are analyzed because they are precursors to both ozone (O_3) and particulate matter. Because NO_2 and SO_2 readily react in the atmosphere to form other oxides of nitrogen and sulfur respectively, the terms nitrogen oxides (NOx) and sulfur oxides (SOx) are also used when discussing these two pollutants. (Ex. 214, p. 2.1-2.)

The Energy Commission determines whether the project will likely conform with applicable LORS, whether it will likely result in significant air quality impacts, including violations of ambient air quality standards, and whether the project's proposed mitigation measures will likely reduce potential impacts to insignificant levels. (Ex. 214, pp. 2.1-1 to 2.1-2.)

The United States Environmental Protection Agency (U.S. EPA) and the California Air Resource Board (CARB) have both established allowable maximum ambient concentrations of criteria air pollutants based on public health impacts, called ambient air quality standards (AAQS). The state AAQS, established by CARB, are typically lower (more stringent) than the federal AAQS, established by the U.S. EPA. The state and federal air quality standards are listed in **AIR QUALITY Table 1.** As indicated, the averaging times for the various air quality standards (the duration over which all measurements taken are averaged) range from one hour to one year (annual). The standards are read as a concentration, in parts per million (ppm), or as a weighted mass of material per unit volume of air, in milligrams (10^{-3} g, 0.001 g, or mg) or micrograms (10^{-6} g, 0.000001 g, or µg) of pollutant in a cubic meter (m^3) of air, averaged over the applicable time period. (Ex. 214, p. 2.1-6.)

The ambient air quality standards shown in **AIR QUALITY Table 2** define the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health. These standards are set at levels to adequately protect the health of all members of the public, including those most sensitive to adverse air quality impacts such as the aged, people with existing illnesses, children, and infants, and include a margin of safety. (Ex. 214, pp. 2.1-6 to 2.1-7).

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AIR QUALITY Table 1

Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	--
	8 Hour	0.07 ppm (140 µg/m^3)	0.075 ppm (147 µg/m^3)
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	150 µg/m^3
	Annual*	20 µg/m^3	--
Fine Particulate Matter (PM2.5)	24 Hour	--	35 µg/m^3
	Annual*	12 µg/m^3	15 µg/m^3
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (338 µg/m^3)	0.100 ppm**
	Annual*	0.030 ppm (56 µg/m^3)	0.030 ppm (56 µg/m^3)
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	--
	3 Hour	--	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	Annual*	--	0.03 ppm (80 µg/m^3)
Lead	30 Day Average	1.5 µg/m^3	--
	Calendar Quarter	--	1.5 µg/m^3
Sulfates	24 Hour	25 µg/m^3	--
Hydrogen Sulfide (H_2S)	1 Hour	0.03 ppm (42 µg/m^3)	--
Vinyl Chloride (chloroethene)	24 Hour	0.010 ppm (26 µg/m^3)	--
Visibility Reducing Particulates	8 hours	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.	--

* Annual Arithmetic Mean;
**Three-year average of 98th percentile daily maximum 1-hour values, scheduled to become effective April 12, 2010. This project is not subject to this new standard as discussed in the text.
(Ex. 200, p. 2.1-7.)

SUMMARY OF THE EVIDENCE

The project site is located in an unincorporated area of Riverside County, eight miles northwest of the City of Palms Springs. The area surrounding the project site is primarily industrial use with major development of wind energy and related transmission infrastructure. This area is at the east end of the San Gorgonio Pass in the Salton Sea Air Basin. The differences in season in the Salton Sea Air Basin are marked by air temperature and not rainfall, which is sparse year-round. The winter temperatures average approximately 70 degrees F; the summer temperatures average 109 degrees F. The temperature difference between night and day is substantial, ranging from 30 to 35 degrees F. The annual precipitation totals approximately five inches, occurring primarily in the winter months. (Ex. 214, p. 2.1-5.)

The CPV Sentinel project site is under the jurisdiction of the South Coast Air Quality Management District ("SCAQMD" or "the District"). The entire area within the boundaries of an air district is usually evaluated to determine the SCAQMD attainment status. **AIR QUALITY Table 2** lists the attainment and non-attainment status of the District for each criteria pollutant for both the federal and state ambient air quality standards. (Ex. 214, p. 2.1-8.)

AIR QUALITY Table 2
Attainment / Non-Attainment Classification
South Coast Air Quality Management District (SCAQMD)

Pollutants	Federal Classification	State Classification
Ozone	Non-Attainment	Non-Attainment
PM10	Non-Attainment	Non-Attainment
PM2.5	Unclassifiable/Attainment	Unclassified
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

(Ex. 214, p. 2.1-7.)

SCAQMD's Final Determination of Compliance

SCAQMD issued a Preliminary Determination of Compliance ("PDOC" or "Exhibit 140") for this project on May 7, 2008, and a Final Determination of Compliance ("FDOC" or "Exhibit 87") on August 9, 2009. In addition, on March 2, 2010,

SCAQMD issued an Addendum to the Determination of Compliance ("ADOC" or "Exhibit 141") for the proposed project. On May 12, 2010, revisions to the ADOC were filed (Exhibit 149), and minor corrections were submitted in a letter from SCAQMD, dated July 15, 2010 (Exhibit 150). The FDOC, which includes the ADOC and subsequent revisions and corrections, contains the permit conditions specified by the District to ensure compliance with applicable federal, state, and local air quality requirements. The conditions include emissions limitations, operating limitations, and offset requirements, as well as testing, monitoring, record keeping and reporting requirements that ensure compliance with air quality LORS. The District's permit conditions are incorporated into this Decision. (Ex. 87, 140, 141, 149, 150.)

In the power plant certification process, the District's FDOC serves as an in-lieu Authority to Construct (ATC) permit, which is required for new air pollution sources within the District's jurisdiction. The ATC cannot be implemented unless the Energy Commission certifies the project. (Pub. Res. Code § 25500; Cal. Code Regs, tit. 20, §§ 1744.5, 1752.3.)

1. Ambient Air Quality

Ambient air quality data has been collected extensively in the air basin. The maximum ambient measurements for the years 1999 through 2005 show that ozone, PM10, and PM2.5 continue to violate applicable standards while CO, NO_2 and SO_2 do not violate the standard. The record indicates the new federal short-term NO_2 standard was not evaluated because the application for this project was submitted before this new standard was proposed for adoption. The EPA has not developed a dispersion model post-processor to calculate the statistical compliance with the new standard, and a determination of the air basin attainment status is not scheduled until January 2012. (Ex. 214, pp. 2.1-7 to 2.1-8).

The following discussion provides an overview of air quality conditions in the air basin and describes the issues addressed by the parties in consultation with the District. (Ex. 214, p. 2.1-7.)

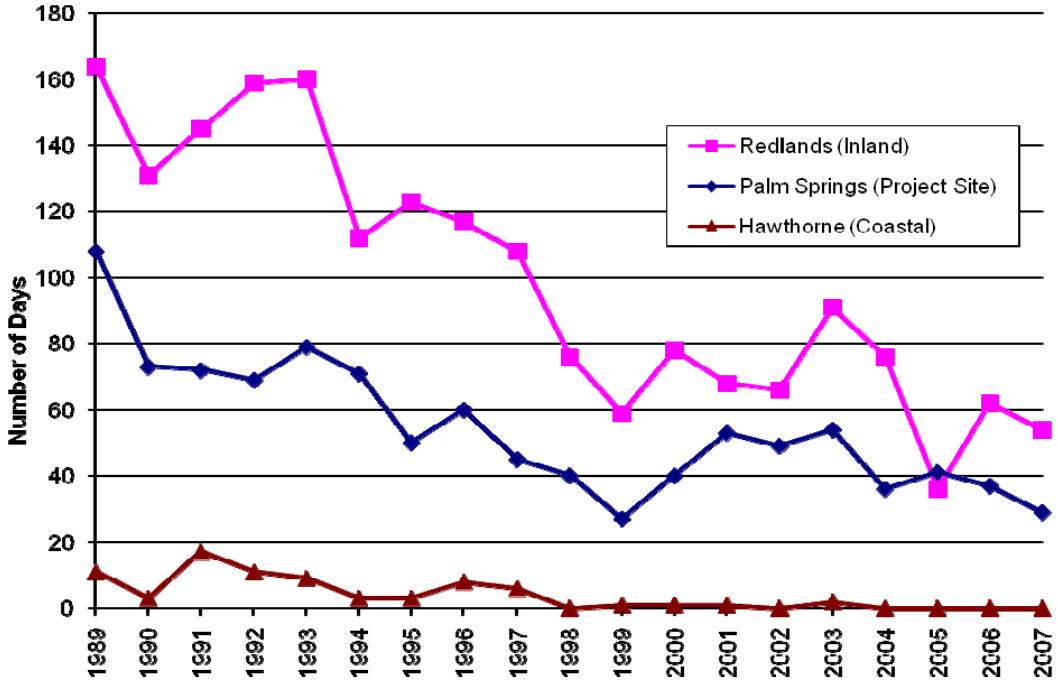
OZONE (O_3)

Both NO_x and VOC go through a number of complex chemical reactions to form ozone. (Ex. 214, p. 2.1-9.)

The SCAQMD is designated as severe-17 non-attainment for ozone (the second worst classification), meaning that the South Coast air basin ambient ozone design concentration is 0.280 ppm or above and it did not reach attainment before 2007. Efforts to achieve ozone attainment typically focus on controlling the ozone precursors, which are NOx and VOC. SCAQMD-published state implementation plans (SIP) rely on the CARB to control mobile sources, the U.S. EPA to control emission sources under federal jurisdiction, and SCAQMD to control local industrial sources. Through these control measures, California and the SCAQMD are required to reach attainment of the federal ozone ambient air quality standard by 2021 (2013 in the Coachella Valley). (Ex. 214, p. 2.1-10.)

Exceedances of the national and state ozone ambient air quality standards occur in the region both upwind and downwind of the project site. **AIR QUALITY Figure 1** shows the number of days each year that exceedances of the state 1-hour ozone standard occurred for three representative monitoring sites. The three monitoring sites were chosen to represent three distinct parts of the air shed: coastal region, proposed project region, and inland region. (Ex. 214, pp. 2.1-10 to 2.1-11.)

AIR QUALITY Figure 1
OZONE 1989-2007
Number of Days Exceeding the State 1-Hour AAQ



(Ex. 214, p. 2.1-9.)

Though there are a significant number of exceedances of the ozone ambient air quality standards throughout the South Coast air basin, improvements have occurred in recent years. The record shows that SCAQMD leads the nation in air quality management methods and its regulatory programs have significantly improved the air quality in spite of the growing population and industrial and commercial enterprises. **AIR QUALITY Figure 1** shows the improvements in ozone air quality levels over the past 16 years in the South Coast air basin, especially in the intermediate region near the proposed project site. As shown in **AIR QUALITY Figure 1**, in 2003 there was a slight increase over prior years in the number of exceedances recorded. Since 2003 however, the downward trend has returned, approaching the 2002 lower number of exceedances. However, the trends for Redlands and Palm Springs suggest these areas will not meet the original federal attainment date of 2010, but instead will meet federal attainment in 2013 for the Coachella Valley and 2021 for the remainder of the South Coast air basin. (Ex. 214, p. 2.1-11.)

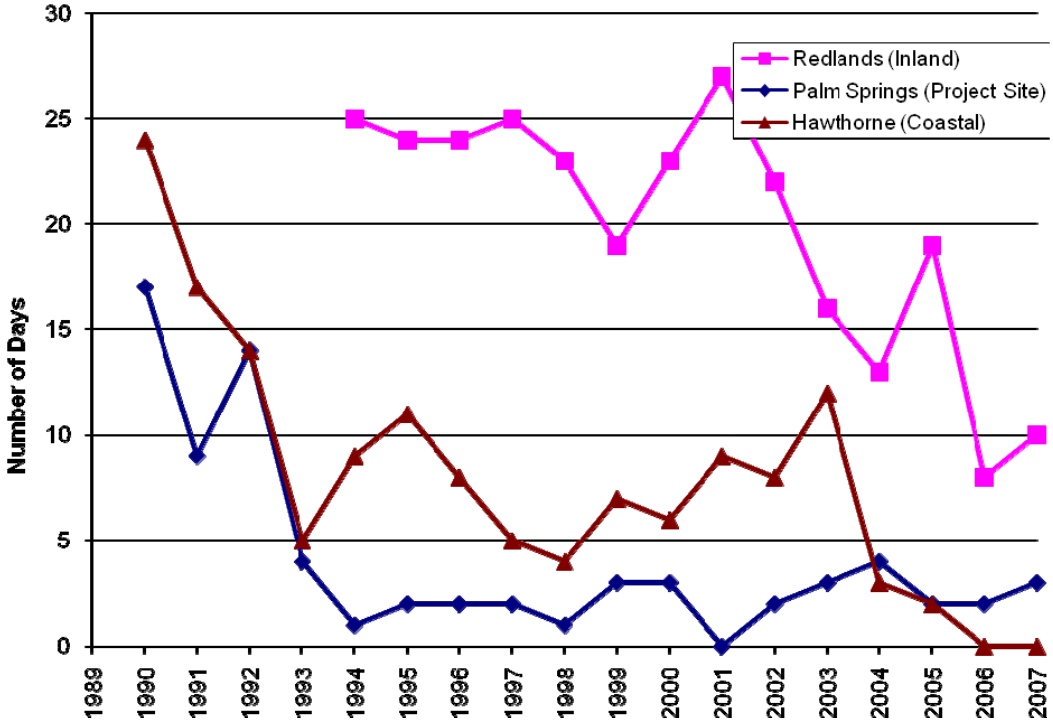
RESPIRABLE PARTICULATE MATTER (PM10)

PM10 is generated directly from a combustion process as well as downwind of a source when various emitted precursor pollutants chemically interact in the atmosphere to form solid precipitates. These solids are called secondary particulates because they are not directly emitted, but are still generated as a consequence of facility emissions. Gaseous emissions of pollutants such as NOx, SO_2, and VOC from turbines, and ammonia (NH_3) from NOx control equipment can form particulate nitrates, sulfates, and organic solids. (Ex. 214, p. 2.1-12.)

San Bernardino County (but not the entire South Coast air basin) has been designated a non-attainment area for the federal 24-hour and annual PM10 ambient air quality standards. The SCAQMD has recently taken action to have the Salton Sea Air Basin (SSAB), which includes the project site, redesignated as attainment for PM10. The SCAQMD and CARB Governing Boards have already approved the SSAB PM10 Redesignation and Maintenance Plan (RMP) for submittal to EPA for inclusion in the SIP (Ex. 146). However, the area is still classified as non-attainment for Federal PM10 standards until EPA approves the SIP, which would likely occur within one to two years. The South Coast air basin (including a portion of San Bernardino County within the basin) has been designated as a non-attainment zone for the state 24-hour and annual PM10 ambient air quality standards. **AIR QUALITY Figure 2** below shows the number of days each year on which exceedances of the state 24-hour PM10 standard

occurred for three representative monitoring regions: coastal, project site, and inland. The data shows some improvement over the period, but overall the PM10 problem persists. (Ex. 214, pp. 2.1-12 to 2.1-13.)

AIR QUALITY Figure 2
PM10 1989-2007
Number of Days Exceeding the State 24-Hour AAQS

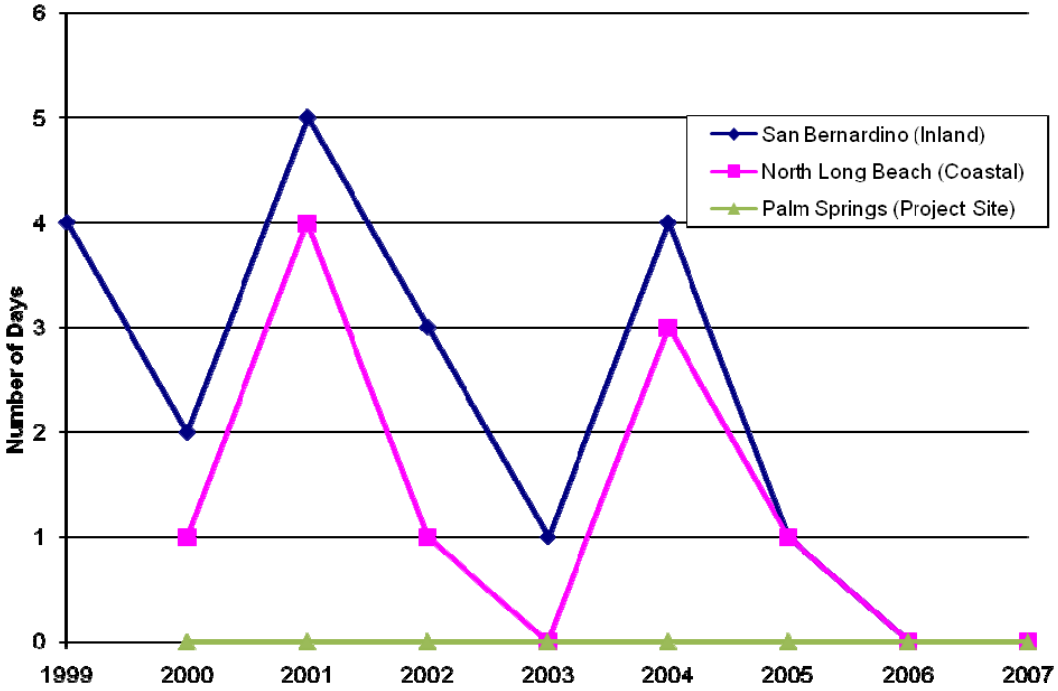


(Ex. 214, p. 2.1-12)

FINE PARTICULATE MATTER (PM2.5)

PM2.5, a subset of PM10, consists of particles with an aerodynamic diameter less than or equal to 2.5 microns. Particles within the PM2.5 fraction penetrate more deeply into the lungs, and can be much more damaging by weight than larger particulates. PM2.5 is primarily a product of combustion and includes nitrates, sulfates, organic carbon (ultra fine dust) and elemental carbon (ultra fine soot). **AIR QUALITY Figure 3,** below, shows the number of days each year on which exceedances of the new federal 24-hour PM2.5 standard of 35 $\mu g/m^3$ occurred. There is no separate short-term state standard. The highest concentrations of PM2.5 in the SCAQMD occur within the counties of San Bernardino and Riverside (similar to PM10), but also extend west toward downtown Los Angeles. (Ex. 214, p. 2.1-13.)

AIR QUALITY Figure 3
PM2.5 1999-2007
Number of Days Exceeding the Revoked Federal 24-Hour 65 ug/m^3 AAQS



(Ex. 214, p. 2.1-13)

Although the South Coast air basin is designated as non-attainment for all state and federal PM2.5 AAQS, the record indicates that SCAQMD has not yet finished preparing a PM2.5 SIP. The record shows that SCAQMD has submitted a PM2.5 SIP, and once the plan is approved by USEPA, the SCAQMD will prepare revised NSR rules that will likely require offsetting of PM2.5 emissions. The SCAQMD is thus unlikely to address PM2.5 in their rules within the schedule of this proposed project. Nevertheless, the record establishes that the Salton Sea Air Basin (SSAB) is not classified as non-attainment for federal and state ambient air quality standards for PM2.5. (SSAB is Unclassified for state and Unclassified/Attainment for federal.) Therefore, offsets are not specifically required for PM2.5 to demonstrate compliance with the Clean Air Act. (Ex. 214, pp. 2.1-15; 2.1-43.)

CARBON MONOXIDE (CO)

CO is generated from most combustion engines and other combustion activities. CO is considered a local pollutant, as it will rapidly oxidize to carbon dioxide. It is found in high concentrations only near the source of emissions. Automobiles and other mobile sources are the principal source of CO emissions. High levels of CO emissions can also be generated from fireplaces and wood-burning stoves. Industrial sources, including power plants, typically constitute less than 10 percent of the ambient CO levels in the South Coast region. (Ex. 214, p. 2.1-10.)

The highest concentrations of CO occur when low wind speeds and a stable atmosphere trap the pollution emitted at or near ground level in what is known as the stable boundary layer. These conditions occur frequently in the wintertime late in the afternoon, persist during the night and may extend one or two hours after sunrise. Because the mobile sector (ships, cars, trucks, busses and other vehicles) is the main source of CO, ambient concentrations of CO are highly dependent on traffic patterns. Carbon monoxide concentrations in the state have declined significantly due to two state-wide programs requiring oxygenated and reformulated gasoline. New vehicles with oxygen sensors and fuel injection systems have also contributed to the decline in CO levels in the state. Today, all counties in California are in compliance with the state and federal CO AAQS. (Ex. 214, p. 2.1-10.)

NITROGEN DIOXIDE (NO_2)

Most combustion activities and engines emit significant quantities of nitrogen oxides (NOx), a term used in reference to combined quantities of nitrogen oxide (NO) and NO_2. Most of the NOx emitted from combustion sources is NO. Although only NO_2 is a criteria pollutant, NO is readily oxidized in the atmosphere into NO_2. In urban areas, the ozone concentration level is typically high. That level will drop substantially at night as NO is oxidized into NO_2, and increase again in the daytime as sunlight disassociates NO_2 into NO and ozone. This reaction explains why urban ozone concentrations at ground level can be relatively low near large NO emission sources, while downwind rural areas (without sources of fresh NO emissions) are exposed to higher ozone concentrations as arriving NO_2 dissociates into NO and ozone in the presence of sunlight. (Ex. 214, p. 2.1-9.)

Although NO_2 is classified as in attainment with all state and federal AAQS, it remains of significant concern since it is a precursor to PM10, and ozone.

Therefore, we will require full offset mitigation in Condition of Certification **AQ-SC8**. (Ex. 214, p. 2.1-8.)

Sulfur Dioxide (SO_2)

Sulfur dioxide is typically emitted as a result of the combustion of fuels containing sulfur. In significant ambient quantities, SO_2 can lead to acid rain and sulfite particulate formation. Natural gas contains very little sulfur and consequently produces very few SO_2 emissions when combusted. By contrast, fuels high in sulfur, such as lignite (a type of coal), emit large amounts of SO_2 when combusted. Sources of SO_2 emissions within the basin come from every economic sector and include a wide variety of gaseous, liquid and solid fuels. (Ex. 214, pp. 2.1-8 to 2.1-9.)

Although SO_2 is classified as in attainment with all state and federal AAQS, it remains of significant concern since it is a precursor to PM10. Therefore, we will require full offset mitigation in Condition of Certification **AQ-SC8**. (Ex. 214, p. 2.1-8.)

2. Visibility

A visibility analysis of a project's gaseous emissions is required under the Federal Prevention of Significant Deterioration (PSD) permitting program, if the project triggers the PSD thresholds and, under SCAQMD Rule 1303, if the specific wilderness areas are within a prescribed distance from the facility. The evidence reflects that the nearest Class 1 areas are San Jacinto Wilderness Area, Joshua Tree National Park and San Gorgonio Wilderness Area. The predicted visual contrast values for these three Class 1 areas are below the significance criterion for actual plume backgrounds and the project is thus considered to have no significant impact on visibility for these areas. (Ex. 214, p. 2.1-30.)

3. Summary

Based upon the undisputed evidence discussed above, we accept the Staff Recommended Background Concentrations listed in **AIR QUALITY Table 3**, below as representing an acceptable level of background concentrations for use in the Air Quality Impacts Analysis.

AIR QUALITY Table 3
Staff Recommended Background Concentrations (µg/m^3)

Pollutant	Averaging Time	Recommended Background	Limiting Standard	Percent of Standard
NO_2	1 hour	174.8[a]	338	52%
	Annual	24.5	56	44%
CO	1 hour	2,645[a]	23,000	11%
	8 hour	944.4[a]	10,000	9%
PM10	24 hour	211[b,1]	50	**422%**
	Annual	54.9	20	**274%**
PM2.5	24 hour	44.4[b]	35	**127%**
	Annual	10.8[2]	12	90%
SO_2	1 hour	62.9[c]	655	9%
	24 hour	39.4[c]	105	37%
	Annual	10.7[c]	80	13%

Note: a) Coachella Valley 1: Palms Spring Fire Station Ambient Air Quality Monitoring Station
b) Coachella Valley 2: Indio-Jackson Street Ambient Air Quality Monitoring Station
c) Riverside-Rubidoux Ambient Air Quality Monitoring Station
1) This data may be excluded by EPA and ARB in accordance with EPA's National Event Policy (ARB has approved exclusion, while EPA is currently reviewing the revised SIP and proposed redesignation of the basin to attainment (Ex. 146).). In that case, staff recommends using a value of 122 µg/m^3, the next highest value.
2) Federal annual mean, there is insufficient data for the state annual mean.

(Ex. 214, p. 2.1-16.)

4. Impacts Analysis

CPV Sentinel, LLC seeks to develop, build, own, and operate a simple cycle peaking power plant. CPV Sentinel would be a nominally rated 850 MW electrical generating facility that would encompass 37 acres of land situated within unincorporated Riverside County, California, adjacent to the Palm Springs northern city limits. The proposed project consists of eight natural gas-fired General Electric LMS100 combustion turbine generators (CTGs), each with an exhaust stack 13.5 feet in diameter and 90 feet tall. (Ex. 214, Appendix Air-1 p. 93.)

The CPV Sentinel project's major air emissions sources will be the eight CTGs, oxidation catalyst and selective catalytic reduction (SCR) equipment, eight single cell mechanical draft cooling towers, and a 240 brake horsepower (bhp) diesel emergency fire pump engine (Tier III). The linear construction elements will be a

2.6 mile long natural gas pipeline extending from the existing Indigo Energy Facility, a 2,300 foot long 230 kV transmission line connecting to the existing Devers substation, 3,200 foot long road extending off Dillon Road to the project site and associated intersection widening at Dillon Road and the site access road, and 3,200 foot long potable water supply pipeline extending off Dillon Road to the project site. (Ex. 214, pp. 2.1-15 to 2.1-16.)

The potential emissions from the facility are classified in three categories: construction, initial commissioning, and operation.

a. Construction Impacts

Facility construction is expected to take about 18 months. The power plant project construction consists of three major areas of activity: 1) the civil/structural construction; 2) the mechanical construction; and 3) the electrical construction. The projected maximum daily and annual emissions, based on the highest monthly emissions over the entire construction period, are shown in **AIR QUALITY Table 4**. (Ex. 214, p. 2.1-17.)

AIR QUALITY Table 4
Estimated Maximum Construction Emissions (over 18 months)

	NOx	SO_2	CO	VOC	PM10	PM2.5
Maximum Daily Emissions (lb/day)	110.4	0.1	63.6	18.6	13.6	7.6
Maximum Annual Emissions (tons/year)	14.7	0.02	8.6	2.6	2.4	1.2

(Ex. 214, p. 2.1-17.)

The record indicates that the largest percentage of these construction emissions will likely be emitted during the first phase of project site activity, mostly due to earth moving, grading activities, large equipment operations, underground utility installation, and building erection. These types of activities require the use of large earth moving equipment which generate considerable direct combustion emissions, along with fugitive dust emissions. The mechanical construction phase includes the installation of the heavy equipment such as the gas turbines, compressors, pumps, and associated piping. Although not a large fugitive dust generation activity, the use of large cranes to install such equipment generates significantly more direct combustion emissions than other construction equipment. Lastly, the electrical construction phase involves installation of transformers, switching gear, instrumentation, and all wiring, and is a relatively

small source of emissions in comparison to the earlier construction activities. (Ex. 214, p. 2.1-17.)

The evidence analyzed both fugitive dust generated from the construction activity and combustion emissions produced by construction equipment, including the following major sources:

- Dust entrained during site preparation and finish grading;
- Dust entrained during onsite travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations;
- Dust caused by wind erosion of areas disturbed during construction;
- Exhaust from diesel construction equipment used for site preparation, grading, excavation, and construction;
- Exhaust from water trucks used for onsite paved and unpaved road fugitive dust control;
- Exhaust from diesel powered welding machines, electric generator, air compressors, and water pumps;
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the construction site;
- Exhaust from diesel trucks used to deliver concrete, fuel, and construction supplies to the site; and
- Exhaust from automobiles used by workers to commute to the construction site. (Ex. 214, pp. 2.1-24 to 2.1-25.)

The maximum 24-hour impacts were assessed using the emission rates for the month of maximum activity and annual impacts were assessed using the average emissions for the entire construction period. The results of this modeling effort shown in **AIR QUALITY Table 5**, below, were added to the assumed maximum background values, and compared to the most restrictive AAQS. (Ex. 214, p. 2.1-17.)

AIR QUALITY Table 5
Maximum Construction Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
NO_2	1 hour	145.5	174.8	320.3	338	95%
	Annual	7.69	24.5	32.19	56	57%
CO	1 hour	95.3	2,645	2,740.3	23,000	12%
	8 hour	23.1	944.4	967.5	10,000	10%
PM10	24 hour	3.41	211	214.41	50	**429%**
	Annual	1.03	54.9	55.93	20	**280%**
PM2.5	24 hour	1.17	44.4	45.57	35	130%
	Annual	0.56	10.8	11.36	12	95%
SO_2	1 hour	0.21	62.9	63.11	655	10%
	24 hour	0.02	39.4	39.42	105	38%
	Annual	0.01	10.7	10.71	80	13%
Includes emissions due to site grading, laydown, building, and pipeline excavation activities.						

(Ex. 214, p. 2.1-24.)

As the modeling results in **AIR QUALITY Table 5** shows, the project's construction emissions will not cause a new violation of the NO_2, CO and SO_2 ambient air quality standards, and thus the evidence does not prove these impacts to be significant. Nevertheless, the record indicates that the particulate emissions from the construction of the project could create a potentially significant impact because they will contribute to existing violations of the annual and 24-hour average PM10 and the 24-hour federal PM2.5 AAQS. Those emissions must be mitigated to a level of insignificance. The record discloses that the NO_2 results in **AIR QUALITY Table 5** are not in the form required to evaluate compliance with the new federal 1-hour NO_2 standard. The new federal short-term NO_2 standard is not evaluated because the application for the Sentinel project was submitted well before this new standard was proposed for adoption. The U.S. EPA has not developed a dispersion model post-processor to calculate the statistical compliance with the new standard and a determination of the air basin attainment status is not expected until January 2012. (Ex. 214, p. 2.1-25.)

b. Construction Mitigation

The record provides a number of mitigation and emissions control measures for use during the construction of the project, including the following measures to control exhaust emissions from heavy diesel construction equipment:

- Operational measures, such as limiting time spent with the engine idling by shutting down equipment when not in use;

- Regular preventive maintenance to prevent emission increases due to engine problems;

- Use of low sulfur and low aromatic fuel meeting California standards for motor vehicle diesel fuel; and

- Use of low-emitting gas and diesel engines meeting state and federal emissions standards (Tier I and II) for construction equipment, including, but not limited to catalytic converter systems and particulate filter systems. (Ex. 214, p. 2.1-26.)

Condition of Certification **AQ-SC3** also includes the following measures to control fugitive dust emissions during construction of the project:

- Use of either water application or chemical dust suppressant application to control dust emissions from on-site unpaved road travel and use of unpaved parking areas;

- Use of vacuum sweeping and/or water flushing of paved road surfaces to remove buildup of loose material to control dust emissions from travel on the paved access road (including adjacent public streets impacted by construction activities) and paved parking areas;

- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard;

- Limit traffic speeds on unpaved site areas to 5 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to roadways;

- Replant vegetation in disturbed areas as quickly as possible;
- Use wheel washers or wash tires of all trucks exiting the construction site; and

- Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant. (Ex. 214, p. 2.1-26.)

The evidence suggests that the use of oxidizing soot filters is a viable emissions control technology for all heavy diesel powered construction equipment that does

not use an ARB certified low emission diesel engine and ultra-low sulfur content diesel fuel. Prior to the commencement of construction, the Conditions of Certification require the project owner to provide an Air Quality Construction Mitigation Plan (AQCMP) that specifically identifies the mitigation measures it will employ to limit air quality impacts during construction. Conditions of Certification **AQ-SC1** through **AQ-SC5** implement the above requirements. (Ex. 214, p. 2.1-25.)

Condition **AQ-SC1** requires the Applicant to have an on-site Construction Mitigation Manager who will be responsible for the implementation and compliance of the construction mitigation program. The documentation of the ongoing implementation and compliance with the construction mitigation program will be provided in the monthly construction compliance report that is required in Condition of Certification **AQ-SC3**. (Ex. 214, pp. 2.1-27; 2.1-72.)

We adopt the construction mitigation measures set forth in Conditions of Certification **AQ-SC1** through **AQ-SC5** to assure maximum feasible fugitive dust control performance, vehicle exhaust emission mitigation, construction equipment exhaust emissions control, and compliance enforcement mechanisms. (Ex. 214, pp. 2.1-71 to 2.1-76.) Given the temporary nature of the worst-case construction impacts, with the implementation of the mitigation measures contained in the Conditions of Certification we find that the construction air quality impacts will be less than significant.

c. Initial Commissioning Impacts

The initial commissioning of a power plant refers to the time frame between completion of construction and the consistent production of electricity for sale on the market. Normal operating emission limits usually do not apply during initial commissioning procedures. The CPV Sentinel project will go through several tests during initial commissioning. During the first set of tests, post-combustion controls will not be operational (i.e., the SCR and oxidation catalyst). (Ex. 214, p. 2.1-29.)

Initial commissioning starts with a Full-Speed, No-Load test. This test runs the turbine at approximately 20 percent of its maximum heat input rate. Components tested include the ignition system, synchronization with the electric generator and the turbine-over speed safety system. Part Load testing runs the turbines to approximately 60 percent of the maximum heat input rating. During this test, the turbine will be tuned. Full Load testing runs the turbines at their maximum heat input rate. This testing entails further tuning of the turbine. Full Load with partial

SCR testing runs the turbines at 100 percent of their maximum heat input rate and operates the SCR ammonia injection grid for the first time at less than maximum injection rate. Finally, Full Load with full SCR testing runs the turbines at their maximum heat input rate and operates the SCR ammonia inject grid at its full capacity. It is during this test that the SCR system will be completely tuned and operated at design levels (i.e., NOx control at 2.0 ppm). (Ex. 214, p. 2.1-29.)

The record indicates that there is little experience to draw from regarding the initial commissioning of the GE LMS100 turbines. The evidence shows that it will take approximately 150 hours of actual turbine operation per turbine train for commissioning purposes. CPV Sentinel estimates that the maximum NOx emission rate (80 lbs/hr for one turbine) and the maximum CO emission rate (198 lbs/hr) will most likely occur during load step 10 of the dynamic commissioning when the water injection is 100 percent effective and the turbine train is at 100 percent load (SCR and oxidation catalyst are not yet commissioned). (Ex. 214, pp. 2.1-29 to 2.1-30, Ex. 215, p. 3.)

The evidence regarding commissioning relies upon the U.S. EPA approved AERMOD model for the calculation of commissioning impacts. AIR QUALITY **Table 5** shows the highest modeled impacts in comparison with the one-hour NO_2 and CO standards and the 8-hour CO standard. The modeled NOx and CO emission rates presented show that there is no reasonable expectation that the emissions from initial commissioning will cause or contribute to an exceedance of the limiting ambient air quality standards. (Ex. 214, p. 2.1-28.)

AIR QUALITY Table 5
CTG Commissioning Modeling
Maximum 1 hour Impacts (μg/m^3)

POLLUTANT	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
NO_2	109.8	174.8	284.6	338	84%
CO 1-HOUR	205.5	2645	2851	23,000	12%
CO 8-HOUR	166.0	944.4	1110.4	10,000	11%

(Ex. 214, p. 2.1-30.)

The evidence shows and we find that no significant impacts will occur during initial commissioning.

d. Operational Phase Impacts

While the construction and commissioning impacts are both relatively short lived, the operation impacts from the project will continue throughout the life of the facility. The record contains a refined modeling analysis using the AERMOD model to quantify the potential impacts of the project during both full load operation and startup conditions. The worst case (maximum) results of this modeling analysis are shown in **AIR QUALITY Table 6.** (Ex. 214, p. 2.1-27).

AIR QUALITY Table 6
Refined Modeling Maximum Impacts During Startup and Operation
(µg/m^3)

POLLUTANT	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
NO_2	1 hour	139.6[a]	174.8	314.4	339	93%
	Annual	0.46[c]	24.5	24.96	57	44%
CO	1 hour	163.5[a]	2,645	2,808.50	23,000	12%
	8 hour	15.7[a]	944.4	960.1	10,000	10%
PM10	24 hour	10.6[b]	211	221.6	50	**443%**
	Annual	0.43[c]	54.9	55.33	20	**277%**
PM2.5	24 hour	10.6[b]	44.4	55	35	**157%**
	Annual	0.43[c]	10.8	11.23	12	94%
SO_2	1 hour	33.2[b]	62.9	96.1	655	15%
	24 hour	11.0[b]	39.4	50.4	105	48%
	Annual	0.03[c]	10.7	10.73	80	13%

[a] modeled 1-hour average impacts during startup event
[b] modeled 1-hour average impacts during full load operation
[c] Modeled annual operational assumptions for all emitting devices (see AIR QUALITY Table 11).

(Ex. 214, p. 2.1-27)

The record indicates that startup impacts (NOx and CO) are much larger than full load impacts not only because the emissions are greater, but also because the flue gas stream is at a lower velocity and temperature. This reduced emissions velocity means the plume will level off at a lower height and thus have less time to dilute before reaching the ground. The evidence establishes that the values presented in **AIR QUALITY Table 6** are very conservative, based on worst case startup emission estimates from the turbine manufacturer so that typical startup events are likely to generate significantly fewer emissions and impacts. The analysis is also conservative with regard to the assumed background measurements. The analysis assumes that the highest background measurements from the last four years coincide (in both location and timing) with

the maximum project emission impacts. Thus, these conservative worst case modeled conditions are not likely to occur because such a high background level is unlikely to happen at the same time and location as the maximum impacts from the project. (Ex. 214, pp. 2.1-27 to 2.1-28.)

The modeled impact values in **AIR QUALITY Table 6** show that during worst case startup and full load operations, the facility will potentially contribute to the existing PM10 violations. These violations could exceed 400 percent of the ambient air quality standard. The record shows that the air dispersion modeling predicted the location of the highest PM10/PM2.5 ambient air quality impacts 600 meters (or just over 1/3 a mile) to the south of the project site. Since the project PM10/PM2.5 emission impacts will contribute to an existing exceedance of the PM10 and PM2.5 state and federal ambient air quality standards, the analysis in evidence presumes that these impacts may also contribute to existing human health impacts (generally in the form of respiratory impacts). Thus, the record indicates that the project's PM10/PM2.5 emission impacts to be significant if left unmitigated. (Ex. 214, p. 2.1-28)

Since the project's impacts alone do not cause a violation of any NO_2, CO, or SO_2 ambient air quality standards under such conservative assumptions, the record indicates that the project impacts for those pollutants are insignificant. Although the direct NO_2 impacts from the CPV Sentinel project do not cause a violation of the NO_2 ambient air quality standard, all NO_2 emissions from the facility will need to be offset with Regional Clean Air Incentives Market (RECLAIM) Trading Credits (RTCs) to maintain district wide progress toward attainment with the ozone ambient air quality standards because NO_2 is a precursor emission to ozone formation (see Conditions of Certification **AQ-2** and **AQ-16**). Similarly, the direct SO_2 impacts from the CPV Sentinel project, which do not cause a violation of the SO_2 ambient air quality standards, will need to be offset either with Emission Reduction Credits (ERCs) or Priority Reserve Credits (PRCs) to maintain district-wide progress toward attainment with the PM10 ambient air quality standards because SO_2 is a precursor pollutant to secondary PM10/PM2.5 formation. The Operations Mitigation section below contains a discussion of the proposed mitigation. (Ex. 214, p. 2.1-28)

Sentinel's fumigation impacts were calculated using the U.S. EPA approved SCREEN3 model (version 96043) without a shoreline assumption, since the Sentinel site is a significant distance from the nearest shoreline. **AIR QUALITY Table 7** shows the highest modeled fumigation impacts in comparison with the one-hour NO_2, SO_2 and CO standards. Since fumigation impacts will not typically

occur for more than a one-hour period, only the impacts on the one-hour standards are shown. The results of the modeling analysis show that fumigation impacts will not violate any of the one-hour standards. (Ex. 214, p. 2.1-29.)

AIR QUALITY Table 7
CTG Fumigation Modeling Maximum 1 hour Impacts (µg/m^3)

POLLUTANT	Modeled Impact from 1 Unit	Modeled Impact from 8 Units	Background	Total Impact	Limiting Standard	Percent of Standard
NO_2	0.7955	6.364	174.8	181.16	338	54%
CO	1.16	9.291	2645	2654.3	23,000	12%
SO_2	0.061	0.49	62.9	63.39	655	10%

(Ex. 214, p. 2.1-29.)

CPV Sentinel's gaseous emissions of NOx, SO_2, VOC and ammonia can contribute to the formation of secondary pollutants: ozone and PM10/PM2.5. The record indicates that there are no regulatory agency models approved for assessing single source ozone impacts. However, because of the known relationship of NOx and VOC emissions to ozone formation, the emissions of NOx and VOC from the CPV Sentinel project do have the potential (if left unmitigated) to contribute to higher ozone levels in the region. These impacts would be significant because they would contribute to ongoing violations of the state and federal ozone ambient air quality standards. (Ex. 214, p. 2.1-30.)

The record suggests that it is not reasonably possible to estimate the impacts from the CPV Sentinel project emissions of ammonia, but that these emissions are small and well controlled. The evidence indicates that the CPV Sentinel project ammonia emissions do not have the potential to cause a significant impact on the ambient air quality. However, the emissions of NOx and SOx from the CPV Sentinel project have the potential (if left unmitigated) to contribute to higher PM2.5 levels in the region. These impacts would be significant because they would contribute to ongoing violations of the state and federal PM2.5 ambient air quality standards. The mitigation of the project NO_x and SO_x emissions is discussed in the Operations Mitigation section below. (Ex. 214, pp. 2.1-31 to 2.1-32.)

A visibility analysis of a project's gaseous emissions is required under the Federal Prevention of Significant Deterioration (PSD) permitting program if the project triggers the PSD thresholds and under District Rule 1303 if the specific wilderness areas are within a prescribed distance from the facility. The evidence

established that the nearest Class 1 areas are San Jacinto Wilderness Area, Joshua Tree National Park and San Gorgonio Wilderness Area. The predicted visual contrast values for these three Class 1 areas are below the significance criterion for actual plume backgrounds so the CPV Sentinel project will not have a significant impact on visibility for these areas.

e. Operations Mitigation

The CPV Sentinel project's air pollutant emissions impacts will be reduced by using emission control equipment on the project and by providing emission offsets. Over the last 20 years, combustion turbine manufacturers have focused their attention on limiting the NOx formed during combustion. One method has been steam or water injected into the combustor cans to reduce combustion temperatures and the formation of thermal NOx, which is the primary source of NOx emissions from a CTG. This method has been employed for many years and is well understood. The project will utilize water injection for the combustors in the GE LMS100 turbines and an SCR system with an ammonia injection grid to reduce NOx emissions. (Ex. 214, p. 2.1-32.)

Cooling Towers

To reduce the PM10 emissions from the cooling towers, the Applicant has committed to using wet, mechanical draft cooling towers with a drift eliminator rated at 0.0005 percent and the cooling tower's water total dissolved solids will be limited to 5,000 mg/liter. The cooling tower compliance will be monitored through Conditions of Certification **AQ-SC10** and **AQ-SC11** which contain mitigation measures to avoid chronic exceedances. (Ex. 214, p. 2.1-32.)

Combustion Turbine

To reduce CO emissions, the project will use a combination of good combustion and maintenance practices, along with an oxidizing catalyst. The use of a clean-burning fuel (natural gas) and the efficient combustion process of the CTGs will limit VOC and PM10 emissions. The use of natural gas as the only fuel will limit SO_2 emissions (Conditions of Certification **AQ-6** and **AQ-10**). (Ex. 214, p. 2.1-32.)

Flue Gas Controls

To further reduce the emissions from the combustion turbines before they are exhausted into the atmosphere, flue gas controls, primarily catalyst systems, will be installed for the GE LMS100s. The project will utilize two catalyst systems: an

SCR system to reduce NOx, and an oxidizing system to reduce CO and VOC (Condition of Certification **AQ-9, -13** and **-14**). (Ex. 214, p. 2.1-33.)

Selective Catalytic Reduction (SCR)

SCR refers to a process that chemically reduces NO_x by injecting ammonia into the flue gas stream over a catalyst in the presence of oxygen. The process is termed selective because the ammonia reducing agent preferentially reacts with NO_x rather than oxygen, producing inert nitrogen and water vapor (Conditions of Certification **AQ-11** and **-12**). (Ex. 214, p. 2.1-33.)

Oxidizing Catalyst

To reduce the turbine CO and VOC emissions, the applicant proposes to install an oxidizing catalyst, which is similar in concept to catalytic converters used in automobiles. The catalyst is usually coated with a noble metal, such as platinum, which will oxidize unburned hydrocarbons and CO to water vapor and carbon dioxide (CO_2). The catalyst is proposed to limit the CO concentrations exiting the exhaust stack to six ppm, corrected to 15 percent excess oxygen and averaged over three-hours. (Conditions of Certification **AQ-1**). (Ex. 214, p. 2.1-32.)

Emission Offsets

The project must obtain sufficient offsets to satisfy either SCAQMD Rule 1303 (which requires Emission Reduction Credits (ERCs) and Regulation XX (which requires participation in the RECLAIM program) as well as to mitigate the project impacts under CEQA. **AIR QUALITY Table 8** summarizes the project plan to offset or otherwise mitigate the CPV Sentinel project emission impacts. (Ex. 214, p. 2.1-33.)

AIR QUALITY Table 8
Operational Emission Offsets and Mitigation Proposed by the Applicant

Pollutant	Amount of Offsets Required	Offset or other mitigation
VOC	441 lbs/day[a]	ERCs – supplied by CPV Sentinel, LLC.
NOx	Commissioning Year RTCs – 286,786.05 lbs/year Other Years RTCs – 240,958.05 lbs/year	RTCs – supplied by CPV Sentinel, LLC.
SOx	Commissioning Year – 13,928 lbs/year Other Years – 13,560 lbs/year	AQMD's internal offset accounts, per AB1318.
PM10	Commissioning Year –118,120 lbs/year Other Years – 112,180 lbs/year	AQMD's internal offset accounts, per AB1318.
CO	None	.[b]
PM2.5	None	.[d]

a Includes 1.2-to-1.0 offset ratio, as per Rule 1303(b)(2)(A.)

b SSAB is not classified as Nonattainment for federal and state ambient air quality standards for CO. (SSAB is classified as Attainment for state and is Unclassified/Attainment for federal.) Therefore, no CO offsets are required. The worst case maximum yearly CO emission of 188 tons/year is below the 250 ton/year threshold for Prevention of Significant Deterioration (PSD) as specified by Rule 1701(b)(2). Therefore, does not require a PSD permit.

c Assuming all (100%) of PM10 emissions are PM2.5.

d SSAB is not classified as Nonattainment for federal and state ambient air quality standards for PM2.5. (SSAB is Unclassified for state and Unclassified/Attainment for federal.) Therefore, no PM2.5 offsets are required. The worst case maximum yearly PM2.5 emission of 59.06 tons/year is below the 250 ton/year threshold for PSD and, therefore, it does not require a PSD permit. (Ex. 214, p. 2.1-33.)

The 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 reduction credits. CPV Sentinel is exempt and excluded from the RECLAIM program (Rule 2011) because it uses natural gas exclusively (per Rule 2001). However, it will be a NOx RECLAIM project and therefore subject to the rules of RECLAIM for NOx emissions. (Ex. 214, p. 2.1-34.)

To offset SOx and PM10 emissions, the Sentinel project will rely on the SCAQMD's internal offset credit account pursuant to AB 1318. It is the application of AB 1318 which is the only matter in dispute in this case (see Joint Opening Brief and Joint Reply Brief of Intervenors, California Communities Against Toxics (CCAT) and Communities for a Better Environment (CBE), (jointly, "Intervenors").

AB 1318, which went into effect on January 1, 2010 and is codified in part as Health & Safety Code Section 40440.14, requires the SCAQMD to transfer SOx and PM10 emission offsets from its internal offset accounts to eligible electric generating facilities after making specific findings of eligibility. The required findings are that the electric generating facility must:

1. "Be subject to the permitting jurisdiction of the State Energy Resources Conservation And Development Commission" [Health & Safety Code Section 40440.14(D)(1)];

2. "Have a purchase agreement, executed on or before December 31, 2008, to provide electricity to a public utility, as defined in section 216 of the Public Utilities Code, subject to regulation by the Public Utilities Commission, for use within the Los Angeles basin local reliability area" [Health & Safety Code Section 40440.14(d)(2)]; and

3. "Be under the jurisdiction of the South Coast District, but not within the South Coast Air Basin" [Health & Safety Code Section 40440.14(d)(3)].

Pursuant to Public Resources Code Section 25500, the Energy Commission has the exclusive authority to certify the construction, modification and operation of thermal electric power plants 50 MW or larger. The Energy Commission's jurisdiction includes the CPV Sentinel project which is nominally an 850 MW electric generating facility. According to the record, the CPV Sentinel project has a signed power purchase agreement with Southern California Edison (SCE) executed February 15, 2007. (Ex. 142, p. 4; Ex. 144, p. 2; Ex. 141, Table 25, p. 32.) Further, the CPV Sentinel project site is located in the Salton Sea air basin rather than the South Coast air basin, but remains within the SCAQMD jurisdiction. (Ex. 141, Table 25, p. 32.) None of the parties challenged the qualification of the CPV Sentinel project as an eligible electric generating facility under AB 1318. Therefore, we find the CPV Sentinel project meets all three of the eligibility requirements of AB 1318 because it falls within Energy Commission jurisdiction, has a power purchase agreement dated prior to December 31, 2008, and is located outside of the South Coast air basin but within SCAQMD's jurisdiction.

Further requirements for the implementation of the emission offset credit transfer from SCAQMD's internal offset credit account and offset tracking system, as specified in AB 1318, are:

- "The executive officer of the south coast district, upon finding that the eligible electrical generating facility proposed for certification by the State Energy Resources Conservation and Development Commission meets the requirements of the applicable new source review rule and all other applicable district regulations that must be met under Section 1744.5 of Title 20 of the California Code of Regulations, shall credit to the south coast district's internal emission credit accounts and transfer from the south coast district's internal emission credit accounts to eligible electrical generating facilities emission credits in the full amounts needed to issue permits for eligible electrical generating facilities to meet requirements for sulfur oxides (SOx) and particulate matter (PM2.5 and PM10) emissions." [Health and Safety Code Section 40440.14(a)];

- In implementing this permitting action, "the south coast district shall rely on the offset tracking system used prior to the adoption of Rule 1315 of the south coast district until a new tracking system is approved by the United States Environmental Protection Agency and is in effect, at which point that new system shall be used by the south coast district." [Health & Safety Code Section 40440.14(b)(1)];

- “In addition to using the prior offset tracking system, the district shall also make use of any emission credits that have resulted from emission reductions and shutdowns from minor sources since 1990. The district shall make any necessary submissions to the United States Environmental Protection Agency with regard to the crediting and use of emission reductions and shutdowns from minor sources.” [Health & Safety Code Section 40440.14(b)(2)]; and

- “Within 60 days of the effective date of this section, for each eligible electrical generating facility, the south coast district shall report to the State Energy Resources Conservation and Development Commission the emission credits to be credited and transferred pursuant to subdivision (a). [Health & Safety Code Section 40440.14(c)].

The record shows that the SCAQMD has made the necessary findings and has identified the emissions credits applicable to the CPV Sentinel project as documented in the Addendum to their Final Determination of Compliance. (Ex. 141, pp. 1-2, 25, Appendix N pp. 6-7.) The record further establishes that the SCAQMD has reported the proposed emission offsets to the Energy Commission. (*Id*.)

The record indicates that for the purposes of the AB 1318 Tracking System, which consists of the U.S. EPA-approved tracking system in place prior to the passage of Rule 1315, the SCAQMD has identified a series of emission offsets for PM10 and SOx (see **AIR QUALITY ATTACHMENTS A** and **B**) which have been created as a result of reductions from permitted equipment that permanently ceased operation in SCAQMD. The record shows that these offsets all meet the integrity criteria for qualifying as offsets, meaning they are all real, permanent, quantifiable, enforceable and surplus, as required by SCAQMD Rule 1309(b)(4) & Rule 1309(b)(5). These offsets result from permitted equipment that permanently ceased operation in the SCAQMD since 1990 and the SCAQMD has not issued any ERCs to the companies who operated the equipment as a result of the reductions. These PM10 and SOx offsets have been removed from the SCAQMD’s internal offset accounts and have not been used by any other source permitted by SCAQMD. (Ex. 141, Appendix N pp. 6-7).

The amounts of emission offsets are based on actual PM10 and SOx emissions reported to the SCAQMD under the SCAQMD’s Annual Emissions Reporting Program. In addition, for each source of credit, the equipment has been shutdown and the permits have been inactivated by the SCAQMD. The emission reductions have occurred during the calendar years 2002 and 2008 for PM10

credits and during calendar years 2002 through 2006 for SOx credits. (Ex. 141, Appendix N pp. 6-7).

Intervenors argue that unless and until the U.S. EPA approves the transfer of SCAQMD's internal offset credits via a revision to the State Implementation Plan (SIP), the Commission may not certify the CPV Sentinel project under AB 1318 because the "credit and transfer by the south coast district does not satisfy *all applicable legal requirements*." (Joint Op. Brief, p. 4). Intervenors rely on the testimony of CCAT's sole witness, a lawyer, who opined that the FDOC and ADOC are invalid based upon the lack of a federally approved SIP to allow the transfer of credits from the SCAQMD's internal offset account to the project. (Ex. 300, pp. 6-10).

Applicant cites the Clean Air Act and the Warren-Alquist Act to support the contrary position that approval of the SIP amendment is not required until commencement of operations. [Applicant's Rebuttal to Declaration of Michael Harris p. 2, citing 42 U.S.C. §§ 7503(a)(1)(A) and 7503(c)(1); Pub. Res. Code § 25523(d)(2).] Applicant points out that CCAT's expert admits that the Clean Air Act requires the offsets to be "in effect and enforceable" by the time that the new source **commences operation** (emphasis added). (Applicant's Rebuttal to Declaration of Michael Harris p. 2, citing Exhibit 300, p.6.)

Staff and SCAQMD agree that if creditable offsets have been identified, adopted as a matter of state law, and submitted to U.S. EPA, but the U.S. EPA administrative process to approve the offsets is not complete by the time the source commences construction, a construction permit may be issued so long as the source does not commence operation until the U.S. EPA approves the SIP amendment. (Staff's Op. Brief, p. 5, citing SCAQMD's Legal Brief in Response to Intervenor's Testimony, pp. 7-8).

The Warren-Alquist Act mandates:

> The commission may not find that the proposed facility conforms with applicable air quality standards pursuant to paragraph (1) unless the applicable air pollution control district or air quality management district certifies, prior to the licensing of the project by the commission, that complete emissions offsets for the proposed facility have been identified and will be obtained by the applicant within the time required by the district's rules or unless the applicable air pollution control district or air quality management district certifies that the applicant requires emissions offsets to be obtained *prior to the commencement* of operation consistent with

> Section 42314.3 of the Health and Safety Code and *prior to commencement of the operation* of the proposed facility. The commission shall require as a condition of certification that the applicant obtain any required emission offsets within the time required by the applicable district rules, consistent with any applicable federal and state laws and regulations, and *prior to the commencement* of the operation of the proposed facility. [Pub. Res. Code Section 25523(d)(2) (Italics added).]

Accordingly, the Energy Commission has always required Applicants seeking to certify power plants to identify the emissions offsets the project will use prior to certification but has consistently conditioned certification upon proof of the acquisition and surrender of offsets to the district prior to commencement of operations. In the instant case, there appears to be no dispute that the CPV Sentinel project is the only eligible electric generating facility qualified to access SOx and PM10 emissions credits from the SCAQMD's internal offset account pursuant to AB 1318 (see Staff's Op. Brief, p, 4). The record clearly identifies the emissions offsets available to the CPV Sentinel project (see **AIR QUALITY ATTACHMENTS A** and **B**) and the evidence convincingly establishes that the pool of identified offsets far exceeds the amount necessary for the CPV Sentinel project to offset its SOx and PM10 emissions. (Ex. 141, Appendix N; 7/19/10 RT 55:2-19; 56:17-20; 64:7-65:5). We will require the project owner to supply proof to the Compliance Project Manager (CPM) that the U.S. EPA has approved the adoption of the provisions of AB 1318 into the SIP prior to commencement of operation of the CPV Sentinel project (see Condition of Certification **AQ-19**). However, the amendment of the SIP is not a prerequisite to site certification and the pending status of the application to amend the SIP does not invalidate the FDOC or the ADOC.

AB 1318 imposes a further duty on the Energy Commission:

> The State Energy Resources Conservation and Development Commission shall determine whether the emission credits to be credited and transferred satisfy all applicable legal requirements. In the exercise of its regulatory responsibilities under its power facility and site certification authority, the State Energy Resources Conservation and Development Commission shall not certify an eligible electrical generation facility if it determines that the credit and transfer by the south coast district do not satisfy all applicable legal requirements." [Health & Safety Code Section 40440.14(c)].

The record indicates that the offsets identified by SCAQMD have been reviewed and determined by Energy Commission staff to satisfy all applicable legal

requirements. (Ex. 214, p. 2.1-36; Ex. 216, p. 2.) These offsets all meet the integrity criteria for qualifying as offsets, meaning they are all Real, Permanent, Quantifiable, Enforceable and Surplus, as required by federal law. (Ex. 214, p. 2.1-35). Further, the CPV Sentinel AFC Committee made a thorough review of the record and concurs with the Staff, Applicant and SCAQMD that the emission credits to be credited and transferred satisfy all applicable legal requirements (see discussion, below, under PM10 and SOx Emissions and Offsets in the "Adequacy of Proposed Mitigation" section of this Decision).

The transfer of offsets to an electrical generating facility is also subject to the following:

> "The executive officer shall not transfer emission reduction credits to an electrical generating facility pursuant to this section until the receipt of payment of the mitigation fees set forth in the south coast district's Rule 1309.1, as adopted on August 3, 2007. The mitigation fees shall only be used for emission reduction purposes. The south coast district shall ensure that at least 30 percent of the fees are used for emission reductions in areas within close proximity to the electrical generating facility and at least 30 percent are used for emission reductions in areas designated as "Environmental Justice Areas" in Rule 1309.1." [Health & Safety Code Section 40440.14(e)]

The evidence indicates that the Applicant will "… pay the required mitigation fees subsequent to the final certification of the project by the CEC as a prerequisite to obtaining a final Permit to Construct from the SCAQMD." (Ex. 144, p.3).

f. Adequacy of Proposed Mitigation

VOC Emissions and Offsets

The CPV Sentinel project will comply with all of the SCAQMD's VOC offset requirements (at a 1.2-to-1.0 offset ratio) by providing VOC ERCs prior to issuance of the Permit to Construct (PTC), as specified in Rule 1303(b)(2). The CPV Sentinel has already purchased adequate amounts of VOC ERCs to offset 412 lbs/day of VOC emissions (certificate numbers AQ007877 and AQ007879) and will provide an additional 44 lbs/day of VOC ERCs prior to issuance of the final Title V permit to cover the maximum offset liability of 456 lbs/day of VOC emissions. We find that these offsets and the limits imposed by Conditions of Certification **AQ-1** and **AQ-2** mitigate impacts due to VOC emissions below significance. (Ex. 214, p. 2.1-40, Ex. 150.)

NOx Emissions and Offsets

The CPV Sentinel project complies with all of the NOx offset requirements (at a 1.0-to-1.0 offset ratio) by holding sufficient NOx RTCs to offset the annual emission increase for the first year of operation prior to commencement of initial operation, as specified in Rule 2005(b)(2). CPV Sentinel shall also, at the commencement of each subsequent compliance year, hold NOx RTCs equal to the amount required by permit conditions, as specified in Rule 2005(f)(1). We find that these offsets and the limits imposed by Conditions of Certification **AQ-2, AQ-3** and **AQ-16** mitigate impacts due to NOx emissions below significance. (Ex. 214, p. 2.1-41).

PM10 and SOx Emissions and Offsets

The SSAB is in attainment with both federal and state SO_2 and Sulfate ambient air quality standards, as applicable. However, SO_2 is also considered a precursor to PM10. Presently the SSAB is still designated as "nonattainment" with both federal and state PM10 ambient air quality standards. (Ex. 214, p. 2.1-41).

As described above, the CPV Sentinel project will obtain offsets for both PM10 and SOx from the SCAQMD's internal emission credit account pursuant to AB 1318. Under federal law, any required PM10 and SOx offsets have to be provided at an offset ratio of 1.0-to-1.0. In addition, California state law, if applicable to any project, requires actual (not maximum potential) emissions to be offset at the same 1.0-to-1.0 offset ratio. Therefore, the maximum amount of offsets that are being provided for the CPV Sentinel project's emissions in the initial commissioning year are 118,120 lbs/year of PM10 and 13,928 lbs/year of SOx, (see **AIR QUALITY Table 8,** *supra*). (Ex. 214, p. 2.1-41).

Intervenor CBE submitted expert testimony which contains a review of the materials supporting the emissions data provided by SCAQMD in Air Quality **Attachments A** and **B**. CBE's expert's goals were to (1) independently verify AQMD's assumptions and calculations, (2) identify obvious data gaps, such as lack of clarity and missing records, (3) identify the emissions factors SCAQMD used in the credits calculations and (4) identify whether the emission levels calculated represented Best Available Control Technology (BACT) by today's standards. (Ex. 401, p. 2.)

SCAQMD clarified that the application of BACT to ERCs as required in District Rules 1309(b)(4)(E) and 1306(c) does not apply to internal offsets. (Ex. 218, pp. 9,15, rebutting Ex. 401, pp. 2, 7, 8, 10, 11, 12 ,15 – 20 and Ex. 403 pp. 6-10; Ex. 7/19/10 RT 42:23-43:9; 54:2-6; 55:20-25; 66:1-14). SCAQMD quoted

Natural Resources Defense Council, et al. v. South Coast Air Quality Management District, et al., (decided January 7, 2010) U.S. Dist. Court Case No. CV-8-05403-GW, pg 13, wherein the court stated, "emission reductions for ERCs are discounted to BACT levels, while emission reductions for internal offsets are not discounted to BACT levels." (Ex. 219, p. 10.) Staff's expert agreed with SCAQMD that BACT discounts do not apply to internal offsets. (7/19/10 RT 73:16-20).

CBE's expert testified that SCAQMD had overestimated the availability of offsets from seven facilities, as well as the fractional amount of PM10 in total particulate matter. (Ex. 401 pp. 6-15; 21). She further testified that SCAQMD used incorrect emission factors for certain facilities whose emissions are included in tables contained in Air Quality **Attachments A** and **B**. (Ex. 403, pp. 2-10).

SCAQMD provided expert testimony identifying a series of verification steps and conservative assumptions it used to create the list of offsets in the AB 1318 Tracking System. (Ex. 218, p. 5-7). These steps include verifying that each offset source had operated under a valid permit, that the source providing the offsets had been shut down and its permit invalidated, that no ERCs have been issued for the emission reductions identified in Air Quality **Attachments A** and **B**, and that the offsets have not been used for permitting of any other source. These conservative assumptions included using the lower of the reported emission factor or the standard emission factor, and using the last two years of operation (when emissions are generally lower). (Ex. 218, p. 5-7).

SCAQMD's expert testified at the evidentiary hearing that CBE's expert misrepresented the source of offsets (7/19/10 RT 44:3-4) and dramatically underestimated emission factors that should have been used. (7/19/10 RT 50:16-24, 53:15-22.) Specifically, for sandblasting operations used as a source of offsets, CBE's expert based her calculations on the emission factor for an enclosed metal sandblasting cabinet (Ex. 403, pp. 2-3) when, in fact, the source of the offset was open abrasive sandblasting, which has a different and higher emission factor. (7/19/10 RT 43:5-16, 44:1-8). SCAQMD's expert also testified that CBE's expert misrepresented emission factors for aggregate, sand, and cement production facilities, and used incorrect assumptions and emission factors to calculate the amount of emissions from these sources. (7/19/10 RT 51:8-20, 52:24-25, 53:1-22).

Finally, SCAQMD's expert rebutted CBE's contention that SCAQMD erred in assuming that ratio of 50 percent of total PM from non-combustion is PM10. He

explained that an evaluation of non-combustion sources in the total inventory demonstrates that the average ratio is in excess of 58%, so that the 50% factor is actually conservative. (Ex. 218, p. 9; 7/19/10 RT 42:23–46:3; 49:13-20). The errors and miscalculations identified by SCAQMD in CBE's testimony skew all of CBE's conclusions about the amount of offsets that are available for the specific sources. On balance, we find that CBE's factual challenges to the amount of offsets available lacked merit.

The record makes clear that there is more than adequate PM10 and SOx offsets available for the CPV Sentinel project. (7/19/10 RT 55:2-19; 56:17-20). We find that these offsets and the limits imposed by Conditions of Certification **AQ-SC8, AQ-1, AQ-5, AQ-7** and **AQ-19** mitigate project impacts due to PM10 and SOx emissions below significance.

The record also shows that the SCAQMD and CARB Governing Boards have approved the SSAB PM10 Redesignation and Maintenance Plan (RMP) for submittal to U.S. EPA for inclusion into the SIP. (Ex. 146). Under federal NSR, offsets are required prior to start of operation (42 U.S.C. § 7503(a)(1)(A)). However, should U.S. EPA approve this RMP and redesignate the SSAB as attainment with federal PM10 NAAQS, the CPV Sentinel project would not be subject to the nonattainment federal NSR requirements and would not be required to provide PM10 or SOx offsets to meet federal requirements. (Ex. 214, p. 2.1-41).

PM2.5 Emissions and Offsets

The evidence shows that the CPV Sentinel project complies with the PM2.5 offset requirements on the basis that the SSAB is not classified as "Nonattainment" for federal and state ambient air quality standards for PM2.5. (SSAB is Unclassified for state and Unclassified/Attainment for federal.) Therefore, offsets are not specifically required for PM2.5 to demonstrate compliance with the Clean Air Act. Also the maximum worst case yearly PM2.5 emissions, even assuming that all (100 percent) of the PM10 emissions are PM2.5, is 59.06 tons/year. CPV Sentinel PM2.5 emissions will be offset through the purchase of PM10 offsets from the SCAQMD internal bank pursuant to AB 1318, since a majority of the offsets would occur from combustion sources where PM10 emissions are generally PM2.5 or smaller. Therefore, all project-related PM2.5 emissions will be offset. (Ex. 214, p. 2.1-42).

Potential Mitigation for CO

The CPV Sentinel project complies with the CO offset requirements on the basis that the SSAB is not classified as "nonattainment" for federal and state ambient air quality standards for CO. (SSAB is classified as Attainment for state and Unclassified/ Attainment for federal.) Therefore, offsets are not required. Also, the maximum worst case yearly CO emission is 188 tons/year, which is below the PSD threshold of 250 tons/year. The record establishes that the project's potential impacts on the CO ambient air quality standards are not significant. (Ex. 214, p. 2.1-42).

5. Cumulative Impacts

"Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts." (CEQA Guidelines, Section 15355.) A cumulative impact consists of an impact that is created as a result of a combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines, Section 15130(a)(1).) 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. (Ex. 214, p. 2.1-43.)

This analysis is primarily concerned with "criteria" air pollutants. Such pollutants have impacts that are usually (though not always) cumulative by nature. Rarely will a project cause a violation of a federal or state criteria pollutant standard. However, a new source of pollution may contribute to violations of criteria pollutant standards because of the existing background sources or foreseeable future projects. Air districts attempt to attain the criteria pollutant standards by adopting attainment plans, which comprise a multi-faceted programmatic approach to such attainment. Depending on the air district, these plans typically include requirements for air "offsets" and the use of "Best Available Control Technology" for new sources of emissions, and restrictions of emissions from existing sources of air pollution. (Ex. 214, pp. 2.1-43 to 2.1-44.)

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 four publicly available documents that the SCAQMD has adopted. These adopted air quality plans are contained in the 2007 Air Quality Management Plan (adopted 6/1/2007), Final 2003 Air Quality Management Plan (adopted 12/10/1999), Final Socioeconomic Report for the Final 2003 AQMP (adopted 8/1/2003), and Final 2003 Coachella Valley PM10 State Implementation Plan (adopted 8/1/2002). These plans are summarized in the Final Staff Assessment (Exhibit 214) at pages 2.1-44 through 2.1-53.

Since the power plant air quality impacts can be reasonably estimated through air dispersion modeling, the project's contributions to localized cumulative impacts can be estimated. To represent past and present projects that contribute to ambient air quality conditions, the parties worked with the District to identify all projects that have submitted, within the last year of monitoring data, new applications for an authority to construct (ATC) or permit to operate (PTO) and applications to modify an existing PTO within six miles of the project site. This effectively identifies all new emissions that emanate from a single point (e.g., a smoke stack), referred to as "point sources." The submittal of an air district application is a reasonable demarcation of what is "reasonably foreseeable." The evidence establishes that there is little or no measurable cumulative overlap between stationary emission sources beyond six miles. (Ex. 214, pp. 2.1-53 to 2.1-54.)

Unlike point sources, area sources include sources like agricultural fields, residential developments or other such sources that do not have a distinct point of emission. New area sources are typically identified through draft or final Environmental Impact Reports (EIR) that are prepared for those sources. The initiation of the EIR process is a reasonable basis on which to determine what is "reasonably foreseeable" for new area sources. (Ex. 214, pp. 2.1-54.)

The data submitted, or generated from the applications with the air district for point sources or initiating the EIR process for area sources provides enough information to include these new emission sources in air dispersion modeling. (Ex. 214, pp. 2.1-54.)

Once the modeling results are produced, they are added to the background ambient air quality monitoring data and thus the modeling portion of the cumulative assessment is complete. Once the cumulative project emission impacts are determined, the necessity to mitigate the project emissions can be evaluated, and the mitigation itself can be proposed by the parties. (Ex. 214, p. 2.1-55.)

SCAQMD identified 106 new potential point sources of which 5 were administrative changes that resulted in no new emissions, 5 were applications on hold or canceled, 61 were farther than 6 miles from the project site, 18 were replacements in kind of existing sources, and 17 were sources that emit VOC only. The undisputed evidence shows that there are no new sources within six miles of the proposed project site that are required to be in the cumulative analysis. Therefore, the modeling results shown in **AIR QUALITY Tables 5, 6** and **7** represent the project cumulative analysis as well as the project direct impacts analysis results. (Ex. 214, p. 2.1-55.)

The record shows that the project's gaseous emissions of NOx, SO_2, VOC and ammonia can contribute to the formation of secondary pollutants: ozone and PM10/PM2.5. There are air dispersion models that can be used to quantify ozone impacts, but they are used for regional planning efforts where hundreds or even thousands of sources are input into the modeling to determine ozone impacts. There are no regulatory agency models approved for assessing single source ozone impacts. However, because of the known relationship of NOx and VOC emissions to ozone formation, the emissions of NOx and VOC from the CPV Sentinel project do have the potential (if left unmitigated) to contribute to higher ozone levels in the region. These impacts could be cumulatively significant because they would contribute to ongoing violations of the state and federal ozone ambient air quality standards. However, emission offsets that would be provided by CPV Sentinel reduce potential impacts to a level that would be less than cumulatively considerable. (Ex. 214, p. 2.1-55.)

The emissions of NOx and SOx from the CPV Sentinel project do have the potential (if left unmitigated) to cumulatively contribute to higher PM2.5 levels in the region. These impacts could be considered significant because they would contribute to ongoing violations of the state and federal PM2.5 ambient air quality standards. However, emission offsets that will be provided by CPV Sentinel reduce potential impacts to a level that would be cumulatively less than significant. (Ex. 214, p. 2.1-56.)

6. Compliance with LORS

FEDERAL

The Prevention of Significant Deterioration (PSD) program requires major sources to obtain permits for emissions of attainment pollutants. A major source for a simple-cycle combustion turbine is defined as one whose emissions of

attainment pollutants exceed 250 tons per year. Since the emissions of attainment pollutants from the CPV Sentinel project are not expected to exceed 250 tons per year, the PSD program does not apply. Thus the SCAQMD did not issue a PSD permit as part of their Final Determination of Compliance (FDOC) for the project. (Ex. 214, p. 2.1-56.)

STATE

The Applicant will demonstrate that the project will comply with Section 41700 of the California State Health and Safety Code, which restricts emissions that would cause nuisance or injury, with the SCAQMD FDOC (issued April 30, 2008; revised February 28, 2010) and the Energy Commission staff's affirmative finding for the project. The project would also comply with Sections 21080, 39619.8, 40440.14 (AB1318) as noted in the SCAQMD Addendum to the FDOC. (Ex. 214, p. 2.1-56.)

LOCAL

Compliance with specific SCAQMD rules and regulations is discussed below via excerpts from the FDOC (Ex. 87) and Addendum to the FDOC (Ex. 141). (Ex. 214, p. 2.1-56.)

SCAQMD Regulation II-Permits

RULE 212-STANDARDS FOR APPROVING PERMITS

Rule 212 requires that a person shall not build, erect, install, alter, or replace any equipment, the use of which may cause the issuance of air contaminants or the use of which may eliminate, reduce, or control the issuance of air contaminants without first obtaining written authorization for such construction from the Executive Officer. A public notice will be issued followed by a 30-day public comment period prior to issuance of a permit. Compliance is expected. (Ex. 214, p. 2.1-54.)

SCAQMD Regulation IV-Prohibitions

RULE 401-VISIBLE EMISSIONS

This rule limits visible emissions to an opacity of less than 20 percent (Ringlemann No.1), as published by the United States Bureau of Mines. It is unlikely, with the use of the SCR /CO catalyst configuration that there will be visible emissions. (Ex. 214, p. 2.1-57.)

RULE 402-NUISANCE

This rule requires that a person not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which cause, or have a natural tendency to cause injury or damage to business or property. (Ex. 214, p. 2.1-57.)

RULE 403-FUGITIVE DUST

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The provisions of this rule apply to any activity or man-made condition capable of generating fugitive dust such as construction activities. This rule prohibits emissions of fugitive dust beyond the property line of the emission source. The Applicant will be taking steps to prevent and/or reduce or mitigate fugitive dust emissions from the project site. Such measures include covering loose material on haul vehicles, watering, and using chemical stabilizers when necessary. The installation and operation of the CTGs is expected to comply with this rule. (Ex. 214, p. 2.1-57.)

RULE 407-LIQUID AND GASEOUS AIR CONTAMINANTS

This rule limits CO emissions to 2,000 ppmvd and SO_2 emissions to 500 ppmvd, averaged over 15 minutes. For CO, the CTGs will meet the BACT limit of 6.0 ppmvd @ 15 percent O_2, 1-hr average, and the turbines will be conditioned as such. For SO_2, equipment which complies with Rule 431.1 is exempt from the SO_2 limit in Rule 407. The Applicant will be required to comply with Rule 431.1 and thus the SO_2 limit in Rule 407 will not apply. (Ex. 214, p. 2.1-57.)

RULE 409-COMBUSTION CONTAMINANTS

This rule restricts the discharge of contaminants from the combustion of fuel to 0.1 grain per cubic foot of gas, calculated to 12 percent CO_2, averaged over 15 minutes. The equipment is expected to meet this limit. (Ex. 214, p. 2.1-57.)

RULE 431.1-SULFUR CONTENT OF GASEOUS FUELS

CPV Sentinel will use pipeline quality natural gas which will comply with the 16 ppmv sulfur limit, calculated as H_2S, specified in this rule. (Ex. 214, p. 2.1-57.)

RULE 475-ELECTRIC POWER GENERATING EQUIPMENT

Requirements of the rule specify that the equipment must comply with a PM10 mass emission limit of 11 lb/hr or a PM10 concentration limit of 0.01 grains/dscf.

The PM10 mass emissions from the CPV Sentinel project turbines are estimated to be 6 lb/hr. (Ex. 214, p. 2.1-58.)

Regulation XIII – New Source Review

RULE 1303(A) AND RULE 2005(B)(1)(A)-BACT – LMS100 CTGS

These rules state that the Executive Officer shall deny the Permit to Construct for any new source which results in an emission increase of any non-attainment air contaminant, any ozone depleting compound, or ammonia unless the applicant can demonstrate that BACT is employed for the new source. The Applicant has provided a performance warranty which accompanied the initial application package which indicates that each LMS100 operating on a simple cycle can comply with, and for NOx, even exceed the BACT requirements. SCAQMD now considers the more restrictive 1-hour averaging times to be achieved in practice and CPV Sentinel will therefore be required to comply with the 1-hour averages for NOx, CO, and VOC as opposed to the three hour as was proposed. The proposed project emission characteristics are lower than that required by BACT for the combustion turbines. (Ex. 214, p. 2.1-58.)

RULE 1303(A) AND RULE 2005(B)(1)(A)-BACT – EMERGENCY FIRE PUMP

The emergency fire pump is required to employ BACT because the maximum daily emissions from this source are expected to exceed 1 lb/day. CPV Sentinel will be required to evaluate the technological feasibility of using a particulate trap on the emergency fire pump. In the event that it is not technologically feasible to install a particulate trap to control PM10 emissions, the Tier III BACT levels will apply to the emergency fire pump. BACT for SOx emissions for compression ignition emergency fire pumps is diesel fuel with sulfur content no greater than 0.0015 percent by weight. The manufacturer has indicated that this engine can comply with the Tier III emission levels and the user will only purchase diesel fuel with a sulfur content of no greater than 0.0015 percent by weight. The emergency fire pump is expected to comply with BACT. (Ex. 214, p. 2.1-58.)

RULE 1303(A)-BACT – COOLING TOWER

Rule 219(e)(3) provides an exemption for water cooling towers and water cooling ponds not used for evaporative cooling of process water or not used for evaporative cooling of water from barometric jets or from barometric condensers and in which no chromium compounds are contained. The eight cooling towers being proposed at CPV Sentinel will meet the requirements of Rule 219(e)(3) and is therefore exempt from NSR. BACT therefore does not apply. (Ex. 214, p. 2.1-58.)

RULE 1303(A)-BACT – AMMONIA STORAGE TANK

A pressure relief valve that will be set at no less than 25 psig will control ammonia emissions from the storage tank. In addition, a vapor return line will be used to control ammonia emissions during storage tank filling operations. Based on the above, compliance with BACT requirements is expected. (Ex. 214, p. 2.1-58.)

RULE 1303(B)(1) AND RULE 2005(B)(1)(B) - MODELING

The Applicant has conducted air dispersion modeling using the U.S. EPA AERMOD air dispersion model. The Tier 4 Health Risk Assessment was conducted in accordance with guidelines set forth by the California Office of Environmental Health Hazard Assessment (OEHHA) and the CARB. The OEHHA/CARB computer program (HARP) was used to determine the health risk assessment. SCAQMD staff's review of the modeling and HRA analyses concluded that the applicant used U.S. EPA AERMOD along with the appropriate model options in the analysis for NO_2, CO, PM10, and SO_2. The Applicant modeled both the cumulative and individual permit unit impacts for the project. No significant deficiencies in methodology were noted. Therefore, the Applicant is expected to comply with BACT for the ammonia storage tank. (Ex. 214, pp. 2.1-56 to 2.1-59.)

RULE 1303(B)(2) AND RULE 2005(B)(2)-OFFSETS – LMS100 PA CTGS

Since CPV Sentinel is a new facility with an emissions increase, offsets will be required for all criteria pollutants. CPV Sentinel will be included in NOx RECLAIM and as such, NOx increases will be offset with RTCs at a 1.0 to1 ratio. Non-RECLAIM criteria pollutants (CO, VOC, SOx, and PM10) will be offset by either the purchase of Emission Reduction Credits (ERCs) and/or other means, as allowed under District Rules and Regulations at a 1.2 to 1 ratio. CPV Sentinel has indicated that the required amounts of offsets will be provided prior to issuance of the Facility Permit. Compliance with offset requirements of Rules 1303(b)(2) and 2005(b)(2) is expected. (Ex. 214, p. 2.1-59.)

RULES 1303(B)(3)-SENSITIVE ZONE REQUIREMENTS AND 2005(E)-TRADING ZONE RESTRICTIONS

Both rules state that ERCs must be obtained from the appropriate trading zone. In the case of Rule 1303(b)(3), unless credits are obtained from the Priority Reserve, facilities located in the South Coast Air Basin are subject to the Sensitive Zone requirements specified in Health & Safety Code Section 40410.5. CPV Sentinel is located in Zone 2a and is therefore eligible to obtain its ERCs from either Zone 1 or Zone 2a. Similarly in the case of Rule 2005(e), CPV

Sentinel, because of its location may obtain RECLAIM Trading Credits (RTCs) from either Zone 1 or Zone 2, at its choosing. Compliance is expected with both rules. (Ex. 214, p. 2.1-59.)

RULE 1303(B)(4)-FACILITY COMPLIANCE

The new facility will comply with all applicable Rules and Regulations of the SCAQMD.

RULE 1303(B)(5)-MAJOR POLLUTING FACILITIES

Rule 1303(b)(5)(A) – Alternative Analysis

The Applicant is required to conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for the CPV Sentinel project and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. The Applicant has performed a comparative evaluation of alternative sites as part of the AFC process and has concluded that the benefits of providing additional electricity and increased employment in the surrounding area will outweigh the environmental and social costs incurred in the construction and operation of the proposed facility. (Ex. 214, p. 2.1-57.)

Rule 1303(b)(5)(B) – Statewide Compliance

The Applicant has certified in the 400-A form that all major sources under its ownership or control in the State of California are in compliance with all federal, state, and local air quality rules and regulations. In addition, the Applicant has submitted an email to the SCAQMD dated October 19, 2006 stating that “any and all facilities that the applicant owns or operates in the State of California (including the proposed CPV Sentinel project) are in compliance or are on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act.” (Ex. 214, p. 2.1-60.)

Rule 1303(b)(5)(C) – Protection of Visibility

Modeling is required if the source is within a Class I area and the NOx and PM10 emissions exceed 40 TPY and 15 TPY respectively. Since the nearest Class I area is located over 28 miles from the proposed CPV Sentinel project site, modeling for plume visibility is not required, however, the Applicant has provided modeling impact data for the Class I areas as part of the AFC process. (Ex. 214, p. 2.1-60.)

Rule 1303(b)(5)(D) – Compliance through CEQA

The Energy Commission is the Lead Agency under CEQA. Since the Applicant is required to receive a certification from the Energy Commission, the applicable CEQA requirements and deficiencies will be addressed. (Ex. 214, p. 2.1-60.)

REGULATION XVII-PREVENTION OF SIGNIFICANT DETERIORATION

The SCAQMD Governing Board, in its action on February 7, 2003, authorized the Executive Officer, upon withdrawal of the U.S. EPA Prevention of Significant Deterioration (PSD) delegation, not to request any further delegation and to allow the U.S. EPA to terminate the SCAQMD's PSD delegation agreement and for U.S. EPA to become the permitting agency for PSD sources in the SCAQMD.

The Board determined that Regulation XVII is inactive upon U.S. EPA's withdrawal of delegation and shall remain inactive unless and until the U.S. EPA provides the SCAQMD with new delegation of authority to act either in full or on a Facility/Permit-Specific basis. The delegation was rescinded on March 3, 2003, by U.S. EPA. (Ex. 214, p. 2.1-60.)

The SCAQMD Governing Board in its April 1, 2005, meeting reaffirmed its previous action on February 7, 2003, to relinquish PSD analysis back to federal government and render Regulation XVII inactive unless the SCAQMD receives new delegation in part or in full from the U.S. EPA. (Ex. 214, p. 2.1-60.)

Based on the Governing Board's actions, this rule is ineffective and no analysis is required for any pollutant subject to federal PSD requirement. The SCAQMD has sent the Applicant a notification to contact the U.S. EPA directly for applicability of PSD to the proposed project. SCAQMD sent a letter to the Applicant on December 8, 2005, and instructed the Applicant to contact U.S. EPA directly regarding implementation of PSD. PSD requires major sources to obtain permits for attainment pollutants. A major source for a simple-cycle combustion turbine is defined as any one pollutant exceeding 250 tons per year. Since the emissions from the CPV Sentinel project are not expected to exceed 250 tons per year, PSD does not apply. (Ex. 214, pp. 2.1-60 to 2.1-61)

REGULATION XX-RECLAIM

RULE 2005(G) – ADDITIONAL REQUIREMENTS

As with Rule 1303(b)(5) for the Non-RECLAIM pollutants, CPV Sentinel has addressed the alternative analysis, statewide compliance, protection of visibility, and CEQA compliance requirements of this rule for NOx. These requirements

are essentially the same as those found in Rule 1303(b)(5), subparts A through D for non-RECLAIM pollutants, and are summarized below. (Ex. 214, p. 2.1-61.)

Rule 2005(g)(1) – Statewide Compliance

The Applicant has certified in the 400-A form that all major sources under its ownership or control in the State of California are in compliance with all federal, state, and local air quality rules and regulations. In addition, the Applicant has submitted an email to the SCAQMD dated October 19, 2006 stating that "any and all facilities that the applicant owns or operates in the State of California (including the proposed CPV Sentinel project) are in compliance or are on a schedule for compliance with all applicable emission limitations and standards under the Clean Air Act. (Ex. 214, p. 2.1-61.)

Rule 2005(g)(2) – Alternative Analysis

The Applicant is required to conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques for the CPV Sentinel project and to demonstrate that the benefits of the proposed project outweigh the environmental and social costs associated with this project. The Applicant has performed a comparative evaluation of alternative sites as part of the AFC process and has concluded that the benefits of providing additional electricity and increased employment in the surrounding area will outweigh the environmental and social costs incurred in the construction and operation of the proposed facility. (Ex. 214, p. 2.1-61)

Rule 2005(g)(3) – Compliance through CEQA

The Energy Commission is the Lead Agency under CEQA. Since the Applicant is required to receive certification from the Energy Commission, the applicable CEQA requirements and deficiencies will be addressed. (Ex. 214, p. 2.1-61.)

Rule 2005(g)(4) – Protection of Visibility

Modeling is required if the source is within a Class I area and the NOx emissions exceed 40 TPY. Since the nearest Class I area is located over 28 miles from the proposed CPV Sentinel project site, modeling from plume visibility is not required, however, the Applicant has provided modeling impact data for the Class I areas as part of the AFC process. (Ex. 214, p. 2.1-61.)

RULE 2005(H) – PUBLIC NOTICE

CPV Sentinel will comply with the requirements for Public Notice found in Rule 212. Therefore compliance with Rule 2005(h) is demonstrated. (Ex. 214, p. 2.1-62.)

RULE 2005(I) – RULE 1401 COMPLIANCE.

CPV Sentinel will comply with Rule 1401 as demonstrated in the Tier 4 analysis and subsequently reviewed and found to be satisfactory by SCAQMD modeling staff. (Ex. 214, p. 2.1-62.)

RULE 2005(J) – COMPLIANCE WITH STATE AND FEDERAL NSR.

CPV Sentinel will comply with the provisions of this rule by having demonstrated compliance with SCAQMD NSR Regulations XIII and Rule 2005-NSR for RECLAIM. (Ex. 214, p. 2.1-62.)

REGULATION XXX – TITLE V

CPV Sentinel is a Title V facility because the cumulative emissions will exceed the Title V major source thresholds and because it is also subject to the federal acid rain provisions. The initial Title V permit will be processed and the required public notice will be sent along with the Rule 212(g) Public Notice, which is also required for this project. U.S. EPA is afforded the opportunity to review and comment on the project within a 45-day review period. (Ex. 214, p. 2.1-62.)

9. Public Comment

No members of the public provided comment regarding Air Quality at the evidentiary hearings or in subsequent correspondence.

FINDINGS OF FACT

Based on the evidence, we find as follows:

1. The CPV Sentinel project site is under the jurisdiction of the South Coast Air Quality Management District ("SCAQMD").

2. The project site is located in the Salton Sea Air Basin.

3. The SCAQMD is classified as being in "attainment" of both federal and state ambient air quality standards for CO, SO_2 and NO_2.

4. The SCAQMD is classified as being in "non-attainment" of both federal and state ambient air quality standards for Ozone and PM10.

5. The predicted visual contrast values for the three nearest Class 1 areas (San Jacinto Wilderness Area, Joshua Tree National Park and San Gorgonio Wilderness Area) are below the significance criterion for actual plume

backgrounds and the project will have no significant impact on visibility for these areas.

6. The CPV Sentinel project will be a nominally rated 850 megawatt (MW) electrical generating facility encompassing 37 acres of land within unincorporated Riverside County, California adjacent to the Palm Springs northern city limits.

7. Facility construction will take approximately 18 months.

8. The project's construction emissions will not cause a new violation of the NO_2, CO and SO_2 ambient air quality standards, and thus the evidence does not prove these impacts to be significant.

9. The construction mitigation measures set forth in Conditions of Certification **AQ-SC1** through **AQ-SC5** assure maximum feasible fugitive dust control performance, vehicle exhaust emission mitigation, construction equipment exhaust emissions control, and compliance enforcement mechanisms

10. Given the temporary nature of the worst-case construction impacts reflected in the record, implementation of the mitigation measures contained in Conditions of Certification **AQ-SC1** through **AQ-SC5**, project construction air quality impacts will be less than significant.

11. The evidence shows that no significant impacts will occur during initial commissioning.

12. The record indicates that the project's PM10/PM2.5 emission impacts during operations could be significant if left unmitigated.

13. The results of the modeling analysis show that fumigation impacts will not violate any of the one-hour standards.

14. CPV Sentinel's gaseous emissions of NOx, SO_2, VOC and ammonia can contribute to the formation of secondary pollutants: ozone and PM10/PM2.5 which (if left unmitigated) would significantly contribute to ongoing violations of the state and federal ozone ambient air quality standards.

15. The project will utilize water injection for the combustors in the GE LMS100 turbines and an SCR system with an ammonia injection grid to reduce NOx emissions.

16. The cooling tower compliance will be monitored through Conditions of Certification **AQ-SC10** and **AQ-SC11** which contain mitigation measures to avoid chronic exceedances.

17. Conditions of Certification **AQ-6** and **AQ-10** ensure that the use of a clean-burning fuel (natural gas) and the efficient combustion process of the CTGs will limit VOC and PM10 emissions.

18. Conditions of Certification **AQ-9**, **-13** and **-14** require the project to utilize two catalyst systems: an SCR system to reduce NOx, and an oxidizing system to reduce CO and VOC.

19. To offset SOx and PM10 emissions, the Sentinel project will rely on the SCAQMD's internal offset credit account pursuant to AB 1318.

20. The CPV Sentinel project meets all three of the eligibility requirements of AB 1318 because it falls within Energy Commission jurisdiction, has a power purchase agreement dated prior to December 31, 2008 and is located outside of the South Coast air basin but within SCAQMD's jurisdiction.

21. The CPV Sentinel project is the only eligible electric generating facility qualified to access SOx and PM10 emissions credits from the SCAQMD's internal offset account pursuant to AB 1318.

22. The record clearly identifies the emissions offsets available to the CPV Sentinel project.

23. The evidence establishes that the pool of identified offsets exceeds the amount necessary for the CPV Sentinel project to offset its SOx and PM10 emissions.

24. Condition of Certification **AQ-19** requires the project owner to supply proof that the EPA has approved the adoption of the provisions of AB 1318 into the SIP prior to commencement of operation of the CPV Sentinel project.

25. SCAQMD's internal offset credits to be transferred to the CPV Sentinel project to offset its SOx and PM10 emissions satisfy all applicable legal requirements.

26. There is more than adequate PM10 and SOx offsets available for the CPV Sentinel project.

27. The offsets and the limits imposed by Conditions of Certification **AQ-1** and **AQ-2** mitigate impacts due to VOC emissions below significance.

28. The offsets and the limits imposed by Conditions of Certification **AQ-2, AQ-3** and **AQ-16** mitigate impacts due to NOx emissions below significance.

29. The offsets and the limits imposed by Conditions of Certification **AQ-SC8, AQ-1, AQ-5, AQ-7** and **AQ-19** mitigate project impacts due to PM10 and SOx emissions below significance.

30. All project-related PM2.5 emissions will be offset.

31. The project's potential impacts on the CO ambient air quality standards are not significant.

32. Emission offsets that would be provided by CPV Sentinel reduce potential impacts to a level that would be less than cumulatively considerable.

CONCLUSIONS OF LAW

1. The mitigation measures imposed are sufficient to ensure that the CPV Sentinel Project will conform with all applicable laws, ordinances, regulations, and standards relating to air quality.

2. Implementation of the Conditions of Certification listed below ensures that the CPV Sentinel Project will not result in any significant direct, indirect, or cumulative impacts to air quality.

CONDITIONS OF CERTIFICATION

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM Delegates. The AQCMM and AQCMM Delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation conditions. The AQCMM and AQCMM Delegates may have other responsibilities in addition to those described in this condition. The AQCMM shall not be terminated without written consent of the Compliance Project Manager (CPM).

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the Energy Commission's CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3**, **AQ-SC4,** 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 for approval. The AQCMP shall include effectiveness and environmental data for the proposed soil stabilizer. 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 that demonstrates compliance with the Air Quality Construction Mitigation Plan (AQCMP) mitigation measures for the purposes of minimizing fugitive dust emission creation from construction activities and preventing all fugitive dust plumes from leaving the project. Any deviation from the AQCMP mitigation measures shall require prior CPM notification and approval.

The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include the following to demonstrate control of fugitive dust emissions:

A. A summary of all actions taken to maintain compliance with this condition;

B. Copies of any complaints filed with the District in relation to project construction; and

C. Any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

The following fugitive dust mitigation measures shall be included in the Air Quality Construction Mitigation Plan (AQCMP) required by **AQ-SC2**.

A. The main access roads through the facility to the power block areas will be either paved or stabilized using soil binders, or equivalent methods, to provide a stabilized surface that is similar for the purposes of dust control to paving, that may or may not include a crushed rock (gravel or similar material with fines removed) top layer, prior to initiating construction in the main power block area, and delivery areas for operations materials (chemicals,

replacement parts, etc.) will be paved prior to taking initial deliveries.

B. All unpaved construction roads and unpaved operation site roads, as they are being constructed, shall be stabilized with a non-toxic soil stabilizer or soil weighting agent that can be determined to be both as efficient or more efficient for fugitive dust control as ARB approved soil stabilizers, and shall not increase any other environmental impacts including loss of vegetation. All other disturbed areas in the project and linear construction sites shall be watered as frequently as necessary during grading; and after active construction activities shall be stabilized with a non-toxic soil stabilizer or soil weighting agent, or alternative approved soil stabilizing methods, in order to comply with the dust mitigation objectives of Condition of Certification **AQ-SC4**. The frequency of watering can be reduced or eliminated during periods of precipitation.

C. No vehicle shall exceed 10 miles per hour on unpaved areas within the construction site, with the exception that vehicles may travel up to 25 miles per hour on stabilized unpaved roads as long as such speeds do not create visible dust emissions.

D. The Visible speed limit signs shall be posted at the construction site entrances.

E. All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

F. Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

G. All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

H. All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

I. Construction areas adjacent to any paved roadway below the grade of the surrounding construction area or otherwise directly impacted by sediment from site drainage shall be provided with sandbags or other equivalently effective measures to prevent run-off to roadways, or other similar run-off control measures as specified in the Storm Water Pollution Prevention Plan (SWPPP), only when such SWPPP measures are necessary so that this condition does not conflict with the requirements of the SWPPP.

J. All paved roads within the construction site shall be swept daily or as needed (less during periods of precipitation) on days when

construction activity occurs to prevent the accumulation of dirt and debris.

K. At least the first 500 feet of any paved public roadway exiting the construction site or exiting other unpaved roads en route from the construction site or construction staging areas shall be swept as needed (less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff resulting from the construction site activities is visible on the public paved roadways.

L. All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or shall be treated with appropriate dust suppressant compounds.

M. All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least two feet of freeboard.

N. Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM Delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes that have the potential to be transported (A) off the project site and within 400 feet upwind of any regularly occupied structures not owned by the project owner or (B) 200 feet beyond the centerline of the construction of linear facilities indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1, specified above, fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2, specified above, fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, if the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMM shall provide the CPM a Monthly Compliance Report (**COMPLIANCE-6**) to include:

A. a summary of all actions taken to maintain compliance with this condition;

B. copies of any complaints filed with the District in relation to project construction; and

C. any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC5 Diesel-Fueled Engine Control: The AQCMM shall submit to the CPM, in the Monthly Compliance Report, a construction mitigation report that demonstrates compliance with the AQCMP mitigation measures for purposes of controlling diesel construction-related emissions. Any deviation from the AQCMP mitigation measures shall require prior and CPM notification and approval.

The use of a soot filter may be terminated immediately if one of AQCMM shall include in the Monthly Compliance Report (**COMPLIANCE-6**) the following to demonstrate control of diesel construction. All heavy earthmoving equipment and heavy duty construction -related emissions:

Verification: A summary of all actions taken to control diesel construction related emissions;

A. 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

B. Any other documentation deemed necessary by the CPM, and the 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 following off-road diesel construction equipment mitigation measures shall be included in the AQCMP required by **AQ-SC2**.

a. All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

b. 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.

c. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 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. In the event that a Tier 3 engine is not available for any off-road equipment larger than 100 hp, that equipment shall be equipped with a Tier 2 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 2 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 CARB or U.S. EPA to control the engine in question to Tier 2 equivalent emission levels and the highest level of available control using retrofit or Tier 1 engines is being used for the engine in question; or

    2. The construction equipment is intended to be on site for 5 days or less.

    3. 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.

d. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and that a replacement for the equipment item in question meeting the controls required in item “b” occurs within 10 days of termination of the use, if the equipment would be needed to continue working at this site for more than 15 days after the use of the retrofit control device is terminated, if one of the following conditions exists :

1. The use of the retrofit control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The retrofit control device is causing or is reasonably expected to cause engine damage.
3. The retrofit control device is causing or is reasonably expected to cause a substantial risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

e. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

f. 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.

g. Construction equipment will employ electric motors when feasible.

The project owner, when obtaining dedicated on-road or off-road vehicles for facility maintenance activities, shall only obtain new model year vehicles that meet California on-road vehicle emission standards or appropriate U.S. EPA/California off-road engine emission standards for the model year when obtained.

Verification: At least 60 days prior to the start commercial operation, the project owner shall submit to the CPM a copy of the plan that identifies the size and type of the on-site vehicle and equipment fleet and the vehicle and equipment purchase orders and contracts and/or purchase schedule. The plan shall be updated every other year and submitted in the Annual Compliance Report (**COMPLIANCE-7**).

AQ-SC7 The project owner shall provide the CPM copies of all District issued Authority-to-Construct (ATC) and Permit-to-Operate (PTO) documents for the facility.

The project owner shall submit to the CPM for review and approval any modification proposed by the project owner to any project air permit. The project owner shall submit to the CPM any modification to any permit proposed by the District or U.S. EPA, and any revised permit issued by the District or U.S. EPA, for the project.

Verification: The project owner shall submit any ATC, PTO, and proposed air permit modifications to the CPM within 5 working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-SC8 The project owner shall provide emission reduction credits to offset turbine exhaust and emergency equipment NOx, VOC, SOx, PM10 and PM2.5 emissions in the form and amount required by the District. RECLAIM Trading Credits (RTCs) shall be provided for NOx as is necessary to demonstrate compliance with Condition of Certification **AQ-16**.

Emission reduction credits (ERCs) shall be provided for SOx (,13,928 lb/year includes offset ratio of 1.0), PM10 (118,120 lb/year, includes offset ratio of 1.0) and VOC (441 lb/day, includes offset ratio of 1.2).

The project owner shall surrender the ERCs for SOx, VOC and PM10 from among those that are listed in the table below or a modified list, as allowed by this condition. If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions of credits listed.

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) will not cause the project to result in a significant environmental impact, and the SCAQMD confirms that each requested change is consistent with applicable federal and state laws and regulations.

The project owner shall request from the SCAQMD a report of the NSR Ledger Account for the project after the SCAQMD has issued the Permit to Construct. This report is to specifically identify the ERCs used to offset the project emissions.

Certificate Number	Amount (lbs/day)	Pollutant
AQ007877	348	VOC
AQ007879	64	VOC
To be determined (TBD)	TBD	TBD

Verification: The project owner shall submit to the CPM the NSR Ledger Account, showing that the project's offset requirements have been met, 15 days prior to initiating construction for Priority Reserve credits, and 30 days prior to turbine first fire for traditional ERCs. Prior to commencement of construction, the project owner shall obtain sufficient RTCs to satisfy the District's requirements for the first year of operation as prescribed in Condition of Certification **AQ-16**. If the

CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC9 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 will specifically note or highlight incidences of noncompliance.

Verification: The project owner shall submit the Quarterly Operation Reports to the CPM and APCO no later than 30 days following the end of each calendar quarter.

AQ-SC10 The project owner shall perform quarterly cooling tower recirculating water quality testing, or shall provide for continuous monitoring of conductivity as an indicator, for total dissolved solids content.

Verification: The project owner shall submit to the CPM cooling tower recirculating water quality tests or a summary of continuous monitoring results and daily recirculating water flow in the Quarterly Operation Report (**AQ-SC9**). If the project owner uses continuous monitoring of conductivity as an indicator for total dissolved solids content, the project owner shall submit data supporting the calibration of the conductivity meter and the correlation with total dissolved solids content at least once each year in a Quarterly Operation Report (**AQ-SC9**).

AQ-SC11 The cooling towers daily PM10 emissions shall be limited to 18.82 lb/day in total for all eight cooling tower cells. The cooling towers shall be equipped with a drift eliminator to control the drift fraction to 0.0005 percent of the circulating water flow. The project owner shall estimate daily PM10 emissions from the cooling towers using the water quality testing data or continuous monitoring data and daily circulating water flow data collected on a quarterly basis. Compliance with the cooling tower PM10 emission limit shall be demonstrated as follows:

PM10 = cooling water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate.

Verification: The project owner shall submit to the CPM daily cooling tower PM10 emission estimates in the Quarterly Operation Report (**AQ-SC9**).

DISTRICT CONDITIONS

AQ-1 The project owner shall limit the emissions from each gas fired combustion turbine train exhaust stack as follows:

Units 1 through 8

Contaminant	Emissions Limit
PM10	2,428 lbs in any one month
CO	8,2016,477 lbs in any one month
SOx	288293 lbs in any one month
VOC	1,425 lbs in any one month

For the purpose of this condition, the limit(s) shall be based on the emissions from a single exhaust stack.

The project owner shall calculate the emission limit(s) by using the monthly fuel use data and the following emission factors: PM10: 5.0 lb/hr, VOC: 2.189 lb/mmscf & SOx: 0.69 lb/mmscf.

Compliance with the CO emission limit shall be verified through valid CEMS data.

The project owner shall calculate the emission limit(s) for CO for the purpose of determining compliance with the monthly emission limit in the absence of valid CEMS data by using the following emission factor(s):

A. During the commissioning period and prior to CO catalyst installation: 38.48 lb/mmscf.

B. After installation of the CO catalysis but prior to CO CEMS certification testing: 14.38 lb/mmscf the emission rate shall be recalculated in accordance with Condition AQ-10 if the approved CEMS certification test resulted in emission concentration higher than 4 ppmv.

C. After CO CEMS certification testing: 14.38 lb/mmscf After CO CEMS certification test is approved by the AQMD, the emissions monitored by the CEMS and calculated in accordance with Condition AQ-10 shall be used to calculated emissions.

For the purpose of this condition, the limit(s) shall be based on the emissions from a single turbine. During Commissioning, the CO emissions shall not exceed 11,602 lbs/month and the VOC emissions shall not exceed 620 lbs/month.

The project owner shall provide the AQMD with written notification of the date of initial CO catalyst use within (7) days of this event.

For the purpose of this condition the turbine shall not commence with normal operation until the commissioning process has been completed. Normal operations may proceed in the same commissioning month provided the project owner follows the requirements listed below.

The project owner shall calculate the commissioning emissions for VOC, SOx and PM10) for the commissioning month (beginning of the month to the last day of commissioning) using the equation below and the following emission factors: VOC: 2.06 lb/mmcf; PM10: 2.99 lb/mmcf; and SOx: 0.12 lb/mmcf.

The commissioning emissions for VOC, SOx, and PM10 shall be subtracted from the monthly emissions limits (listed in the table at the top of this condition) and the revised monthly emission limits will be the maximum emissions allowed for the remaining of the month.

For the purpose of this condition, the term “normal operations” is defined as the turbine is able to supply electrical energy to the power grid.

Verification: The project owner shall submit all emission calculations, fuel use, CEM records and a summary demonstrating compliance of all emission limits stated in this Condition for approval to the CPM on a quarterly basis in the quarterly emissions report (**AQ-SC9**).

AQ-2 The project owner/operator shall not produce emissions of oxides of nitrogen from the facility, including the firewater pump and all eight gas turbines combined, that exceed the RECLAIM Trading Credits holdings required in Condition of Certification **AQ-16** within a calendar year.

Verification: The project owner/operator shall submit to the CPM no later than 60 days following the end of each calendar year, the SCAQMD required (via Rule 2004) Quarterly Certification of Emissions (or equivalent) for each quarter and the Annual Permit Emissions Program report (or equivalent) as prescribed by the SCAQMD Executive Officer.

AQ-3 The 2.5 ppm NOx emission limit, the 2.0- ppm VOC limit and the 4.0 ppm CO emission limit shall not apply during turbine commissioning, start-up and shutdown. The commissioning period shall not exceed 150 operating hours per turbine from the initial start-up. Following commissioning, start-ups shall not exceed 25 minutes and shutdowns shall not exceed 10 minutes. Written records of commissioning, start-ups and shutdowns shall be kept and made available to SCAQMD and

submitted to the CPM for approval. Emissions of NOx shall not exceed 29.54 lbs/hr for any hour in which a startup occurs. Units 1 through 8 shall be limited to a maximum of 300 startups per year;

The 19 lb/mmscf NOx emission limit(s) shall only apply during interim reporting period during initial turbine commissioning and the 12.26 lbs/mmscf shall apply only during the interim reporting period after the initial turbine commissioning period, to report RECLAIM emissions. The interim period shall not exceed 12 months from the initial start-up date.

For this condition startup shall be defined as the start up process to bring the turbine in full successful operations. If during startup the process is aborted and the startup is restarted, then the startup and restart is defined as one startup. In this case the startup time shall not exceed 1 hour.

The project owner/operator shall complete construction and the project shall be fully operational within three years of the issuance of the permit to construction from the District.

Verification: The project owner shall provide the SCAQMD and the CPM with the written notification of the initial start-up date no later than 60 days prior to the startup date. The project owner shall submit, commencing one month from the time of gas turbine first fire, a monthly commissioning status report throughout the duration of the commissioning phase that demonstrates compliance with this condition and the emission limits of Condition **AQ-13**. The monthly commissioning status report shall include criteria pollutant emission estimates for each commissioning activity and total commissioning emission estimates. The monthly commissioning status report shall be submitted to the CPM until the report includes the completion of the initial commissioning activities. The project owner shall provide start-up and shutdown occurrence and duration data as part as part of the Quarterly Operation Report (**AQ-SC9**) including records of all aborted turbine startups. The project owner shall make the site available for inspection of the commissioning and startup/shutdown records by representatives of the District, CARB and the Commission.

AQ-4 Each combustion turbine stack shall have the following emission limitations.

- 2.5 PPM NOx emission averaged over 60 minutes at 15 percent oxygen, dry basis.
- 4.0 ppm CO emission averaged over 60 minutes at 15 percent oxygen, dry basis.
- 2.0 ppm VOC emission averaged over 60 minutes at 15 percent oxygen, dry basis.

- 5.0 ppm NH_3 emission averaged over 60 minutes at 15 percent oxygen, dry basis.

Verification: The project owner shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC9**.

AQ-5 The project owner may at no time purposefully exceed either the mass or concentration emission limits set forth in Conditions of Certification **AQ-1, -2, -3** or **-4**.

Verification: The project owner shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC9**.

AQ-6 The project owner shall limit the fuel usage during a commissioning period from each turbine to no more than 301 mmscf of pipeline quality natural gas per month. After the completion of commissioning, units 1 through 8 shall limit the fuel usage from each turbine to no more than 425 mmcf in any one non-commissioning calendar month and 2,455 mmcf in any one non-commissioning year.

The operator shall maintain records in a manner approved by the District to demonstrate compliance with this condition. The operator shall install and maintain a fuel flow meter and recorder to accurately indicate and record the fuel usage being supplied to each turbine. The natural gas shall not exceed H_2S concentrations of more than 0.25 gr/100scf on an annual average of the monthly samples of gas composition or gas supplier documentation. The natural gas fuel sample shall be tested using District Method 307-91 for total sulfur calculated as H_2S.

Verification: The project owner shall submit to the CPM for approval all fuel usage records on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC9**.

AQ-7 The project owner shall conduct an initial source test for NOx, CO, SOx, VOC, NH_3 and PM10 and periodic source test every three years thereafter for NOx, CO, SOx, VOC and PM10 of each gas turbine exhaust stack in accordance with the following requirements:

- The project owner shall submit a source test protocol to the SCAQMD and the CPM 45 days prior to the proposed source test date for approval. The protocol shall include the proposed operating conditions of the gas turbine, the identity of the testing lab, a statement from the lab certifying that it meets the criteria of

SCAQMD Rule 304, and a description of all sampling and analytical procedures.

- The initial source test shall be conducted no later than 180 days following the date of first fire.
- The SCAQMD and CPM shall be notified at least 10 days prior to the date and time of the source test.
- The source test shall be conducted with the gas turbine operating under maximum, average and minimum loads.
- The source test shall be conducted to determine the oxygen levels in the exhaust.
- The source test shall measure the fuel flow rate, the flue gas flow rate and the turbine generating output in MW.
- The source test shall be conducted for the pollutants listed using the methods, averaging times, and test locations indicated and as approved by the CPM as follows:

Source Test Requirements

Pollutant	Method	Averaging Time	Test Location
NOx	SCAQMD Method 100.1	1 hour	Outlet of SCR
CO	SCAQMD Method 100.1	1 hour	Outlet of SCR
SOx	District Method 307.91	N/A	Fuel Sample
VOC	District Method 25.3	1 hour	Outlet of SCR
PM10	District Method 5	4 hours	Outlet of SCR
Ammonia	SCAQMD Methods 5.3 and 207.1 or U.S. EPA Method 17.	1 hour	Outlet of SCR

The source test results shall be submitted to the SCAQMD and the CPM no later than 60 days after the source test was conducted.

- All emission data is to be expressed in the following units:
  1. ppmv corrected to 15 percent oxygen dry basis,
  2. pounds per hour,
  3. pounds per million cubic feet of fuel burned and
  4. additionally, for PM10 only, grains per dry standard cubic feet of exhaust flow.
- Exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute and dry actual cubic feet per minute.

- All moisture concentrations shall be expressed in terms of percent corrected to 15 percent oxygen.
- For the purpose of this condition, alternative test methods may be allowed for each of the above pollutants upon concurrence of the AQMD, CARB, EPA and the CEC.

Verification: The project owner shall submit the proposed protocol for the initial source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall submit source test results no later than 60 days following the source test date to both the SCAQMD and CPM. The project owner shall notify the SCAQMD and CPM no later than 10 days prior to the proposed initial source test date and time.

AQ-8 The project owner shall conduct source testing of each gas turbine exhaust stack in accordance with the following requirements:

- The project owner shall submit a source test protocol to the SCAQMD and the CPM for approval no later than 45 days prior to the proposed source test date. The protocol shall include the proposed operating conditions of the gas turbine, the identity of the testing lab, a statement from the lab certifying that it meets the criteria of SCAQMD Rule 304, and a description of all sampling and analytical procedures.
- Source testing for ammonia slip only shall be conducted quarterly for the first 12 months of operation and annually thereafter.
- NOx concentrations as determined by CEMS shall be simultaneously recorded during the ammonia test. If the NOx CEMS is inoperable, a test shall be conducted to determine the NOx emission by using SCAQMD Method 100.1 measured over a 60 minute time period.
- Source testing shall be conducted to determine the ammonia emissions from each gas turbine exhaust stack using SCAQMD Method 5.3 and 207.1 or U.S. EPA Method 17 measured over a 1 hour averaging period at the outlet of the SCR.
- The SCAQMD and CPM shall be notified of the date and time of the source testing at least 7 days prior to the test.
- The source test shall be conducted and the results submitted to the SCAQMD and CPM within 45 days after the test date.
- Source testing shall measure the fuel flow rate, the flue gas flow rate and the gas turbine generating output.
- The test shall be conducted when the equipment is operating at 80 percent load or greater.

- If the turbine is not in operation during one quarter, then no testing is required during that quarter.
- All emission data is to be expressed in the following units:
  1. ppmv corrected to 15 percent oxygen,
  2. pounds per hour,
  3. pounds per million cubic feet of fuel burned.

Verification: The project owner shall submit the proposed protocol for the source tests 45 days prior to the proposed source test date to both the SCAQMD and CPM for approval. The project owner shall notify the SCAQMD and CPM no later than 7 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 45 days following the source test date to both the SCAQMD and CPM.

AQ-9 The project owner shall install and maintain a CEMS in each exhaust stack of the combustion turbine trains to measure the following parameters:

NOx concentration in ppmv and CO concentration in ppmv.

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

- The CEMS will convert the actual CO concentrations to mass emission rates (lb/hr) and record the hourly emission rates on a continuous basis.
- The CEMS shall be installed and operated to measure CO concentration over a 15 minute averaging time period.
- The CEMS shall be installed and operated in accordance with an approved SCAQMD Rule 218 CEMS plan application and the requirements of Rule 2012.
- The CO CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine.
- The NOx CEMS shall be installed and operating no later than 12 months after initial start-up of the turbine.

During the interim period between the initial start-up and the provisional certification date of the CEMS, the project owner shall comply with the monitoring requirements of Rule 2012 (h)(2) and Rule 2012 (h)(3). Within two weeks of the turbine start-up date, the project owner shall provide written notification to the SCAQMD of the exact date of start-up.

Verification: Within 30 days of certification, the project owner shall notify the CPM of the completion of the certification process for the CEMS.

AQ-10 The project owner shall keep records in a manner approved by the SCAQMD for the following items:

- Natural Gas use after CEMS certification
- Natural Gas use during the commissioning period
- Natural Gas use after the commissioning period and prior to the CEMS certification.

Verification: The project owner shall submit to the CPM for approval all fuel usage records on a quarterly basis as part of the quarterly emissions report of Condition of Certification **AQ-SC9**.

AQ-11 The owner/operator shall calculate and continuously record the ammonia (NH_3) slip emission concentration from each exhaust stack for each gas turbine using the following formula:

NH_3 (ppmv @ 15 percent O2) = ((a-b*(c/1E6))*1E6/b)*d, where:

a = NH3 injection rate (lb/hr)/17(lb/lbmol),

b = dry exhaust flow rate (scf/hr) / 385.5 (scf/lbmol),

c = change in measured NOx concentration across across the SCR (ppmvd at 15% O2).

The 5 PPMV NH_3 emission limit(s) shall be averaged over 60 minutes at 15% O_2, dry basis.

The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppmv accurate to plus or minus 5 percent calibrated at least once every twelve months.

The NOx analyzer shall be installed and operated within 90 days of initial start-up.

The operator shall use the above described method or another alternative method approved by the Executive Officer of the SCAQMD.

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

Verification: The project owner shall include ammonia slip concentrations averaged on an hourly basis as part of the Quarterly Operational Report required

in Condition of Certification **AQ-SC9** and calculated via the protocol provided in this condition. Exceedances of the ammonia limit shall be reported in the following quarterly report.

AQ-12 The operator shall install and maintain an ammonia injection flow meter and recorder to accurately indicate and record the ammonia injection flow rate being supplied to each turbine. The device or gauge shall be accurate to within plus or minus 5 percent and shall be calibrated once every twelve months. The ammonia injection system shall be placed in full operation as soon as the minimum temperature is reached. The minimum temperature is listed as 540 degrees F at the inlet to the SCR reactor.

Continuously recording is defined for this condition as at least once every hour and is based on the average of the continuous monitoring for that hour.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-13 The operator shall install and maintain a temperature gauge and recorder to accurately indicate and record the temperature in the exhaust at the inlet of the SCR reactor. The gauge shall be accurate to within plus or minus 5 percent and shall be calibrated once every twelve months. The catalyst temperature range shall remain between 740 degree F and 840 degree F. The catalyst temperature shall not exceed 840 degrees F. The temperature range requirement of this condition does not apply during startup operations of the turbine.

Continuously recording is defined for this condition as at least once every hour and is based on the average of the continuous monitoring for that hour.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-14 The operator shall install and maintain a pressure gauge and recorder to accurately indicate and record the pressure differential across the SCR catalyst bed in inches of water column. The gauge shall be

accurate to within plus or minus 5 percent and shall be calibrated once every twelve months. The pressure drop across the catalyst shall not exceed 12 inches of water column during the start-up period.

Continuously recording is defined for this condition as at least once every month and is based on the average of the continuous monitoring for that month.

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate device has been installed and is functioning properly. The project owner shall submit annual calibration results within 30 days of their successful completion.

AQ-15 The project owner shall limit the operating time of the firewater pump to no more than 199.99 hours per year. The firewater pump shall be equipped with a non-resettable elapsed meter to accurately indicate the elapsed operating time of the engine. The firewater pump shall be equipped with a non-resettable totalizing fuel meter to accurately indicate the fuel usage of the engine. The firewater pump shall burn only diesel fuel that contains sulfur compounds less than or equal to 15 ppm by weight.

An engine operating log shall be kept in writing, listing the date of operation, the elapsed time, in hours, and the reason for operation. The log shall be maintained for a minimum of 5 years and made available to SCAQMD personnel and CPM upon request.

The project owner shall keep records in a manner approved by the Executive Officer; consisting of emergency use hours of operation, maintenance and testing hours, other operating hours (describe the reason for operation).

Verification: The project owner shall submit to the CPM no less than 30 days after installation, a written statement by a California registered Professional Engineer stating that said engineer has reviewed the as-built-designs or inspected the identified equipment and certifies that the appropriate devices have been installed and are functioning properly. The project owner shall submit all dates of operation, elapsed time in hours, and the reason for each operation in the Quarterly Operations Report (**AQ-SC9**).

AQ-16 The project equipment shall not be operated unless the project owner demonstrates to the SCAQMD Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the project owner demonstrates to the Executive

Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emission increase. The project owner shall submit all such information to the CPM for approval.

To comply with this condition, the project owner, for the first year commissioning and operation, shall hold a minimum of:

839 lbs for each of Units 1-41,835 lbs for each of Units 6-8, a total of 286,709 lbs.

- 12777.25 lbs for the operation of the firewater pump.

A First Year Total of: 286,786 lbs NOx RTC.

To comply with this condition, the project owner, for the second year operation, shall hold a minimum of:

110 lbs for each of Units 1-36,107 lbs for each of Units 6-8, a total of 240,881 lbs.

- 12777.25 lbs for the operation of the firewater pump.

A Second Year Total of: 240,958 lbs NOx RTC.

Verification: The project owner shall submit evidence of sufficient RTCs to the CPM demonstrating compliance on an annual basis as part of the annual compliance report.

AQ-17 Deleted

AQ-18 Deleted

AQ-19 The project owner shall submit proof to the CPM that the State Implementation Plan (SIP) has been amended to include the provisions of AB 1318.

Verification: The project owner shall submit evidence proving that the State Implementation Plan (SIP) has been amended to include the provisions of AB 1318 to the CPM prior to commencement of operations.

AIR QUALITY ATTACHMENT A
PM10 Reductions from Sources Which Ceased Operation

Company Name	Location	Equipment Description	Emission Credits (lb/year)
AAA Glass Corp	Los Angeles	Glass Melting Furnace	1,877.8
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	604.8
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	604.8
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	604.8
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	604.8
AES Huntington Beach, Llc	Huntington Beach	Turbine Engine - Natural Gas/Oil	1,417.2
AES Huntington Beach, Llc	Huntington Beach	Turbine Engine - Natural Gas/Oil	1,417.2
AES Huntington Beach, Llc	Huntington Beach	Turbine Engine - Natural Gas/Oil	1,417.2
Anaheim Marriott Hotel	Anaheim	Boiler - Natural Gas	20.4
Anaheim Marriott Hotel	Anaheim	Boiler - Natural Gas	20.4
Anaheim Marriott Hotel	Anaheim	Boiler - Natural Gas	19.3
Anaheim Marriott Hotel	Anaheim	Boiler - Natural Gas	19.3
Associated Ready Mixed Concrete Inc	Corona	Concrete Batch Equipment	27.4
Astech Engineered Products Inc.	Santa Ana	Abrasive Blasting - Open	16.0
Aurora Modular Industries	Moreno Valley	Open Spray Equipment	451.4
Aurora Modular Industries	Moreno Valley	Open Spray Equipment	451.4
Aurora Modular Industries	Moreno Valley	Open Spray Equipment	451.4
Aurora Modular Industries	Moreno Valley	Open Spray Equipment	451.4
Aurora Modular Industries	Moreno Valley	Open Spray Equipment	451.4
Blackhawk Furniture, Inc	Riverside	Spray Booth	604.0
Bocchi Laboratories Inc	Walnut	Boiler - Natural Gas	87.6
California Portland Cement Co	San Juan Capistrano	Cement Storage Silo	12.0
CBS Inc	Los Angeles	Boiler - Natural Gas/Oil	89.6
CBS Inc	Los Angeles	Boiler - Natural Gas/Oil	89.6
Century Rim Corp	Brea	Bakery Oven	32.1
Century Rim Corp	Brea	Spray Booth	5,272.0
Chandler Aggregates	Corona	Aggregate Production	1,411.2
Clean Steel Inc	Long Beach	Material Size Reduction	4,112.5
CMC Printed Bag Inc	Whittier	Afterburner	29.0
Color Master Printex, Inc	Vernon	Tenter Frame Oven	75.6
Color Master Printex, Inc	Vernon	Boiler - Natural Gas	75.6
Color Master Printex, Inc	Vernon	Boiler - Natural Gas	75.6

AIR QUALITY ATTACHMENT A
PM10 Reductions from Sources Which Ceased Operation

Company Name	Location	Equipment Description	Emission Credits (lb/year)
Colorgraphics	Los Angeles	Printing Press - Heat Set	5.0
Colorgraphics	Los Angeles	Printing Press - Heat Set	5.0
Colorgraphics	Los Angeles	Printing Press - Heat Set	5.0
Colorgraphics	Los Angeles	Afterburner	5.0
Commonwealth Aluminum Concast Inc	Torrance	Coating Equipment With Afterburner	671.7
Crest Graphics Inc	Commerce	Printing Press With Afterburner	48.7
Crest Graphics Inc	Commerce	Drying Oven With Afterburner	77.0
Diamond Pacific Products Co	Perris	Boiler - Natural Gas	92.8
Douglas Furniture Of California Llc	Redondo Beach	Boiler - Wood Fired With Baghouse	32.5
Dynamite Inc	Diamond Bar	Portable Diesel Ice	1,704.0
Dynamite Inc	Diamond Bar	Portable Diesel Ice	1,118.0
El Camino College	Torrance	Boiler - Natural Gas	192.0
Elsinore Ready-Mix Co Inc	Lake Elsinore	Aggregate Size Reduction	13.7
Equitable Real Est/Compass Mgmt Leasing	Irvine	Boiler - Natural Gas	4.9
Falcon Foam, A Div Of Atlas Roofing Corp	Los Angeles	Boiler - Natural Gas	293.1
Falcon Foam, A Div Of Atlas Roofing Corp	Los Angeles	Afterburner	230.2
Ford Auto Body Inc	San Fernando	Spray Booth	6.0
FS Precision Tech Llc	Compton	Abrasive Blasting Cabinet	77.2
FS Precision Tech Llc	Compton	Abrasive Blasting Cabinet	30.3
FS Precision Tech Llc	Compton	Abrasive Blasting Cabinet	30.3
FS Precision Tech Llc	Compton	Abrasive Blasting Cabinet	30.3
Great American Picture Frame Co	Los Angeles	Open Spray Equipment	104.5
Great American Picture Frame Co	Los Angeles	Spray Booth	104.5
Great American Picture Frame Co	Los Angeles	Open Spray Equipment	104.5
Holga Inc	Van Nuys	Paint Burnoff Furnace	18.6
Honeywell International Inc	Torrance	Jet Engine Test Equipment	59.0
Intermetro Industries Corp	Rancho Cucamonga	Heat Treating Furnace	65.0
Intermetro Industries Corp	Rancho Cucamonga	Nickel Plating Tank	17.0
Intermetro Industries Corp	Rancho Cucamonga	Boiler - Natural Gas	87.5
Interstate Brands Corp/Dicarlo	San Pedro	Bakery Oven	131.2
Interstate Brands Corp/Dicarlo	San Pedro	Bakery Oven	133.5

AIR QUALITY ATTACHMENT A
PM10 Reductions from Sources Which Ceased Operation

Company Name	Location	Equipment Description	Emission Credits (lb/year)
Interstate Brands Corp/Dicarlo	San Pedro	Bakery Oven	93.0
Interstate Brands Corp/Dicarlo	San Pedro	Boiler - Natural Gas	109.0
KMCWheel Co Inc	Riverside	Aluminum Furnace	2,940.8
Kraco Enterprises Inc	Compton	Boiler - Oil	429.5
Kraft Foods North America/Nabisco Div	Buena Park	Bakery Oven	110.1
Kraft Foods North America/Nabisco Div	Buena Park	Bakery Oven	110.1
Kraft Foods North America/Nabisco Div	Buena Park	Bakery Oven	110.1
Lithographix Inc	Los Angeles	Afterburner	15.0
Little Company Of Mary Hospital	Torrance	Boiler - Natural Gas/Oil	404.7
Long Beach Aquarium Of The Pacific	Long Beach	Heater/Furnace - Natural Gas	301.3
Matthews International Corp	Romoland	Foundry Sand Storage With Baghouse	9,460.5
Mountainview Generating Station	Redlands	Utility Boiler - Natural Gas/Oil	3,365.5
Mountainview Generating Station	Redlands	Utility Boiler - Natural Gas/Oil	3,365.5
Neville Chem Co	Anaheim	Chemical Storage Tank	268.4
Neville Chem Co	Anaheim	Boiler - Natural Gas	239.7
Oldcastle Westile, Inc.	Corona	Cement Slurry System	2,111.0
One Wilshire, Carlyle One Wilshire, Llc	Los Angeles	Boiler - Natural Gas	19.1
Ontario Sandblasting Co	Ontario	Abrasive Blasting Cabinet	12.8
Ontario Sandblasting Co	Ontario	Abrasive Blasting Cabinet With Baghouse	12.8
Ontario Sandblasting Co	Ontario	Abrasive Blasting Cabinet With Baghouse	12.8
Ortiz Enterprises Inc	Various Locations	Aggregate Crushing System	1,233.0
Pacific Sun Casual Furn Div Of Pac Outdo	Hemet	Powder Coating Spray Booth	30.0
Paradise Textile Co	Chino	Heater/Furnace - Natural Gas	1,109.5
Plasti Personalities Inc	Harbor City	Boiler - Natural Gas	9.4
Polyclad Laminates Inc	Santa Ana	Boiler - Natural Gas	291.6
Polyclad Laminates Inc	Santa Ana	Boiler - Natural Gas	291.6
Pratt & Whitney Rocketdyne, Inc.	Canoga Park	Boiler - Natural Gas	30.5
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	1,959.1
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	1,959.1
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	1,959.1

AIR QUALITY ATTACHMENT A
PM10 Reductions from Sources Which Ceased Operation

Company Name	Location	Equipment Description	Emission Credits (lb/year)
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	1,959.1
Reliant Energy Etiwanda, Inc.	Etiwanda	Utility Boiler - Natural Gas/Oil	33,079.3
Reliant Energy Etiwanda, Inc.	Etiwanda	Utility Boiler - Natural Gas/Oil	33,079.3
Scheu Manufacturing Company	Rancho Cucamonga	Curing Oven	13.0
Shawcor Pipe Protection Llc.	Fontana	Abrasive Blasting - Open	7,677.0
Smurfit-Stone Container Enterprises	Santa Fe Springs	Boiler - Natural Gas/Lpg	237.0
Statewide Sandblasting	Various Locations	Abrasive Blasting - Open	2,313.0
Sunlaw Cogeneration Partners I	Vernon	Turbine Engine - Natural Gas	1,295.4
Sunlaw Cogeneration Partners I	Vernon	Turbine Engine - Natural Gas	2,467.4
TABC, Inc	Long Beach	Curing Oven	121.5
Telair International	Rancho Dominguez	Spray Booth	69.5
The Boeing Company	Seal Beach	Emergency Ice - Diesel Fire Pump	868.0
Trend Offset Printing Services, Inc	Los Alamitos	Afterburner	42.0
Universal Die Casting Co	Vernon	Brass Crucible	370.5
Us Postal Service, Santa Clarita Center	Santa Clarita	Heater/Furnace - Natural Gas	66.0
Valmont Coatings, Calwest Galv	Long Beach	Portable Diesel Ice	2.7
Vought Aircraft Industries	Hawthorne	Boiler - Natural Gas	51.0
Webb-Massey Co Inc	Orange	Spray Booth	572.7
Webb-Massey Co Inc	Orange	Spray Booth	572.7
Whitewater Rock & Supply Co	White Water	Rock Crushing System	1,460.0
Wings West Inc	Santa Ana	Spray Booth	498.0
Wings West Inc	Santa Ana	Spray Booth	498.0
Wings West Inc	Santa Ana	Spray Booth	498.0
Woodard, Llc.	Ontario	Powder Coating Oven	10.2
Woodard, Llc.	Ontario	Drying Oven	5.1
Total			**148,582.7**

AIR QUALITY ATTACHMENT B
SOx Reductions from Sources Which Ceased Operation

Company Name	Location	Equipment Description	Emission Credits (lb/year)
AAA Glass Corp	Los Angeles	Glass Melting Furnace	6,295.4
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	108.0
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	108.0
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	108.0
AES Alamitos, Llc	Long Beach	Turbine Engine - Natural Gas/Oil	108.0
CBS Inc	Los Angeles	Boiler - Natural Gas/Oil	7.1
CBS Inc	Los Angeles	Boiler - Natural Gas/Oil	7.1
Century Rim Corp	Brea	Bakery Oven	3.5
Color America Textile Processing Inc	Los Angeles	Carpet Processing Sys With Esp	3.3
El Camino College	Torrance	Boiler - Natural Gas	15.2
Gateway Sandblasting	Various Locations	Open Abrasive Blasting	455.2
Holga Inc	Van Nuys	Paint Burnoff Furnace	2.0
Honeywell International Inc	Torrance	Jet Engine Test Equipment	4.5
Mountainview Generating Station	Redlands	Utility Boiler - Natural Gas/Oil	265.5
Mountainview Generating Station	Redlands	Utility Boiler - Natural Gas/Oil	265.5
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	169.6
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	169.6
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	169.6
Reliant Energy Etiwanda, Inc.	Etiwanda	Turbine Engine - Natural Gas/Oil	169.6
Reliant Energy Etiwanda, Inc.	Etiwanda	Utility Boiler - Natural Gas/Oil	2,611.3
Reliant Energy Etiwanda, Inc.	Etiwanda	Utility Boiler - Natural Gas/Oil	2,611.3
Sunlaw Cogeneration Partners I	Vernon	Turbine Engine - Natural Gas	2,506.4
Sunlaw Cogeneration Partners I	Vernon	Turbine Engine - Natural Gas	2,193.5
The Boeing Company	Seal Beach	Emergency Ice -Diesel Fire Pump	183.5
		Total	**18,540.6**

C. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential effects from project emissions of toxic air contaminants. In this analysis, we review the evidence concerning whether emissions of pollutants for which there are no established air quality standards (noncriteria pollutants) will result in significant adverse impacts that violate standards for public health protection.[1] The evidence submitted by Applicant and Staff was uncontested. (11/3/08 RT 16, 31; Exs. 12; 47; 60; 109; 200, § 4.7.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants (TACs). Those substances discussed here are categorized as noncriteria pollutants because there are no ambient air quality standards established to regulate their emissions.[2] In the absence of specific standards, a health risk assessment process is used to evaluate potential adverse health effects.

1. Health Risk Assessment

The risk assessment procedure consists of the following steps:

- Identify the types and amounts of hazardous substances that the project could emit to the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact;[3] and
- Characterize potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 200, p. 4.7-3.)

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[1] This Decision discusses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in **Hazardous Materials Management** and **Worker Safety And Fire Protection**. Electromagnetic fields are discussed in the section on **Transmission Line Safety And Nuisance**. Potential impacts from the project's wastewater streams are discussed in the **Soil And Water Resources** section. Facility releases of hazardous and non-hazardous wastes are described in the **Waste Management** section.

[2] Criteria pollutants are discussed in the **Air Quality** section, supra.

[3] These are the primary exposure pathways, or ways in which people might come into contact with toxic substances.. (Ex. 200, p. 4.7-3.)

Typically, the initial risk analysis for a project is performed at a "screening level" which is designed to conservatively estimate actual health risks. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then using those conditions in the study. 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 the type of air quality computer model 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 for 70 years; 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). (Ex. 200, pp. 4.7-3 to 4.7-4.)

The risk assessment process addresses three categories of health impacts: acute (short-term) health effects; chronic (long-term) non-cancer effects; and cancer risk (also long-term). Acute health effects result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Chronic health effects are those which arise as a result of long-term exposure to lower concentrations of pollutants. (Ex. 200, p. 4.7-4.)

Exposure to multiple toxic substances may result in health effects that are equal to, less than, or greater than effects resulting from exposure to the individual substances. The health risk assessment assumes that the effects of each substance are additive for a given organ system. In cases where the interactions may be synergistic (the effects are greater than the sum), this approach may underestimate the health impact. (Ex. 200, pp. 4.7-4 to 4.7-5.)

The analysis for non-cancer health effects compares the maximum project contaminant exposure levels to safe levels called "reference exposure levels" or RELs. These exposure levels are designed to protect the most sensitive

individuals in the population[4] and represent the amounts of toxic substances to which even sensitive people can be exposed and suffer no adverse health effects. The RELs are based on the most adverse health effects reported, and include margins of safety. Health protection is expected if the estimated worst case exposure is below the pertinent REL. (*Id.*)

For carcinogenic substances, the health assessment considers the risk of developing cancer and assumes that continuous exposure to the cancer-causing substance occurs over a 70-year lifetime. 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. Cancer risks for each carcinogen are added to yield total cancer risk. The risk that is calculated is not meant to project the actual expected incidence of cancer, but rather a theoretical upper-bound number based on worst-case assumptions. (Ex. 200, p. 4.7-5.) The conservative nature of the screening assumptions used means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated.

If the screening analysis predicts no significant risks, then no further analysis is required. However, if risks are above the significance level then further analysis, using more realistic, site-specific assumptions, is performed to obtain a more accurate assessment of potential public health risks. (*Id.*)

2. Significance Criteria

The evidence shows that the potential significance of project related health impacts is determined separately for short-term, long-term non-cancer, and long-term carcinogenic health effects. (*Id.*) For acute and chronic non-cancer health effects, the significance is assessed by calculating a *hazard index* for the exposure being considered. This index is a ratio obtained by comparing exposure from facility emissions to the REL (safe) exposure level for a specific toxicant. A ratio of less than 1.0 signifies that the worst-case exposure is below the safe level. The hazard indices for all toxic substances that have the same type of health effect are added to yield a Total Hazard Index for the source being evaluated. The Total Hazard Index is calculated separately for acute and chronic effects.

[4] Staff characterizes infants, children, the aged, and those suffering from illnesses or diseases that make them more susceptible to effects of toxic substance exposure as sensitive individuals. (Ex, 200, p. 4.7-4.)

A Total Hazard Index of less than one indicates that cumulative worst-case exposure would be within safe levels. Under these conditions, health protection is assumed even for sensitive members of the population. (Ex. 200, pp. 4.7-5 to 4.7-6.)

For possible cancer risks, the evidence shows that the standards contained in the implementing regulations for the Safe Drinking Water and Toxic Enforcement Act (Health and Safety Code, § 25249.5 et seq.) are used. This hazard level reflects a cancer risk of 10 in 1,000,000 based upon each cancer causing substance separately. Staff applies an even more health-protective approach since it determines significance based on the total risk from all cancer-causing chemicals from the source in question. (Ex. 200, p. 4.7-6.)

The evidence assesses the health impacts of the Sentinel Project's non-criteria pollutant emissions for the construction phase and the operation phase separately.

3. Potential Construction Phase Impacts

These are short-term in nature (18 months) and caused primarily by exposure to the wind-blown dust from site excavation and grading, as well as from construction equipment emissions.

Since, as discussed in the **Waste Management** section, there are no toxic pollutants at levels constituting a human health hazard at the site, the main risks arise from exposure to PM_{10} and $PM_{2.5}$ particles. (Ex. 1, pp. 7.71 to 7.18, 7.13-1 to 7.13-3; Appendices I, Q; 200, pp. 4.7-8 to 4.7-9.) The particulate emissions are criteria pollutants and, as such, are assessed in this Decision's **Air Quality** section. They are mitigated sufficiently by specific Conditions of Certification to ensure no violation of applicable air standards occurs.

The exhaust from diesel-fueled construction equipment can add to the the risk of both carcinogenic and non-carcinogenic health impacts. These potential risks are also discussed in the **Air Quality** section, and are also specifically mitigated to below levels of significance through Conditions of Certification **AQ-SC1** to **AQ SC5**. (Ex. 200, p. 4.7-9.)

4. Potential Operational Phase Impacts

The evidence shows that the main public health risks attributable to the Sentinel Project will stem from the combustion turbine emissions, testing of the emergency diesel firewater pump engine, and the evaporative cooling tower. The toxic emissions and the contribution to health risks are shown in **PUBLIC HEALTH** Table 1, below:

Public Health Table 1
Types of Health Impacts and Exposure Routes Attributed to Toxic Emissions

Substance	Oral Cancer	Oral Non-Cancer	Inhalation Cancer	Non-cancer (Chronic)	Non-cancer (Acute)
Acetaldehyde			✔	✔	
Acrolein				✔	✔
Ammonia				✔	✔
Arsenic	✔	✔	✔	✔	✔
Benzene			✔	✔	✔
1,3-Butadiene			✔	✔	
Cadmium		✔	✔	✔	
Chromium			✔	✔	
Copper				✔	✔
Ethylbenzene				✔	
Formaldehyde			✔	✔	✔
Hexane				✔	
Lead	✔	✔	✔	✔	
Mercury		✔		✔	✔
Naphthalene		✔		✔	
Nickel			✔	✔	✔
Polynuclear Aromatic Hydrocarbons (PAHs)	✔	✔	✔	✔	
Propylene				✔	
Propylene oxide			✔	✔	✔
Toluene				✔	✔
Xylene				✔	✔
Zinc				✔	

Source: Ex 200, p. 4.7-11.

These potential health effects were assessed and documented for various pollutants and entry pathways into the human body. The analyses established the maximum potential for acute and chronic effects on human body systems such as the liver, central nervous system, the immune system, kidneys, the reproductive system, the skin, and the respiratory system. (Ex. 200, p. 4.7-10.)

Levels of non-criteria pollutants tend to be highest in the immediate area, and decrease rapidly with distance. (Ex, 200, p. 4.7-10.) As shown in **PUBLIC HEALTH** Table 2, below, the chronic non cancer hazard index at the point of maximum impact (PMI) is 0.030 for a location on the eastern property boundary, while the maximum hazard index for acute non cancer effects is 0.115 for a point approximately 2 miles to the northwest of the site. Both indices are below the significance level of 1.0.

Public Health Table 2
Sentinel Project's Operation Hazard/Risk

Type of Hazard/Risk	Hazard Index/Risk	Significance Level	Significant ?
Acute Non-cancer	0.115	1.0	No
Chronic Non-cancer	0.030	1.0	No
Individual Cancer	0.856×10^{-6}	10.0×10^{-6}	No

Source: Ex. 200, p. 4.7-12.

Table 2 also shows that the cancer risk estimate for the point of maximum impact is 0.856 in 1,000,000 at a location at the eastern property boundary. This risk estimate is well below the significance criterion of 10 in 1,000,000 for this screening-level assessment. Thus, project-related cancer risk from project operations would be less than significant for all individuals in the project area. This risk estimate is similarly below the requirements of SCAQMD's Rule 1401 which specifies a significance criterion of 10 in 1, 000,000 for a project with the best control technology for toxics. (Ex. 200, p. 4.7-12.) These values are well below significance criterion of 1.0, indicating that the pollutants in question are unlikely to pose a significant risk of either chronic or acute non-cancer health effects anywhere in the project area. (Ex. 200, p. 4.7-11.)

Risks from cooling tower emissions stem from Legionella. This is a bacterium that is ubiquitous in natural aquatic environments and widely distributed in man-made water systems. It is the principal cause of legionellosis, more commonly known as Legionnaires' disease. Transmission to people results mainly from the

inhalation or aspiration of aerosolized contaminated water. Untreated or inadequately treated cooling systems, such as industrial cooling towers and building heating, ventilating, and air conditioning systems have been associated with outbreaks of legionellosis since cooling water systems and their components can amplify and disseminate aerosols that contain Legionella. (Ex. 200, p. 4.7-12.)

Effective mitigation measures include a cleaning and maintenance program to minimize the accumulation of bacteria, algae, and protozoa that may contribute to the nourishment of Legionella. The American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE 1998) emphasizes the need for such programs in its specifications for Legionellosis prevention. Also, the Cooling Tower Institute has issued guidelines for the best practices for control of Legionella (CTI 2000). Preventive maintenance includes effective drift eliminators, periodically cleaning the system as appropriate, maintaining mechanical components, and maintaining an effective water treatment program with appropriate biocide concentrations. (*Id.*)

We have therefore included Condition of Certification **PUBLIC HEALTH-1.** This condition specifically requires the project owner to prepare and implement a cooling water management plan to ensure that bacterial growth is kept to a minimum in the cooling tower. With the use of an aggressive antibacterial program coupled with routine monitoring and biofilm removal, the risk associated with bacterial growth and dispersal will be reduced to less than significant. (Ex. 200, p. 4.7-13.)

Finally, even at the point of maximum impact, where pollutant concentrations would be the highest, the calculated incremental cancer risk is 0.856 in 1,000,000. This does not contribute significantly to the average lifetime individual cancer risk of 330,000 in 1,000,000. Facility-related risks are much lower for more distant locations. Therefore, the incremental risk estimate for the project's operation is not a significant contribution to the area's overall cancer risk.

The worst-case long-term non-cancer health impact from the project (represented as a chronic hazard index of 0.030) is also well below the significance level of 1.0 at the location of maximum impact. At this level, the evidence indicates that any contribution to existing area non-cancer health impacts will not be cumulatively significant. As with cancer risk, the evidence shows that long-term non-cancer hazard risk will be lower at all other locations. (*Id.*)

FINDINGS OF FACT

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

1. Construction and normal operation of the project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

2. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

3. Emissions of criteria pollutants, which are discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels below significance and consistent with applicable standards.

4. The evidence of record contains health risk assessments, using well-established scientific protocol, to analyze potential adverse health effects of toxic air contaminants.

5. 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 so that actual risks are expected to be much lower at any other location.

6. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic non-carcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects.

7. Application of the hazard index method establishes that emission of non-criteria pollutants from the project will not cause acute or chronic adverse public health effects.

8. The maximum non-cancer and the maximum cancer risks associated with the project are substantially below the significance thresholds commonly accepted for risk analysis purposes.

9. The project owner will implement a Cooling Water Management Plan in accordance with applicable LORS and guidelines to minimize the potential for growth of Legionella bacteria and other micro-organisms in cooling tower emissions.

10. Cumulative impacts from noncriteria pollutants were analyzed in accordance with the provisions of CEQA and are not expected to be significant.

CONCLUSIONS OF LAW

We therefore conclude that emissions of noncriteria pollutants from the construction and operation of the Sentinel Project do not pose a significant direct, indirect, or cumulative adverse public health risk and that the project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

PUBLIC HEALTH-1. The project owner shall develop and implement a Cooling Water Management Plan that is consistent with either Staff's *Cooling Water Management Program Guidelines* or the Cooling Technology Institute's *Best Practices for Control of Legionella* guidelines.

Verification: At least 30 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the Compliance Project Manager for review and approval.

D. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. Implementation of various existing laws and standards will suffice to reduce these hazards to minimal levels. Therefore, this subsection focuses on whether Applicant's proposed health and safety plans will be adequate to protect industrial workers in accordance with all applicable LORS. The record also addresses the availability and adequacy of fire protection and emergency response services.

The evidence submitted by Applicant and Staff was uncontested. (11/3/08 RT 18, 31; Exs. 1, § 7; 13; 121; 200, § 4.14; 212.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Worker Safety

Industrial environments are potentially dangerous during construction, operation, and demolition activities. Workers at the Sentinel Project will be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and various other injuries. They may be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. Thus, it is important for the project to have well-defined policies and procedures, training, and hazard recognition and controls to minimize injuries and protect workers.

The evidence extensively details the type and content of several plans which will be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. (Ex. 200, pp. 4.14-4 to 4.14-8.) 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 by the Compliance Project Manager prior to project construction and operation. A separate "Injury and Illness Prevention Program," "Personal Protective Equipment Program," "Emergency Action Plan," "Fire Protection and Prevention Plan," and other general safety procedures will be prepared for both the construction and operation phases of the project. (Ex. 200, pp. 4.14-4 to 4.14-7.) Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that these measures will be developed and implemented.

OSHA and Cal-OSHA standards encourage employers to monitor worker safety by employing a "competent person" who has knowledge and experience with enforcing OSHA/Cal-OSHA standards, can identify workplace hazards, and has authority to take appropriate action. (Ex. 200, p. 4.14-9.) To implement the intent expressed in these standards, Condition **WORKER SAFETY-3** 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.

To reduce and/or eliminate safety hazards during project construction and operation, it is also necessary to employ a professional Safety Monitor. The Safety Monitor, who is hired by the project owner but reports to the Chief Building Official and the Compliance Project Manager, will track compliance with OSHA/Cal-OSHA regulations and serve as an on-site OSHA expert. This professional will periodically audit safety compliance during construction, commissioning, and the transition to operational status, as well as ensure that safety procedures and practices are fully implemented. (Ex. 200, p. 4.14-10.) Condition **WORKER SAFETY-4** describes the role of a Safety Monitor.

The project owner will maintain an automatic, portable defibrillator on-site to provide immediate response in the event of a medical emergency.[12] Condition **WORKER SAFETY-5** requires the project owner to ensure this device is available during construction and operation, and that appropriate personnel are trained to use it.

2. Fire Protection and Emergency Response

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of diesel fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment may cause small fires. The on-site fire protection system provides the first line of defense for such occurrences. The Construction Fire Prevention and Protection Plan (Condition **WORKER SAFETY-1**) will address

[12] Staff's testimony contends that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. Staff therefore endorses this as an appropriate safety and health precaution. (Ex. 200, p. 4.14-11.)

the placement of fire extinguishers and will detail measures to minimize the likelihood of fires during construction. (Ex. 200, pp. 4.14-10 to 4.4-11.)

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), and all Cal/OSHA requirements. Fire suppression elements will include both fixed and portable fire extinguishing systems. The fire water will be raw water pumped from on-site wells to the project's raw water storage tanks. (Exs. 200, p. 4.14-11; 212.)

A fixed sprinkler system will be installed in areas of risk and in administrative buildings in accordance with NFPA requirements. A carbon dioxide and dry chemical fire protection system will be provided for the combustion turbine generators and accessory equipment. This system will have fire detection sensors that will trigger alarms, turn off ventilation, close ventilation openings, and automatically actuate the CO_2 and chemical suppression system. In addition to the fixed fire protection system, appropriate class-of-service portable extinguishers and fire hydrants will be located throughout the facility at code-approved intervals. (Ex. 200, p. 4.14-11.) The evidence establishes that these systems will provide adequate fire protection. (Ex. 200, p. 4.4-12.)

The project will be under the jurisdiction of the Palm Springs Fire Department (PSFD). Response time from the closest station to the project is about ten minutes. The PSFD will also be the first responder to hazardous materials incidents, with backup support provided by the Riverside County Department of Environmental Health's Hazardous Materials Incident Response Team. The evidence shows that this entity is capable of handling any hazardous materials related incident that might occur at the facility. (Ex. 200, p. 4.4-3.)

FINDINGS OF FACT

Based on the uncontroverted evidence, the Commission makes the following findings and reaches the following conclusions:

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The project will employ an on-site professional Safety Monitor during construction and operation.

4. The CPV Sentinel Project will include on-site fire protection and suppression systems as the first line defense in the event of a fire.

5. The Palm Springs Fire Department (PSFD) will provide fire protection and emergency response services to the project.

6. Existing fire and emergency service resources are adequate to meet project needs.

7. The CPV Sentinel Project will not create cumulative adverse impacts upon the fire and emergency response capabilities of the PSFD.

8. The project owner will maintain an automatic defibrillator on-site to provide immediate response in the event of a medical emergency.

9. Compliance with applicable LORS ensures that workers will be adequately protected from health and safety hazards.

CONCLUSIONS OF LAW

Implementation of the Conditions of Certification, below, and the mitigation measures contained therein will ensure that the project conforms with all applicable laws, ordinances, regulations, and standards on industrial worker health and safety as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the Compliance Project Manager (CPM) a copy of the Project Construction Safety and Health Program containing the following:

- a Construction Personal Protective Equipment Program;
- a Construction Exposure Monitoring Program;
- a Construction Injury and Illness Prevention Program;
- 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 programs with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Palm Springs Fire Department for review and comment prior to submittal to the CPM for approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Palm Springs Fire Department stating the Fire Department's comments on the Construction Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety and Health Program containing the following:

- an Operation Injury and Illness Prevention Plan;
- an Emergency Action Plan;
- a Hazardous Materials Management Program;
- an Operation Fire Prevention Program (8 Cal. Code Regs., § 3221); and
- a Personal Protective Equipment Program (8 Cal. Code Regs., §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable Safety Orders. The Operation Fire Prevention Plan, the Hazardous Materials Management Program, and the Emergency Action Plan shall also be submitted to the Palm Springs Fire Department for review and comment.

Verification: At least 30 days prior to the start of first fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Palm Springs Fire Department stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws,

ordinances, regulations, and standards; is capable of identifying workplace hazards relating to 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;
- assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- assure that all construction and commissioning workers and supervisors receive adequate safety training;
- complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- assure 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);
- a summary report of safety management actions and safety-related incidents that occurred during the month;
- a report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- a report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and shall 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: Prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall ensure that a portable automatic external defibrillator (AED) is located on-site during construction and operations, and shall implement a program to ensure that workers are properly trained in its use and that the equipment is properly maintained and functioning at all times. During construction and commissioning, the following persons shall be trained in use of the AED and shall be on-site whenever the workers that they supervise are on-site: the Construction Project Manager or delegate; the Construction Safety Supervisor or delegate; and all shift foremen. During operations, all power plant employees shall be trained in use of the AED. 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) exists on-site and a copy of the training and maintenance program for review and approval.

E. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the Sentinel Project 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, any special site factors, and the proximity of population centers and sensitive receptors. (Ex. 200, pp. 4.4-4 to 4.4-5.) In addition, sensitive subgroups such as the young, elderly, and those with existing conditions may be at heightened risk from exposure to emitted pollutants.

The uncontested evidence submitted by Applicant and Staff incorporates these factors in the analysis of record. (11/3/08 RT 11, 30-31; Exs. 1, § 7.12; 12; 18; 54; 106; 200, §4.4; 204.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Risks

The evidence of record chronicles the method used to assess risks posed by hazardous materials. This method included the following elements:

- A review of chemicals, the amounts proposed for on-site use, and a determination of the need and appropriateness of their use.

- Chemicals which would 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 consideration.

- Measures proposed to prevent spills were reviewed and evaluated. 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.

- Measures proposed to respond to accidents were reviewed and evaluated. These measures 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.

[1] The **Worker Safety and Fire Protection** portion of this Decision analyzes the protection of workers from such risks.

- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place. (Ex. 200, pp. 4.4-6 to 4.4-7.)

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, hydraulic fluid, welding gases, lubricants, solvents, paint, and paint thinner. No acutely toxic materials will be used on-site during construction. Hazardous materials will be used or stored during operation only in small quantities.

Appendix A (incorporated in Condition of Certification **HAZ-1** at the end of this section) lists the hazardous materials that will be used and stored on-site. Condition **HAZ-1** prohibits the project owner from using hazardous materials not listed in Appendix A, or storing them in greater quantities than specified, without prior approval of the Energy Commission's Compliance Project Manager. None of these materials, except for aqueous ammonia as discussed below, pose significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, their physical state, and/or their environmental mobility. (Ex. 200, pp. 4.4-2, 4.4-7.)

The project will connect to an existing natural gas pipeline via the installation of a new 1.8 mile-long, 24 inch pipeline which will be constructed, inspected, owned, and operated by SoCal Gas. The project will thus involve the handling – but not storage – of large quantities of natural gas. The evidence 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 (NFPA) Code 85A requires both the use of double-block and bleed valves for gas shut-off and automated combustion controls. These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, air purging of the gas turbines will be required prior to start-up, thereby precluding the presence of an explosive mixture. The safety management plan will address the handling and use of natural gas, and the evidence establishes that it will significantly reduce the potential for equipment failure because of either improper maintenance or human error. (Ex. 200, pp. 4.4-2, 4.4-7 to 4.4-8.)

Finally, the use of aqueous ammonia is necessary to control oxides of nitrogen (NO_x) emissions resulting from natural gas combustion. The evidence of record is in accord that 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. (Ex. 200, p. 4.4-8.) 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.

2. Risk Mitigation

The use of aqueous ammonia rather than anhydrous ammonia significantly reduces off-site risks. Anhydrous ammonia is stored as a liquefied gas at high pressure and could explode in an accidental release, resulting in high downwind concentrations. Aqueous ammonia spills are much easier to contain, and emissions from such spills are limited by the slow mass transfer from the surface of the spilled material. (Ex. 200, pp. 4.4-1 to 4.4-2.)

The Sentinel Project will store aqueous ammonia (in a 29 percent solution) in two above ground tanks, each with a maximum capacity of 12,000 gallons.[2] The secondary containment basin is above ground and capable of holding the full contents of a tank plus rainfall. An underground sump will also hold the entire contents of one tank plus maximum 24-hour rainfall. The tanker truck transfer pad will be contained, and will drain into the subsurface sump. (Ex. 200, pp. 4.4-8.)

To assess the potential impacts associated with an accidental release of aqueous ammonia, the evidence shows that Staff used several benchmark exposure levels of ammonia gas occurring off-site. (Exs. 200, pp. 4.4-8 to 4.4-9; 204.) These include:

a. the lowest concentration posing a risk of lethality, i.e. 2,000 parts per million (ppm);

b. the concentration immediately dangerous to life and health, a level of 300 ppm; and
c. the level of 75 ppm, considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure.

[2] Seismic criteria governing storage tanks is addressed in the **Facility Design** section of the Decision.

If the exposure associated with a potential release exceeds 75 ppm at any public receptor, Staff also assesses the probability of occurrence of the release, the severity of the consequences, and the nature of the potentially exposed population in determining whether the likelihood and extent of exposure would be significant.[3] (Ex. 200, pp. 4.4-8 to 4.4-9, 4.4-27 to 4.4-28.)

In addition, Applicant performed an off-site consequence analysis (OCA) for the worst-case release scenario (involving the failure and complete discharge of a storage tank), as well as an alternative release scenario involving a spill during truck unloading. (Exs. 1, § 7-12; 200, p. 4.4-9; 204.) The evidence establishes that the worst case ammonia release would not result in ambient ammonia concentrations exceeding 75 ppm at the nearest public receptor (about 1,500 feet away; Ex. 200, p. 4.4-9.)

3. Transportation Risk Reduction

The evidence shows that transport of aqueous ammonia poses the predominant risk to off-site receptors. Ammonia can be released during a transportation accident; the extent of impact would depend upon the location of the accident and the rate of dispersion of ammonia 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. (Ex. 200, p. 4.4-11.)

Aqueous ammonia will be delivered to the facility in DOT-certified vehicles with design capacities of 6,500 gallons. These high-integrity vehicles are designed to DOT Code MC-307, and are suitable for hauling caustic materials such as ammonia. Condition of Certification **HAZ-6** ensures that only tankers which meet or exceed these specifications will be used for ammonia deliveries. (Ex. 200, p. 4.4-12.)

Trucks will travel on Interstate 10 to State Route 62 to Dillon Road to the facility access road (Condition **HAZ-7**). The maximum annual use of aqueous ammonia will require about 56 tanker truck deliveries, or about 112 miles of delivery travel, in the project area per year.

[3] Staff's Hazardous Materials Appendix A (Ex. 200, pp. 4.4-27 to 4.4-29) discusses the criteria for ammonia exposure guidelines, their applicability to sensitive populations, and exposure-specific conditions.

U.S. DOT data show that the actual risk of a fatality over the past five years from all modes of hazardous material transportation (rail, air, boat, and truck) is approximately 0.1 in 1,000,000 miles. Staff's transportation risk assessment model shows that there is an annual risk of 11.2 in 1,000,000 for an accident which results in the release of a hazardous material. 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 insignificant. (Ex. 200, p. 4.4-12.)

4. Engineering and Administrative Controls

Engineering controls and administrative controls affect 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) which can prevent a hazardous material spill from occurring, which can limit the spill to a small amount, or which can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow. These are designed to help prevent accidents or keep them small if they do occur. Timely and adequate emergency spill response is also a crucial factor. (Ex. 200, p. 4.4-10.)

The engineered safety features which will be used at Sentinel include:

- Construction of secondary containment areas surrounding each of the hazardous materials storage areas (such as the containment basin required by Condition of Certification **HAZ-4** for aqueous ammonia) designed to contain accidental releases that might happen during storage or delivery plus the volume of fire suppression water associated with 20 minutes of operating;

- Physical separation of stored chemicals in isolated containment areas separated by a noncombustible partition in order to prevent accidental mixing of incompatible materials, which could result in the evolution and release of toxic gases or fumes;

- Installation of both an automatic sprinkler system and an exhaust system for indoor hazardous materials storage areas;

- Construction of bermed containment areas surrounding the aqueous ammonia storage tank and the truck unloading area; and

- Process protective systems including continuous tank level monitors, automated leak detectors, temperature and pressure monitors, alarms, and emergency block valves.

Administrative controls also help prevent accidents and releases (spills) from moving off-site and affecting neighboring communities. These include those required in Conditions of Certification **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume), **HAZ-2** (Risk Management Plan), and **HAZ-3** (development of a safety management plan). (Ex. 200, pp. 4.4-10 to 4.4-11.)

Worker training programs, process safety management programs, and compliance with all applicable health and safety laws, ordinances, and standards will also reduce risks. The worker health and safety program which will be prepared by the project owner 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;

- Fire safety and prevention; and

- Emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention. (Ex. 200, p. 4.4-10.)

In order to address the issue of spill response, the project owner will prepare and implement an emergency response plan 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. Emergency procedures will be established which include evacuation, spill cleanup, hazard prevention, and emergency response.

The Palm Springs Fire Department will be the first responder in the event of an accidental hazardous material release. The Riverside Department of Environmental Health Accident Response Team will provide additional support if

needed. The evidence indicates that these organizations are capable of handling any hazardous materials related incident posed by the Sentinel Project. (Ex. 200, p. 4.4-11.)

5. Site Security

The hazardous materials used by the Sentinel Project are listed by several federal agencies (USEPA, Homeland Security, DOE) in Vulnerability Assessments requiring special site security measures to prevent unauthorized access. (Ex. 200, p. 4.4-14.) The evidence categorizes the Sentinel Project as "medium vulnerability" due to the urban setting and proximity to sensitive receptors. A security plan will be prepared for the proposed facility and will include a description of perimeter security measures and procedures for evacuating, notifying authorities of a security breach, monitoring fire alarms, conducting site personnel background checks, site access, and a security plan and background checks for hazardous materials drivers. Perimeter security measures utilized for this facility may include security guards, security alarms, breach detectors, motion detectors, and video or camera systems. (Exs. 1, § 5.5.4.2.5.; 200, pp. 4.4-14 to 4.4-15.)

In order to ensure that neither this project nor a shipment of hazardous material is the target of unauthorized access, Conditions of Certification **HAZ-8** and **HAZ-9** address both construction security and operation security plans. These plans will require implementation of site security measures which provide for the minimum level of security for power plants necessary for the protection of California's electrical infrastructure from malicious mischief, vandalism, or domestic/foreign terrorist attacks. (Ex. 200, pp. 4.4-14.)

6. Cumulative Risks

Finally, the evidence contains an analysis of potential cumulative impacts. A significant cumulative hazardous materials impact is basically the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact where the release of one hazardous material alone would not cause a significant impact. The evidence establishes that the Sentinel facility poses a minimal risk of an accidental release which could result in off-site impacts. Moreover, it is unlikely that an accidental release, which has a very low probability of occurrence (about one in one million per year), would independently occur at the project and at another facility at the

same time. The evidence thus indicates that Sentinel does not contribute to a significant hazardous materials related cumulative impact. (Ex. 200, p. 4.4-15.)

FINDINGS OF FACT

Based on the uncontroverted evidence of record, the Commission makes the following findings and conclusions:

1. The Sentinel Project will use hazardous materials during construction and operation, including aqueous ammonia and natural gas.

2. The major public health and safety dangers associated with these hazardous materials include the accidental release of aqueous ammonia as well as fire and explosion from natural gas.

3. Staff's independent analysis indicated 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 ammonia release.

4. A concentration of 75 ppm or less of aqueous ammonia will not cause significant impacts. A worst-case catastrophic release of aqueous ammonia from the Sentinel facility will not pose a hazard to the public, nor result in off-site concentrations of greater than 75 ppm.

5. Compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of ammonia will reduce potential risks of accidental release to insignificant levels.

6. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

7. Potential impacts from the other hazardous substances used on-site are not considered significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

8. The project owner will submit an approved Safety Management Plan for handling aqueous ammonia, an approved Hazardous Materials Business Plan, and an approved Risk Management Plan prior to delivery of any hazardous materials to the site.

9. The project owner will ensure that truck deliveries of aqueous ammonia are restricted to the truck delivery route specified in Condition of Certification **HAZ-7**, below.

10. The likelihood of cumulative impacts originating from simultaneous releases of hazardous materials from the Sentinel Project and nearby facilities is statistically remote and considered insignificant.

11. Implementation of the mitigation measures described in the evidentiary record and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

12. With implementation of the Conditions of Certification, below, the Sentinel Project will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

CONCLUSION OF LAW

1. The Commission concludes, therefore, that the use of hazardous materials by the Sentinel Project will not result in any significant adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix A, below, or in greater quantities or strengths than those identified by chemical name in Appendix A, unless approved in advance by the Compliance Project Manager (CPM).

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility.

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) prepared pursuant to the California Accidental Release Program (CalARP) to the Riverside County Department of Environmental Health and the CPM for review. After receiving comments from Riverside County and the CPM, the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the Riverside County Department of Environmental Health for review 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 Business Plan to the CPM for approval. At least 30 days prior to

delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the Certified Unified Program Agency 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 to either the American Society for Material Engineering Pressure Vessel Code and American National Standards Institute K61.6 or to American Petroleum Institute 620. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming a 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basin shall be submitted to the CPM for review and approval.

Verification: At least 60 days prior to the first delivery of aqueous ammonia to the facility, the project owner shall submit final design drawings and specifications for the ammonia storage tank and secondary containment basin to the CPM for review and approval.

HAZ-5 The aqueous ammonia storage tank with secondary containment basin and the bermed tanker truck transfer pad that drains into a subsurface sump shall be used by the project owner. The secondary containment basin shall be certified by the project owner as being capable of holding 125 percent of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming a 25-year storm.

Verification: At least 30 days prior to delivery of aqueous ammonia to the facility, the project owner shall submit the required certification to the CPM for approval.

HAZ-6 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles which meet or exceed the specifications of U.S. Department of Transportation Code MC-307.

Verification: At least 30 days prior to receipt of aqueous ammonia on-site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-7 At least 30 days prior to receipt of any hazardous materials on-site, the project owner shall direct all vendors delivering any hazardous material to the site to travel on Interstate 10 to State Route 62 to Dillon Road to the plant site. The project owner shall obtain approval of the CPM if an alternate route is desired.

Verification: At least 30 days prior to receipt of any hazardous materials on site, the project owner shall submit to the CPM for review and approval copies of notices to hazardous materials vendors describing the required transportation route.

HAZ-8 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

1. perimeter security consisting of fencing enclosing the construction area;
2. security guards;
3. site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on-site or off-site;
5. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
6. evacuation procedures.

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval.

HAZ-9 The project owner shall prepare a site-specific Operation Security Plan for the commissioning and operational phases that will 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 North American Electric Reliability Council 2002).

The Operation Security Plan shall include the following:

1. permanent full perimeter fence or wall, at least 8 feet high;

2. main entrance security gate, either hand-operated or motorized;

3. evacuation procedures;

4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on-site or off-site;

6. two statements, as follows:

   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 site;

7. site access controls for employees, contractors, vendors, and visitors;

8. a statement(s) (refer to sample, **Attachment C**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with Title 49 Code of Federal Regulations 172.880 and that they have conducted employee background investigations in accordance with Title 49 Code of Federal Regulations Part 1572, subparts A and B;

9. closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) and capable of viewing, at a

minimum, the main entrance gate and the ammonia storage tank; and

10. additional measures to ensure adequate perimeter security consisting of either:

    A. security guard(s) present 24 hours per day, 7 days per week;

    OR

    B. power plant personnel on-site 24 hours per day, 7 days per week, and both of the following:

        i. the CCTV monitoring system required in item 9, above, that shall include cameras able to pan, tilt, and zoom; have low-light capability; and are able to view 100 percent of the perimeter fence, the ammonia storage tank, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **and**

        ii. perimeter breach detectors **or** on-site motion detectors.

The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to this security plan. 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 Council, 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 Security Plan is available for review and approval. In the Annual Compliance Report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed and that updated certification statements have been appended to the operations security plan. In the Annual Compliance Report, the project owner shall include a statement that the Operations Security Plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

Hazardous Materials
Appendix A

Hazardous Materials Used at CPV Sentinel

Hazardous Material Usage and Storage

Hazardous Material	Primary Application	Estimated 30-Day Usage	Estimated Storage Quantity[1]	Storage Type
Acetylene	Welding	TBD	TBD	Cylinder
Paint	Painting	TBD	TBD	Can
Aqueous Ammonia (29 percent)	NO_x reduction in SCR	24,000 gallons	24,000 gallons	Aboveground Tank
Sodium Hypochlorite (12.5%, Trade)	Biocide/Biofilm Control (Raw Water Tank, Circulating Water, MF System)	3,100 gallons	4,000 gallons	Aboveground Tank
Sulfuric Acid (93%)	Ph Control (Cooling Tower Makeup, MF System, RO System)	4,200 gallons	5,000 gallons	Aboveground Tank
Dispersant/Corrosion Inhibitor (neat)	Scale/Corrosion Control (Circulating Water)	350 gallons	400 gallons	Aboveground Container
Ferric Chloride (38%)	Coagulant (MF System)	150 gallons	200 gallons	Aboveground Container
Sodium Hydroxide (25%)	Alkalinity Control (MF System)	15,000 gallons	20,000 gallons	Carboy
Sodium Carbonate (99%, solid)	Alkalinity Control (MF System)	40,000 pounds	25 ton	Aboveground Container
Natural gas	Fuel for power plant	As needed	As needed	Pipeline
Mineral Oil	Transformers	123,500 gal, initial fill	123,500 gal	Steel Drum
Sulfur Hexafluoride	Switchyard breakers	600 lbs	600 lbs	Within Equipment
Turbine & Generator Lube Oil	Rotating equipment	50,000 gal	50,000 gal	Steel Drum
Hydraulic Oil	Rotating equipment	500 gallons	500 gallons	Steel Drum

Hazardous Material Usage and Storage

Hazardous Material	Primary Application	Estimated 30-Day Usage	Estimated Storage Quantity[1]	Storage Type
Hydraulic Fluid	Construction vehicles and equipment	10 gal/week	250 gallons	Drums inside secondary containment
Transmission Fluid	Construction vehicles and equipment	5 gal/week	250 gallons	Drums within secondary containment
Unleaded gasoline	Construction vehicles	300 gal/week	500 gallons	Tank with secondary containments
Motor Oil	Construction vehicles and equipment	5 gal/week	250 gallons	Drums inside secondary containment
Propane		200 lb/month	400 lbs	Cylinder
Propylene-glycol	Auxiliary cooling Closed Cooling water system	As needed	60,000 gallons Initial fill	Closed cooling water system.
Non-oxidizing biocide	Biocide for cooling system	As needed	5 gallons	Manufacturer standard bucket/drum/tote inside secondary containment
Dryer Desiccant	Instrument air	600 lb/3-5 years	600 lb.	Instrument air dryer
Various detergents	Combustion turbine cleaning	1,000 lbs, before startup; Periodic short-term storage 500 lbs	1,000 lbs	Manufacturer Container
Dryer desiccant	Instrument air	600 lbs	600 lbs	Instrument air dryer
Diesel fuel	Fire water pump	180 gal, initial fill	Maintain full diesel tank	Tank
Diesel fuel	Black Start Generator	1,300 gal, initial fill	Maintain full diesel tank	Tank
Magnesium Sulfate (30%)	Silica Removal (MF System)	2,900 gallons	3,500 gallons	Tank

Hazardous Material Usage and Storage

Hazardous Material	Primary Application	Estimated 30-Day Usage	Estimated Storage Quantity[1]	Storage Type
Hydrochloric Acid (38%)	MF Membrane Cleaning	300 gallons	400 gallons	Tank
Antiscalant (neat)	RO System	20 gallons	25 gallons	Manufacturer standard bucket/drum/tote inside secondary containment
Sodium Bisulfite (38%)	Dechlorination (RO System)	310 gallons	400 gallons	Manufacturer standard tote inside secondary containment
Polymer Thickening Aid (neat)	Gravity Thickener (MF System)	2 gallons	5 gallons	Manufacturer standard bucket/drum/tote inside secondary containment
RO Membrane Cleaners (neat)	RO System	2 gallons	5 gallons	Manufacturer standard bucket/drum/tote inside secondary containment
	Waste	TBD	TBD	Steel Drum
	Waste	TBD	TBD	Steel Drum
	Waste	TBD	TBD	Steel Drum
	Waste	TBD	TBD	Steel Drum

Notes: 1. Expected based on 107° F operation condition. Usage and storage will be optimized during final design.

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.

F. WASTE MANAGEMENT

The Sentinel Project will generate nonhazardous and hazardous wastes during construction and operation. This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous and hazardous wastes.

Nonhazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.)

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).[1] State law requires hazardous waste generators to obtain U.S. EPA identification numbers and contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

The evidence presented on this topic was undisputed. (Ex. 19; Ex 55; Ex. 120; Ex. 200, p. 4.13-1 et seq.; 11/03/08 RT 13, 22.) Compliance with applicable LORS will ensure that the handling and management of project-related wastes do not result in significant adverse impacts to workers, the public, or the environment. (Ex. 200, p. 4.13-1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Excavation

As described previously in this Decision, the Sentinel Project will be located on a 37-acre site in unincorporated Riverside County about 1.3 miles east of State Route 62, 1.7 miles north of I-10, and 1.3 miles west of Indian Avenue. The site is currently vacant, with the exception of an unoccupied dwelling unit and garage at the southeastern corner of the site. The surrounding area is characterized by industrial use with extensive development of wind energy facilities and transmission lines. (Ex. 19, p. 7.13-1; Ex. 200, p. 4.13-6.)

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[1] California Health and Safety Code, Section 25100 et seq. (Hazardous Waste Control Act of 1972, as amended) and Title 22, Cal. Code Regs., Section 66261.1 et seq.

For any proposed power plant, the project proponent must provide documentation of actual or potential soil or water contamination at the site and along the linear corridors. The certification process requires a Phase I Environmental Site Assessment (ESA) to provide the history of the use of the site and a list of hazardous waste releases within a certain distance of the site and linear corridors. If there is reasonable potential that the site or linear corridors contain hazardous waste, a Phase II ESA must be conducted to analyze the contamination and to establish a remediation plan. (Ex. 200, pp. 4.13-6 to 4.13-8.)

Applicant submitted a Phase I ESA in accordance with the American Society for Testing and Materials Standard Practice E 1527-00 for ESAs. (Ex. 19, pp. 7.13-1 and 7.13-2; Ex. 55; Ex. 200, p. 4.13-8.) The Phase I ESA, which was completed in August 2006, found recognized environmental concerns (RECs) at the site caused by past residential property use and oil/gas exploration activities.[2] Consequently, Applicant conducted a Phase II "Baseline Investigation" ESA, which was completed in February 2007. (Ex. 55.)

The Phase II ESA tested the soils and groundwater at the site for the presence of pesticides, herbicides, volatile and semi-volatile organic compounds, polychlorinated biphenyls, and metals.[3] Results of the Phase II ESA identified detectable concentrations of metals and chemical compounds in the soils and detectable concentrations of metals in the groundwater. (Ex. 19, pp. 7.13-2 and 7.13-3; Ex. 55.) To prevent worker exposure to contaminated soils and groundwater during construction, Conditions of Certification **WASTE-1** and **WASTE-2** require the project owner to employ a professional geologist or engineer to oversee construction activities that may disturb contaminated areas and to ensure compliance with the handling and disposal of contaminated materials.

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[2] A recognized environmental condition is the presence or likely presence of any hazardous substances or petroleum products 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 site or in the ground, groundwater, or surface water of the site. (Ex. 200, p. 4.13-9.)

[3] The testing consisted of the following analyses: volatile organic compounds (VOCs) using EPA Method 8260B; semi-volatile organic compounds (SVOCs) using EPA Method 8270C; California Assessment Manual (CAM) 17 metals using EPA Methods 6020 and 7471A; polychlorinated biphenyls (PCBs) using EPA Method 8082; organochlorine pesticides using EPA Method 8081A; and chlorinated herbicides using EPA Method 8151A. (Ex. 200, p. 4.13-8; Ex. 21, p. 7.13-2 et seq.; Ex. 55.)

The Phase II ESA also identified materials in the onsite buildings that could contain lead-based paint (LBP) or asbestos-containing materials (ACM). (Ex. 200, p. 4.13-8; Ex. 19, p. 7.13-3.) Conditions **WASTE 1** and **WASTE-2** require that the buildings be surveyed for the presence of hazardous materials including LBP, ACM, mercury, and polychlorinated biphenyls (PCBs) prior to removal and that all hazardous wastes be disposed of in accordance with applicable LORS.

In addition, the Phase II ESA noted the existence of an abandoned oil or gas well near the site dating from the 1920s. No documentation identifying the location of the well was available nor could it be located by an onsite geophysical survey. Thus, the potential for petroleum hydrocarbon or heavy metal contamination associated with the well is not known. (Ex. 200, p. 4.13-9.) Condition **WASTE-3** requires the project owner to ensure proper abandonment of the well according to applicable regulatory procedures if it is encountered during construction or operation of the project.

The oil and groundwater sampling reports in the ESAs did not include the project's linear facility corridors. (Ex. 200, p. 4.13-9.) Condition **WASTE-4** requires the project owner to complete a Phase I ESA for the natural gas and water pipeline corridors prior to beginning construction.

2. Construction

Site preparation and construction of the power plant and its associated facilities will generate both nonhazardous and hazardous wastes in solid and liquid forms (Ex. 200, p. 4.13-10.) Condition **WASTE-5** requires the project owner to develop and implement a Construction Waste Management Plan that identifies all waste streams and the methods of managing each waste. Condition **WASTE-6** requires the project owner to report construction or operation spills or releases of hazardous substances and to remediate these spills or releases as required by applicable LORS.

a. Nonhazardous Wastes

Project construction will generate nonhazardous solid waste products including wood, concrete, metal, paper, glass, and plastic. All non-hazardous wastes will be recycled to the extent possible and non-recyclable wastes will be collected by a licensed hauler and deposited at appropriate disposal facilities pursuant to

California Integrated Waste Management Board regulations.[4] (Ex. 200, p. 4.13-10.)

Non-hazardous liquid wastes will also be generated during construction, including sanitary waste, storm water runoff, pipe hydrotesting, and equipment wash water. Sanitary waste will be collected in portable, self-contained toilets and pumped periodically for disposal at an appropriate facility. Potentially contaminated equipment wash water and hydrotesting water will be containerized and stored at designated areas until transported to a sanitary wastewater treatment facility. Storm water will be managed in accordance with a site-specific Stormwater Pollution Prevention Plan as discussed in the **SOIL AND WATER RESOURCES** section of this Decision. (Ex. 200, p. 4.13-10.)

b. Hazardous Wastes

Condition **WASTE-8** requires the project owner to obtain a U.S. EPA hazardous waste generator identification number prior to generating hazardous wastes.

Hazardous wastes expected during construction include empty hazardous material containers, solvents, waste paint, welding materials, oil absorbents, used oil, oily rags and absorbent, batteries, and cleaning wastes. These wastes will be recycled, if feasible. Wastes that are not recycled will be accumulated onsite for less than 90 days in appropriate containers and transported to a permitted hazardous waste management facility by licensed hazardous waste collection and disposal companies in accordance with applicable law. (Ex. 200, p. 4.13-10 and 4.13-11; Ex. 19, p. 7.13-5.) Condition **WASTE-7** requires the project owner to notify the Compliance Project Manager (CPM) within 10 days of becoming aware of any impending waste management-related enforcement action.

3. Operation

Condition **WASTE-9** requires the project owner to develop and implement an Operation Waste Management Plan to identify all waste streams and the methods of managing each waste. (Ex. 200, p. 4.13-11.)

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[4] Title 14, Cal. Code. Regs., Section 17200 et seq.

a. Nonhazardous Wastes

Nonhazardous solid wastes will include scrap metal and plastic, paper, glass, empty containers, sludge and salt cake deposits from the Zero Liquid Discharge (ZLD) system, and used equipment parts from maintenance activities. Most of these wastes will be recycled, where feasible, or disposed of at a Class III landfill. (Ex. 19, p. 7.13-6; Ex. 200, p. 4.13-11.) Condition **WASTE-10** requires the project owner to analyze ZLD solids to determine whether the solids are hazardous or nonhazardous and to ensure disposal at an appropriate landfill.

Nonhazardous liquid wastes include storm water runoff, sanitary wastewater, and combustion turbine generator (CTG) wash water. Storm water runoff and sanitary waste disposal are discussed in the **Soil and Water Resources** section of this Decision. The onsite septic tank will handle sanitary wastes in compliance with the requirements of Riverside County's Department of Health and Human Services Environmental Health Division. CTG wash water will be tested and delivered to a Class I landfill if found to be hazardous. Otherwise, the wash water can be routed to the onsite retention basin and allowed to percolate, contributing to groundwater recharge. (Ex. 200, pp. 4.13-11 and 4.13-12; Ex. 19, pp. 7.13-6 and 7.13-7.)

b. Hazardous Wastes

Hazardous wastes generated during routine project operation will include used hydraulic fluids, oils, greases, oily filters and rags, spent selective catalytic reduction catalyst, cleaning solutions and solvents, and batteries. (Ex. 19, p. 7.13-7; Ex. 200, p. 4.13-12.)

The amounts of hazardous wastes generated during operation are considered modest, with source reduction and recycling of wastes implemented whenever possible. Hazardous wastes will be temporarily stored onsite and transported by licensed hazardous waste haulers for recycling or disposal at authorized disposal facilities in accordance with established standards applicable to generators of hazardous waste. (Ex. 200, p. 4.13-12.) See additional discussion on hazardous materials management in the **Hazardous Materials Management** and **Worker Safety and Fire Protection** sections of this Decision. Spills and releases of hazardous wastes must be managed in accordance with applicable LORS as required by Condition **WASTE-6**. Waste management enforcement actions must be reported as required by Condition **WASTE-7**.

4. Potential Impacts on Waste Disposal Facilities

Approximately 3,816 cubic yards of non-recyclable solid waste will be generated during construction and approximately 33,870 cubic yards during the project's lifetime operation. The evidentiary record identifies two Class III nonhazardous waste disposal facilities in Riverside County, Lamb Canyon and Badlands Landfills, which are available to handle the project's nonhazardous solid waste. (Ex. 200, p. 4.13-13.)

The total amount of nonhazardous solid waste generated during construction and operation will contribute less than one percent to the permitted remaining capacity of either Lamb Canyon or Badland Landfill. The estimated closure date of these landfills is within 8 to 15 years. According to Staff, additional Class III landfills in Riverside County are expected to be licensed within the next 15 years. Therefore, the record supports a finding that disposal of the project's solid wastes will not significantly impact the capacity or remaining life of these landfill facilities. (Ex. 200, p. 4.13-13.)

Hazardous solid waste generated by the project will be reduced through source reduction and recycled when possible. Non-recyclable solid hazardous waste would be disposed of at a Class I landfill. Approximately 306 cubic yards of non-recyclable solid hazardous waste will be generated during construction and approximately 360 cubic yards during the lifetime operation of the project. The evidentiary record identifies two Class I landfills that could potentially receive these hazardous solid wastes: Buttonwillow in Kern County and Kettleman Hills in Kings County. (Ex. 200, pp. 4.13-13 to 4.13-14, Table 4; Ex. 19, p. 7.13-8 et seq.)

The evidence indicates that the total amount of hazardous waste generated from project construction and operation constitutes less than one percent permitted capacity of either one of the Class I landfills and will not significantly impact the capacity or remaining life of these facilities. (Ex. 200, p. 4.13-14.)

5. Cumulative Impacts

The amount of nonhazardous and hazardous wastes generated by the project will add to the total quantity of waste generated in the State of California. However, project wastes will be generated in modest quantities, recycling will be employed wherever practical, and sufficient capacity is available to handle the volumes of wastes generated by the project. Therefore, the incremental amount

of waste generated by project will not result in significant cumulative waste management impacts. (Ex. 200, p. 4.13-14.) To ensure oversight of the project's waste management practices, Condition **WASTE-11** requires the project owner to submit annual compliance reports to the CPM.

There is no evidence that waste management will result in significant adverse impacts to minority or low-income populations since any potential adverse waste management impacts will be mitigated to insignificant levels. (Ex. 200, p. 4.13-14.)

PUBLIC COMMENT

No public comment was received regarding **Waste Management**.

FINDINGS OF FACT

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

1. The Phase I Environmental Site Assessment (ESA) found recognized environmental concerns at the site caused by past residential property use and oil/gas exploration.

2. The Phase II ESA identified detectable concentrations of metals and chemical compounds in the soils and detectable concentrations of metals in the groundwater.

3. The Project Owner will implement appropriate characterization, disposal, and remediation measures to ensure that if suspect soils or other hazardous materials are discovered during earth moving activities, any risk of exposure to the contaminated materials will be reduced to insignificant levels.

4. The Project Owner will complete a Phase I ESA for the Project's linear corridors prior to construction.

5. The Project will generate nonhazardous and hazardous wastes during site excavation, construction, and operation.

6. The Project will recycle nonhazardous and hazardous wastes to the extent feasible and in compliance with applicable law.

7. Hazardous wastes that cannot be recycled will be transported by registered hazardous waste transporters to appropriate Class I landfills.

8. Solid nonhazardous wastes that cannot be recycled will be deposited at Class II and III landfills in the local area.

9. Liquid wastes will be classified for appropriate disposal and stormwater runoff will be managed in accordance with the Stormwater Pollution Prevention Plan and the Drainage, Erosion, and Sedimentation Control Plan described in the **SOIL AND WATER RESOURCES** section of this Decision.

10. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities.

CONCLUSIONS OF LAW

The Commission therefore concludes that the Conditions of Certification, below, and the waste management practices described in the evidentiary record will reduce potential impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner. Further, the management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the CPM for review and approval. The resume shall show experience in identification of hazardous materials, contaminated soils, and remedial investigation and feasibility studies. The Registered Professional Engineer or 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-2 If potentially hazardous material or contaminated soil is identified during project construction or operation at the proposed site or natural gas and water pipeline corridors as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of the hazardous material or contamination soil, and file a written report to the project owner, appropriate regulatory agency, and CPM stating the recommended course of action.

The Registered Professional Engineer or 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 Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the Riverside County Department of Environmental Health for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the Registered Professional Engineer or 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-3 If an abandoned well is located during construction or operation, the project owner shall comply with Division of Oil, Gas, and Geothermal Resources (DOGGR) procedures for abandonment of an orphaned oil or gas wells and CCR Title 14, Division 2. The project owner shall also submit to the DOGGR, in writing: (1) a detailed description of the status of the oil/gas well; (2) an explanation of the results of the visual site survey and geophysical survey; and (3) a request, in accordance with DOGGR requirements to certify the well has been properly abandoned.

Verification: A copy of the project owner's written submittal to the DOGGR and a copy of the DOGGR response indicating the well has been properly abandoned shall be forwarded to the CPM within ten days of submittal and receipt of response.

WASTE-4 The project owner shall conduct a Phase I ESA along the proposed natural gas and water pipeline corridors before construction begins. This Phase 1 ESA shall be conducted in accordance with ASTM Standard Practice E 1527-00 or other acceptable method for ESAs. A report documenting the result of the Phase I ESA shall be submitted to the CPM. IF any RECs are indentified, the project owner shall coordinate with the CPM and identify appropriate mitigation measures and ensure all concerns are addressed prior to commencement of construction in the affected areas.

Verification: The project owner shall submit to the CPM a copy of the Phase I ESA within 30 days of completion of the Phase I ESA and 60 days before construction begins.

WASTE-5 To manage construction generated waste; the project owner shall develop and implement a Construction Waste Management Plan before beginning construction. The Construction Waste Management Plan shall include detailed information about how

construction generated waste would be managed from the time it was generated to the time it is recycled or land filled. The plan shall contain, at a minimum, the following:

- A description of all construction waste streams, including projections of frequency, amounts generated, and hazard classifications;
- Procedures for handling contaminated soil or water that could be encountered during construction; and
- Management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.

Verification: The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site.

WASTE-6 The project owner shall ensure that spills or releases of hazardous substances, hazardous materials, or hazardous wastes associated with the construction or operation of the project are reported, delineated, cleaned-up, and remediated as necessary, under the supervision of a California Professional Geologist or Engineer and in accordance with the requirements of the Riverside County Department of Environmental Health. This responsibility excludes construction, operation, and maintenance of the transmission lines, which will be installed, operated, and maintained by Southern California Edison.

Verification: The project owner shall document unauthorized spills or releases of hazardous substances, materials, or wastes that occur on the project property or related pipeline 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 be generated by the release. Copies of the unauthorized spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

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 project 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 would be required in the way project-related wastes are managed.

WASTE-8 The construction contractor or project owner shall obtain a hazardous waste generator identification number from the U.S. EPA prior to generating any hazardous waste during construction and operations in accordance with CCR Title 22, Division 4.5.

Verification: The construction contractor or project owner shall keep a copy of the identification number on file at the project site and provide the number to the CPM in all compliance reports.

WASTE-9 The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility, and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- Management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- Information and summary records of conversations with the 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, notices, and/or authorizations shall be included in the plan and updated as necessary;
- A detailed description of how facility wastes would be managed, and any contingency plans to be employed, in the event of a unplanned closure or planned temporary facility closure; and
- A detailed description of how facility wastes would be managed and disposed upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to the DTSC and RWQCB (copy 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 DTSC and RWQCB (copy to the CPM) within 20 days of notification from the CPM that revisions are necessary.

WASTE-10 At a minimum, the project owner shall conduct annual analyses of the solids residue from the ZLD process to determine if the solids are hazardous or non-hazardous and ensure appropriate disposal of the solids residue. The project owner shall also conduct analyses of the ZLD solids after any change in water supply to determine if the solids are hazardous or non-hazardous.

Verification: The project owner shall submit to the CPM a copy of documentation showing appropriate disposal of the ZLD solids within ten days of the disposal.

WASTE-11 The project owner shall submit annual compliance reports to the CPM documenting the annual volumes of wastes generated and the method used to manage the waste generated, such as recycling or disposal. If such waste are disposed of offsite, the disposal facility(s) name and address shall be included in the report.

Verification: 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. The annual compliance report shall include a comparison of the actual waste generation and management methods used as compared to those proposed in the original Operation Waste Management Plan. The Operation Waste Management Plan shall be updated as necessary to address current waste generation and management practices

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other topics of biological concern such as unique habitats. The review contained in the record describes the biological resources in the vicinity of the project site and linear facilities, assesses the potential for adverse impacts, and determines what measures are necessary to mitigate impacts and ensure compliance with applicable laws, ordinances, regulations, and standards (LORS). (Ex. 8, 40, 61,103, 200, 203; 11/3/08 RT 26:-21, 31: 4-5.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Vicinity Description

The CPV Sentinel Project area is located in unincorporated Riverside County, California, just north of the City of Palm Springs and immediately west of the City of Desert Hot Springs. Regionally, the area is known as the Coachella Valley, a broad, low elevation valley comprising the westernmost limits of the Sonoran Desert. The valley extends for approximately 45 miles in Riverside County, southeast from the San Bernardino Mountains to the Salton Sea. The project site is located in the northwest portion of the Coachella Valley. Portions of the laydown area, gas line route, and recycled water pipeline will be located within the City of Palm Springs. (Ex. 200, p. 4.2-5.)

The project area consists of the CPV Sentinel site and all associated linear facilities. The 37-acre CPV Sentinel site is currently disturbed vacant land located east of State Route (SR) 62, north of Interstate 10 (I-10), and west of Indian Avenue, with Powerline Roads North and South running along the south side of the property. The CPV Sentinel site is located approximately 700 feet east of the Southern California Edison (SCE) Devers Substation and 1.8 miles northwest of the Indigo Energy Facility. The project components include a 2,300 foot transmission interconnection to SCE Devers Substation, 2.6 miles of new natural gas pipeline (24-inch diameter), a new access road (3,200 feet) connecting the site to Dillon Road, a new potable water supply line (3,200 feet), eight natural gas-fired GE Energy LMS100 combustion turbine generators (13.5

feet in diameter and 90 feet tall), and a 14-acre construction lay down area. In addition, a 900-foot recycled water pipeline (12-inch diameter) will connect from an existing Desert Water Authority service main to the Palm Springs National Golf Course, approximately 10 miles south of the CPV Sentinel site. (Ex. 200, p. 4.2-6.)

2. Habitats and Wildlife

The most common vegetation community in the project area is Sonoran creosote bush scrub. This community is dominated by creosote (*Larrea tridentata)* shrubs with annual grasses in the understory and in open areas. Species commonly observed in the project area include white bursage (*Ambrosia dumosa*), teddy bear cholla (*Cylindropuntia bigelovii*), barrel cactus (*Ferocactus cylindraceus*), pencil cholla (*Opuntia ramossima*), California buckwheat (*Eriogonum fasciculatum*), and smoke tree (*Psorothamnus schotti*). (Ex. 200, p. 4.2-7.)

Scattered ornamental and ruderal species include eucalyptus (*Eucalyptus sp*.), Russian olive (*Elaeagnus angustifolia*), and tamarisk (*Tamarix sp.).* (Ex. 200 p. 4.2-7).

Common bird species observed during the various reconnaissance and protocol surveys include common raven (*Corvus corax*), Say's phoebe (*Sayornis saya*), house finch (*Carpodacus mexicanus*), and American kestrel (*Falco sparverius*). In addition, several desert woodrat (*Neotoma lepida*) middens were observed at the bases of creosote shrubs and around cactus bases, as well as Side-blotched lizards (*Uta stansburiana*) and Great Basin whiptails (*Cnemidophorus tigris tigris*). Evidence of Coyote (*Canis latrans*) and black-tailed jackrabbit (*Lepus californicus*) is also present near the site. (Ex. 200, p. 4.2-7.)

A 14-acre construction laydown area will be located south of Powerline Road and 16th Avenue and will include temporary construction offices, parking, equipment storage, and material storage areas. Habitat within the construction laydown area is consistent with the project area; disturbed Sonoran creosote bush scrub dominated by creosote shrubs intermixed with white bursage, teddy bear cholla, and barrel cactus. Several decommissioned wind power generation units are lying on the ground with a few larger, operational units in the remaining portion of the laydown area. Roads, pads, and equipment storage areas for the wind farm exist within the area. (Ex. 200, p. 4.2-7.)

The gas transmission corridor is also vegetated by disturbed Sonoran creosote scrub habitat. The corridor generally follows existing roads, other gas pipeline corridors, and access roads for wind energy farms. Grading, fences, buildings, roads and roadsides, and vehicle traffic appear along the corridor. (Ex. 200, p. 4.2-7.)

Garnet Wash runs approximately 2,750 feet west of the southern terminus of the gas transmission corridor. Garnet Wash is a regionally large and biologically important jurisdictional drainage that is a critical habitat for the Coachella Valley fringe-toed lizard (*Uma inornata*). The portion of Garnet Wash closest to the project area is dry except after rain events; the vegetation and habitat in this portion of the wash resemble the surrounding desert. This area at Garnet Wash comprises the only potential habitat for Coachella Valley fringe-toed lizards of all the surveyed areas; but, it is not prime or favorable habitat. (Ex. 200, p. 4.2-8.)

3. Special Status Species

Biological Resources Table 1 lists special-status species that are known to occur or could potentially occur in the project area and vicinity.

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Biological Resources Table 1
Special-Status Species Potentially Occurring in Project Area

Scientific Name	Common Name	Listing Status*		
		Federal	State	Other
Invertebrates				
Stenopelmatus cahuilaensis	Coachella Valley Jerusalem cricket	----	----	CVMSHCP
Macrobaenetes valgum	Coachella Valley giant sand treader cricket	----	----	CVMSHCP
Reptiles				
Crotalus ruber ruber	northern red-diamond rattlesnake	----	SC	
Phrynosoma coronatum blainvillei	coast (San Diego) horned lizard	----	SC	
Phrynosoma mcallii	flat-tailed horned lizard	----	SC	CVMSHCP
Uma inornata	Coachella Valley fringe-toed lizard	T	E	CVMSHCP
Gopherus agassizii	desert tortoise	T	T	CVMSHCP
Amphibians				
NONE IDENTIFIED				
Birds				
Athene cunicularia	burrowing owl	----	SC	CVMSHCP
Vireo bellii pusillus	least Bell's vireo	E	E	CVMSHCP
Falco mexicanus	prairie falcon	----	----	
Toxostoma lecontei	Le Conte's thrasher	----	SC	CVMSHCP
Falco peregrinus anatum	American peregrine falcon	----	E/FP	
Lanius ludovicianus	loggerhead shrike	----	SC	
Eremophila alpestris actia	California horned lark	----	----	
Toxostoma crissale	crissal thrasher	----	----	CVMSHCP
Asio flammeus	short-eared owl	----	SC	
Aquila chrysaetos	golden eagle	----	FP	
Buteo regalis	ferruginous hawk	----	----	
Circus cyaneus	northern harrier	----	SC	
Falco columbarius	merlin	----	----	
Accipiter cooperii	Cooper's hawk	----	----	
Buteo jamaicensis	red-tailed hawk	----	----	
Mammals				
Chaetodipus fallax fallax	northwestern San Diego pocket mouse	----	SC	
Chaetodipus fallax pallidus	pallid San Diego pocket mouse	----	SC	
Perognathus longimembris bangsi	Palm Springs pocket mouse	----	SC	CVMSHCP
Spermophilus tereticaudus var. chlorus	Palm Springs round-tailed ground squirrel	C	SC	CVMSHCP
Ovis canadensis nelsoni	Nelson's bighorn sheep	E	T/FP	
Ovis canadensis nelsoni DPS	peninsular bighorn sheep	E	T/FP	CVMSHCP

Scientific Name	Common Name	Listing Status*		
		Federal	State	Other
Nyctinomops macrotis	big free-tailed bat	----	SC	
Macrotus californicus	California leaf-nosed bat	----	SC	
Choeronycteris mexicana	Mexican long-tongue bat	----	SC	
Antrozous pallidus	pallid bat	----	SC	
Nyctinomops femorosaccus	pocketed free-tailed bat	----	SC	
Euderma maculatum	spotted bat	----	SC	
Myotis velifer	cave myotis	----	SC	
Corynorhinus townsendii	Townsend's big-eared bat	----	SC	
Eumops perotis	western mastiff bat	----	SC	
Plants				
Abronia villosa var. aurita	chaparral sand-verbena	----	----	CNPS 1B
Astragalus lentiginosus var. coachellae	Coachella Valley milk-vetch	E	----	CNPS 1B CVMSHCP
Astragalus tricarinatus	triple-ribbed milk-vetch	E	----	CNPS1B CVMSHCP
Chorizanthe xanti var. leucotheca	white-bracted spineflower	----	----	CNPS 1B
Euphorbia misera	cliff spurge	----	----	CNPS 2
Linanthus maculatus	Little San Bernardino Mtns. linanthus	----	----	CNPS 1B CVMSHCP
Nemacaulis denudata var. gracilis	slender woolly-heads	----	----	CNPS 2
Erigeron parishii	Parish's Daisy	----	----	CNPS 1B
Ayenia compacta	ayenia	----	----	CNPS 2
Chamaesyce arizonica	Arizona spurge	----	----	CNPS 2
Selaginella eremophila	desert spike-moss	----	----	CNPS 2
Xylorhiza cognata	Mecca-aster	----	----	CNPS 1B

***Status Legend: E** = listed Endangered; **T** = listed Threatened; **SC** = Species of Concern (only applies to State, no longer a Federal category); **FP** = fully protected (state category); **C** = Candidate for Listing; **California Native Plant Society** (**CNPS**) List, CNPS list is for plants only: **List 1B** = Rare, threatened or endangered in California and elsewhere; **List 2** = Rare, threatened or endangered in California, more common elsewhere; **CVMSHCP** = included in the Coachella Valley Multiple Species Habitat Conservation Plan. (Ex. 200, p. 4.2-9.)

In addition to the special-status species listed above, a search of the California Natural Diversity Database (CNDDB) and the Coachella Valley Multiple Species Habitat Conservation Plan (CVMSHCP) revealed the presence of two sensitive vegetation communities in the vicinity of the project area: mesquite bosque and mesquite hummocks. These vegetation communities do not occur in the project area, but could be directly impacted by the use of groundwater by the project. (Ex. 200, p. 4.2-10.)

A lack of suitable, natural habitat in the project area reduces the likelihood of occurrence for the majority of these species. However, within the project area and vicinity, records exist for the occurrence of suitable habitat for several special-status plants (i.e., Coachella valley milk-vetch [*Astragalus lentiginosus var. coachellae*] and triple-ribbed milk-vetch [*Astragalus tricarinatus*]), and wildlife species (i.e., Coachella Valley fringe-toed lizard, flat-tailed horned lizard [*Phrynosoma mcallii*], desert tortoise [*Gopherus agassizii*], and burrowing owl [*Athene cunicularia*]). Nevertheless, the evidence shows that no special-status species were found during reconnaissance or protocol surveys for the project area and gas pipeline route between February 26, 2007 and March 28, 2008. (Ex. 200, p. 4.2-8.)

4. Sensitive Habitats

a. Critical Habitat

Critical habitat is a term defined by the federal Endangered Species Act that refers to areas designated by the U.S. Fish and Wildlife Service (USFWS) that are essential for the conservation of threatened or endangered species and may require special management and protection. USFWS has designated critical habitat in Riverside County for a number of special status species, including Coachella Valley fringe-toed lizard and desert tortoise. Both species are also included under the CVMSHCP. Although the project occurs within the boundaries of the CVMSHCP it does not fall within any of the 21 Conservation Areas or the 6 Reserve Management Units identified within the plan. Additionally, the project does not require permits from any of the signatories to the CVMSHCP. (Ex. 200, pp. 4.2-10 to 4.2-11.)

The nearest Critical Habitat Unit (CHU) for the Coachella Valley fringe-toed lizard is located within Garnet Wash, approximately 2,750 feet east of the gas transmission corridor. The closest CHU for the desert tortoise is over 5 miles northeast of the project area within Joshua Tree National Park, designated as a Desert Wildlife Management Area (DWMA) by USFWS in 1994. Due to a lack of suitable habitat, neither the Coachella Valley fringe-toed lizard nor desert tortoise is likely to occur in the project area. (Ex. 200, pp. 4.2-10 to 4.2-11.)

b. Aquatic and Riparian Habitat

There were no U.S. Army Corps of Engineers or State jurisdictional wetland habitats identified within or near the project area, linear facilities, or construction laydown areas. No other aquatic resources occur within the project area. (Ex. 200, p. 4.2-11.)

The nearest jurisdictional aquatic resource occurs in Garnet Wash at the intersection of Karen Avenue and 19th Avenue, approximately 2,750 feet east of the southern end of the gas transmission corridor. Vegetation within the wash includes cheesebush (*Hymenoclea salsola*), indigobush (*Psorothamnus aborescens*), desert almond (*Prunus fasiculata*), and joint-fir (*Ephedra californica*). (Ex. 200, p. 4.2-11.)

c. Other Sensitive Habitats

Mesquite bosque is an open to fairly dense, drought-deciduous streamside riparian forest found along floodplains of streams and rivers, often dominated by screwbean mesquite (Prosopis pubescens). Within the CVMSHCP planning area, the mesquite bosque community is found along the eastern shore of the Salton Sea, over 50 miles from the project location. Also, the CNDDB identified a small mesquite bosque population over 5 miles north of the project area and another approximately 3 miles to the northeast. Both of these populations of mesquite bosque occurs up-gradient of the CPV Sentinel site. Therefore, neither population is expected to be impacted by the use of groundwater by the project. (Ex. 200, pp. 4.2-11 to 4.2-12.)

Mesquite hummocks are composed of large clumps of low-growing honey mesquite (*Prosopis glandulosa*) shrubs that form hummocks (small sediment mounds) over sand dunes or on level terrain. This habitat occurs in areas with high soil moisture or springs and is often associated with fault areas. The CVMSHCP has identified mesquite hummocks for conservation in 8 of the 21 proposed Conservation Areas, including the Willow Hole Conservation Area occurring within the Mission Creek Groundwater Sub-basin. The Willow Hole Conservation Area has the largest concentration of mesquite hummocks in the CVMSHCP and is located down gradient approximately 5 miles southeast from the CPV Sentinel site, approximately 2 miles southeast of the CPV Sentinel gas line, and 3 miles southeast of the project groundwater pumping region. (Ex. 200, p. 4.2-12.)

Mesquite hummocks were historically widespread throughout the Coachella Valley, but are now restricted in range due to groundwater pumping for agriculture and urban development. It is estimated that mesquite hummocks have been reduced by almost 90 percent since 1939, from 8,300 acres to 870 acres by 1998. Many of the remaining occurrences are highly fragmented and often senescent (*e.g.,* mature and with limited or no seedlings, saplings, or young shrubs). This apparent inability to reproduce successfully is likely the result of changes in soil moisture and water table declines, which make it difficult for seedlings to establish. (Ex. 200, p. 4.2-12.)

The mesquite hummocks that rely on the groundwater within the Mission Creek Groundwater Sub-basin are likely the most ecologically important in the Coachella Valley. This habitat is considered valuable for the direct benefits to the various protected species it supports. A comprehensive list of the special-status species that benefit from mesquite hummocks is provided below in **Biological Resources Table 2**. (Ex. 200, p. 4.2-12.)

Biological Resources Table 2
Special-Status Species Benefiting from Mesquite Hummocks

Scientific Name	Common Name	Listing Status*		
		Federal	State	Other
Invertebrates				
Macrobaenetes valgum	Coachella Valley Giant Sand Treader Cricket	----	----	CVMSHCP
Reptiles				
Uma inornata	Coachella Valley fringe-toed lizard	T	E	CVMSHCP
Birds				
Toxostoma lecontei	Le Conte's thrasher	----	SC	CVMSHCP
Toxostoma crissale	crissal thrasher	----	----	CVMSHCP
Mammals				
Perognathus longimembris bangsi	Palm Springs pocket mouse	----	SC	CVMSHCP
Spermophilus tereticaudus var. chlorus	Palm Springs round-tailed ground squirrel	C	SC	CVMSHCP
Plants				
Astragalus lentiginosus var. coachellae	Coachella Valley milk-vetch	E	----	CNPS 1B.2 CVMSHCP

*Status Legend: E = listed Endangered; T = listed Threatened; SC = Species of Special Concern (only applies to State, no longer a federal category); FP = Fully Protected (State category); C = Candidate for Listing; California Native Plant Society (CNPS) List, CNPS list is for plants only: List 1B.2 = Rare, Threatened or Endangered in California and elsewhere; CVMSHCP = included in the Coachella Valley Multiple Species Habitat Conservation Plan. (Ex. 200, p. 4.2-13)

5. Construction Impacts and Mitigation

a. Power Plant Site

The 37-acre CPV Sentinel site and 2,300-foot long 220-kilovolt (kV) transmission line are surrounded by the SCE Devers Substation to the west and wind energy and transmission infrastructure to the east and south. The CPV Sentinel site and transmission line areas are vegetated with disturbed Sonoran creosote bush scrub and annual grassland. The Project will permanently impact the 37-acre project site and the transmission line will require the placement of tower footings. The CPV Sentinel site and transmission line are within the range of special status species including the desert tortoise, burrowing owl, Coachella Valley fringe-toad lizard, and the flat-tailed horned lizard. None of these species have been observed during focused or protocol-level surveys and it is unlikely that they occur in the project area. Sensitive species, however, could use adjacent areas for foraging or nesting. Habitat on-site may also provide foraging habitat for common mammals and other wildlife, as well as potentially suitable nesting habitat for resident and migratory birds. (Ex. 200, p. 4.2-15.)

The parties agree that Conditions of Certification **BIO-1** through **BIO-11** will mitigate all construction-related impacts to biological resources at the project site. These Conditions include oversight by a qualified Designated Biologist (**BIO-1, BIO-2, BIO-3, BIO-4**), Worker Environmental Awareness Program (**BIO-5**), Biological Resources Mitigation Implementation and Monitoring Plan (**BIO-6**), Impact Avoidance (**BIO-7**), Harassment and Harm Avoidance (**BIO-8**), Pre-Construction Surveys for Desert Tortoise and Impact Avoidance (**BIO-9**), Pre-Construction Surveys for Listed Plants and Impact Avoidance (**BIO-10**), and Burrowing Owl and Nesting Bird Surveys and Impact Avoidance (**BIO-11**). (Ex. 200, pp. 4.2-14 to 4.2-15.)

Among the Conditions of Certification identified above, **BIO-9** through **BIO-11** will require the Applicant to conduct pre-construction surveys for sensitive species and nesting birds with the potential to occur in the project vicinity. This allows for the continued confidence that species will not migrate into the project area undetected and be adversely impacted by the project. Condition of Certification **BIO-7** requires implementation of a 5-day capture and release program and installation of silt fencing to exclude burrowing small mammals from entering the construction area. In conjunction with the other Conditions of Certification, these conditions reduce the likelihood of sensitive species being present and ensure that if sensitive species or nesting birds are detected, appropriate actions will be

executed to avoid and/or mitigate the effects of project implementation. (Ex. 200, p. 4.2-16.)

Because the project and transmission line towers will be located on disturbed land adjacent to existing energy facilities, sensitive biological resources are not expected to occur. With implementation of the mitigation measures proposed by the Applicant and Conditions of Certification **BIO-1** through **BIO-11,** we conclude that construction of the CPV Sentinel power plant and transmission interconnection will not result in significant direct impacts to biological resources. (Ex. 200, p. 4.2-16.)

b. Construction Laydown Area

The construction laydown area is approximately 14 acres and located to the south of the CPV Sentinel site. Conditions in the laydown area are similar to project site in that natural vegetation is a mix of Sonoran creosote bush scrub and annual grassland. Temporary impacts associated with the project are also similar to the permanent impacts described above. Therefore, implementation of Conditions of Certification **BIO-7,** which requires the Applicant to install silt fencing and implement a capture and release program for small mammals, and **BIO-9** through **BIO-11,** which require the Applicant to complete pre-construction surveys, will minimize potential impacts to sensitive species. **BIO-6** requires the development and implementation of a mitigation plan that addresses temporary impact areas, including measures for re-contouring and replanting, monitoring and maintenance requirements. **BIO-6** also contains success criteria for review and approval by the Energy Commission and appropriate regulatory agencies. **BIO-7** restricts the use of any invasive species in reseeding or replanting temporary impact areas or landscaped areas. (Ex. 200, p. 4.2-16.)

We conclude that implementation of these Conditions of Certification will minimize direct impacts to habitat and wildlife, and ensure that temporarily impacted areas are restored adequately such that impacts to biological resources are less than significant.

c. Gas Lines, Water Lines, and Access Road

The gas transmission line, potable water line, and access road follow the same corridor; therefore, impacts associated with these facilities are assessed together. The Applicant will construct a 2.6-mile gas transmission line from the project site to the Indigo Energy Facility. Along the northern portion of this corridor, a 3,200-foot potable water line connecting to a MSWD municipal line at

Dillon Road and a permanent access road will be constructed. The gas transmission corridor generally follows existing dirt roads, other gas pipelines corridors, and access roads for wind energy farms. As with the other project areas, the gas transmission corridor is bordered with disturbed Sonoran creosote scrub and annual grassland. With the implementation of all the Conditions of Certification, particularly **BIO-6**, **BIO-7**, and **BIO-9** through **BIO-11**, we conclude that there will not be a significant impact to biological resources associated with temporary impacts along the gas transmission potable water and access road corridor. (Ex. 200, pp. 4.2-16 to 4.2-17.)

The recycled water pipeline will be constructed underground within an existing road and golf course. Sensitive biological resources are not expected to occur in the vicinity of this project component; however, common wildlife species may become entrapped in open trenches during construction activities. Condition of Certification **BIO-8** requires construction of escape ramps and inspection for entrapped wildlife such that implementation of this Condition will reduce potential impacts to wildlife to less than significant levels. (Ex. 200, p. 4.2-17.)

d. Construction Lighting and Noise

Illumination that meets state and federal worker safety guidelines will be required during nighttime construction. The project area is adjacent to the SCE Devers Substation, which is well lit. Some less severe night lighting is also present from permanent marker lights on wind turbines and light from rural residences. Therefore, only a slight increase in light and glare is expected to occur during construction. No sensitive species were found in the project area, but under certain circumstances, lights can disorient migratory birds flying at night, or attract wildlife such as insects and insect-eaters. However, since the CPV Sentinel Project is located adjacent to SCE Devers Substation, and on land zoned as Public Facilities by the Riverside General Plan, we conclude that there will be no significant impacts to sensitive species from the minimal amount of lighting associated with construction activities. (Ex. 200, p. 4.2-17.)

As previously mentioned, the CPV Sentinel site is surrounded by other energy facilities including the SCE Devers Substation and numerous wind turbines, rural residences, and a network of dirt roads. The CPV Sentinel site is also 1.75 miles east of SR 62 and two miles north of I-10 and the Southern Pacific Railroad. Therefore, it is likely that animals in this area have become acclimated to this level of noise so that temporarily elevated noise levels due to construction will be insignificant. Since noise levels in the vicinity are already elevated and no

sensitive species were found in the project area, we conclude there will be no significant impacts to biological resources from construction noise. (Ex. 200, p. 4.2-17.)

6. Operation Impacts and Mitigation

Potential operation-related impacts include impacts to birds due to collision with and/or electrocution by the transmission line, disturbance to wildlife due to increased noise and lighting, and loss of sensitive habitat through long-term groundwater use. (Ex. 200, p. 4.2-17.)

a. Avian Collisions and Electrocutions

Birds are known to collide with transmission lines, exhaust stacks, and other structures, causing injury and mortality to the birds. 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. Since these features are not present near the project area, we conclude that the CPV Sentinel transmission structures will not pose a significant collision threat to resident or migratory bird populations. (Ex. 200, p. 4.2-18.)

Red-tailed hawk and other large aerial perching birds, including those offered state and/or federal protection, are susceptible to transmission line electrocution. Electrocution occurs only when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a bird attempts to perch on a transmission tower/pole with insufficient clearance between these elements. However, the majority of raptor electrocutions are caused by lines that are energized at voltage levels between 1-kV and 60-kV, and “the likelihood of electrocutions occurring at voltages greater than 60-kV is low” because phase-to-phase and phase-to-ground clearances for lines greater than 60-kV are typically sufficient to prevent bird electrocution. The CPV Sentinel transmission lines will be 220-kV; therefore, phase-to-phase and phase-to-ground clearances are expected to be sufficient to minimize bird electrocutions. Nevertheless, to ensure adequate spacing of phase conductors, the phase conductors shall be separated by a minimum of 60 inches. Also, Condition of Certification BIO-7 requires that bird perch diverters and/or specifically designed avian protection materials must be used to cover electrical equipment where adequate separation is not feasible. With implementation of this mitigation, significant avian mortality due to electrocution by CPV Sentinel transmission structures is not expected to occur. (Ex. 200, p. 4.2-18.)

b. Noise and Lighting

As mentioned in the construction impact discussion above, The CPV Sentinel site is surrounded by other energy facilities, rural residences, a network of dirt roads and the project site is located near State Highway 62, I-10 and the Southern Pacific Railroad. Operation of the plant will produce elevated noise levels, but no sensitive species that could be impacted by additional noise are known to occur in the immediate vicinity. We conclude there will be no significant impacts to biological resources from operational noise because the evidence establishes that animals in this area have likely become habituated to this level of noise. (Ex. 200, p. 4.2-19.)

A slight increase in light and glare is expected to occur during operation of the CPV Sentinel facility. Under certain circumstances, lights can disorient migratory birds flying at night or attract wildlife such as insects and insect-eaters. However, since no sensitive species were found in the project area that will be impacted by operational lighting, we conclude that there will be no significant impacts to sensitive species from the minimal amount of lighting associated with operation of the new facility. (Ex. 200, p. 4.2-19.)

c. Recycled Water Supply

The recycled water pipeline will discharge treated water into a water feature on the Palm Springs National Golf Course. Sensitive biological resources are not expected to occur in the vicinity of this project component; however common wildlife species (*e.g.,* bullfrog) may use the water feature. Since the water will be treated to tertiary levels, the evidence indicates that significant impacts to biological resources will not occur. (Ex. 200, p. 4.2-19.)

d. Ground Water Use

As described in the **Soil and Water Resources** section of this Decision, the CPV Sentinel Project will consume groundwater from the Mission Creek Groundwater Sub-basin for power plant cooling. Groundwater modeling results conducted by the Applicant and verified by staff indicate that project-specific drawdowns at Coachella Valley Water District (CVWD) wells in the Mission Creek Groundwater Sub-basin could be on the order of 2 feet over the life of the project, depending both on the recharge schedule and the aquifer characteristics assumed in the modeling analysis. The maximum project-specific drawdown of ground water in the Willow Hole Conservation Area could also be approximately 2 feet over the life of the project based on the proximity of the CVWD wells to the

Willow Hole Conservation Area. Based on modeling results for the entire Mission Creek Groundwater Sub-basin and accounting for projected pumpage and recharge rates as estimated by Desert Water Agency (DWA), Mission Springs Water District (MSWD), and CVWD, the overall average drawdown would reach 82 feet by 2030, and 60-70 feet in the Willow Hole Conservation Area. (Ex. 200, p. 4.2-19.)

Groundwater use for power plant cooling without adequate recharge would contribute to the on-going problem of overdraft in the Mission Creek Groundwater Sub-basin. Overdraft pumping in the sub-basin will cause further reductions in the groundwater table under the mesquite hummocks in the Willow Hole Conservation Area, causing severe degradation or loss. (Ex. 200, p. 4.2-20.)

The majority of the mesquite root system occurs in the upper 3 feet of soil, but mesquite have one of the deepest tap roots known, extending 160 feet for some exceptional individuals. Even with this large taproot, relatively moderate groundwater decreases have been found to substantially stress or kill adult mesquite individuals. Both mesquite bosques and mesquite hummocks are generally restricted to soils no more than 50 feet above the groundwater table. However, continual and quantifiable reductions in mesquite stature have been documented when the groundwater table falls below 20 feet. (Ex. 200, p. 4.2-20.)

According to the evidence, when groundwater is within 20 feet of the ground surface, mesquite bosque and mesquite hummocks are expected to remain healthy. However, between 20 feet and 33 feet below ground surface there is a quantifiable decline in ecological function and signs of stress and senescence are observed. High mortality has been recorded at levels greater than 33 feet below the ground surface. The mesquite hummocks in the Willow Hole Conservation Area are currently degraded and at risk of future impacts associated with groundwater use. Therefore, the evidence indicates that groundwater elevation in the mesquite hummock area is estimated to range between 20 and 33 feet below the surface; however, no monitoring wells exist in the Willow Hole Conservation Area to precisely determine the current groundwater elevation. (Ex. 200, p. 4.2-20.)

Since the early 1950s, groundwater levels in the Mission Creek Groundwater Sub-basin have been steadily declining due to overdraft and the rate of decline is expected to increase due to increased pumping coupled with inconsistent and insufficient recharge. Maintaining the mesquite hummocks and existing sand dunes at the Willow Hole Conservation Area will require maintaining relatively

natural groundwater levels. This can be accomplished by 1) reduced groundwater pumping, 2) groundwater recharge at the Mission Creek Spreading Grounds, and/or 3) localized groundwater recharge through “deep irrigation” in the Willow Hole Conservation Area. Groundwater recharge has been identified as the most technically feasible and effective option to avoid groundwater drawdown and the resultant impacts to mesquite hummocks. (Ex. 200, p. 4.2-20.)

If groundwater replenishment is not implemented in advance of construction and operation of the CPV Sentinel Project, significant and irreversible impacts to mesquite hummocks and the special-status species they support would occur. This is based on the expected annual and seasonal time lag between groundwater use and the time recharge occurs in the Mission Creek Groundwater Sub-basin and the Willow Hole Conservation Area specifically. Furthermore, there is a possibility for seasonal time lags because the period in which the CPV Sentinel Project is pumping groundwater may not overlap with the time period water is available for purchase to complete the groundwater replenishment program. (Ex. 200, p. 4.2-20.)

Using modeling, the evidence establishes that water must be recharged into the Mission Creek spreading grounds in advance of groundwater pumping by the CPV Sentinel Project to avoid groundwater drawdown and the resultant impacts to mesquite hummocks. This recharge schedule is detailed in Conditions of Certification in the **Soil and Water** section of this Decision. With implementation of these conditions, project-related impacts to the mesquite hummock vegetation community and the special-status species it supports will be less than significant. The evidence indicates that USFWS is in agreement with implementation of a water recharge schedule to avoid impacts to mesquite hummocks so that consultation under the federal Endangered Species Act is not required. (Ex. 200, p. 4.2-21).

7. Cumulative impacts

“Cumulative” impacts refer to a proposed project’s incremental effect viewed over time together with other closely related past and present projects and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the proposed project (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, §§ 15064[h], 15065[c], 15130, and 15355; Ex. 200, p. 4.2-21.)

The CPV Sentinel Project site is on disturbed land that is generally isolated from undisturbed natural areas by the SCE Devers Substation, wind turbines, and a network of dirt roads. The CVMSHCP identified the project vicinity as a developed area with a wind energy overlay located outside of designated conservation areas. No sensitive resources have been identified in the project area to date nor are they expected to occur due to the location and historic disturbances on the site. Potential project-related impacts to mesquite hummocks will be offset by implementation of a groundwater recharge schedule that requires recharge sufficiently in advance of pumping to avoid groundwater drawdown. We find that impacts related to the CPV Sentinel Project will not contribute significantly to cumulative effects on biological resources in the region. (Ex. 200, p. 4.2-21.)

8. Compliance with the CVMSHCP and LORS

The CPV Sentinel Project is subject to several LORS including the Riverside County General Plan, the City of Palm Springs General Plan, and the CVMSHCP. The Project is located within the County of Riverside and to a small degree within the City of Palm Springs. The project complies with the County of Riverside General Plan and its Western Coachella Valley Area Plan Multipurpose Open Space policies, as well as the City of Palm Springs General Plan and its Recreation and Open Space and Conservation Elements. Among other things, these plans require protection of visual and biological resources, protection of the Whitewater River Watershed, protection of the fringe-toed lizard, and protection of alluvial fan areas near the Santa Rosa Mountains. These plans also require consistency with the CVMSHCP and protection of the biological resources within the CVMSHCP area. (Ex. 200, p. 4.2-21.)

The CVMSHCP satisfies the legal requirements under the state and federal Endangered Species Acts for the issuance of permits that will allow for take of species covered by the plan in the course of otherwise lawful activities. The plan, to the maximum extent practicable, provides measures to minimize and mitigate the impacts of take and provides for conservation of covered species. The CVMSHCP has been adopted by participating local agencies including the County of Riverside and the City of Palm Springs, but the CVMSHCP has not yet been permitted by state and federal regulatory agencies.

The Conditions of Certification have been developed assuming that the CVMSHCP may not be permitted before project initiation. As such, the Conditions of Certification contained herein are intended to eliminate impacts to sensitive species and habitats covered under the CVMSHCP.

We find that implementation of the proposed Conditions of Certification, including **SOIL&WATER-7**; will ensure compliance with all applicable LORS.

FINDINGS OF FACT

Based on the evidence, we find as follows:

1. The Sentinel Project site provides habitat for both common and special status animal and plant species.

2. The Project area is located on disturbed land in unincorporated Riverside County, California, north of the City of Palm Springs and immediately west of the City of Desert Hot Springs in the northwest portion of the Coachella Valley, comprising the westernmost limit of the Sonoran Desert.

3. The most common vegetation community in the vicinity of the Project site, linears and laydown area is Sonoran creosote bush scrub.

4. Several special-status species are known to occur or could potentially occur near the Project area, including burrowing owl, flat-tailed horned lizard, Coachella Valley fringe-toed lizard and desert tortoise.

5. Due to a lack of suitable habitat, neither the Coachella Valley fringe-toed lizard nor desert tortoise is likely to occur within the Project area.

6. There are two sensitive vegetation communities in the vicinity of the Project area: mesquite bosque and mesquite hummocks.

7. There are no aquatic resources within the Project area.

8. Both known populations of mesquite bosque occur up-gradient of the CPV Sentinel location; therefore, neither population will be impacted by the use of groundwater by the Project.

9. The Willow Hole Conservation Area has the largest concentration of mesquite hummocks in the CVMSHCP and is located down gradient approximately 5 miles southeast from the Project site, approximately 2 miles southeast of the CPV Sentinel gas line and 3 miles southeast of the projects groundwater pumping region.

10. The mesquite hummocks that rely on the groundwater within the Mission Creek Groundwater Sub-basin are likely the most ecologically important in the Coachella Valley.

11. Conditions of Certification **BIO-1** through **BIO-11** will mitigate all construction-related impacts to biological resources.

12. There will be no significant impacts to sensitive species from the minimal amount of lighting associated with construction activities.

13. Since noise levels in the vicinity are already elevated and no sensitive species were found in the Project area, there will be no significant impacts to biological resources from construction noise.

14. Phase-to-phase and phase-to-ground clearances are expected to be sufficient to minimize bird electrocutions from the CPV Sentinel 220-kV transmission lines.

15. Phase conductors shall be separated by a minimum of 60 inches and Condition of Certification **BIO-7** requires that bird perch diverters and/or specifically designed avian protection materials must be used to cover electrical equipment where adequate separation is not feasible, thereby mitigating avian mortality caused by electrocution to insignificance.

16. There will be no significant impacts to biological resources from operational noise because the animals in this area have become habituated to this level of noise.

17. There will be no significant impacts to sensitive species from the minimal amount of lighting associated with operation of the new facility.

18. Since the water in the water feature of the Palm Springs National Golf Course will be treated to tertiary levels, there will be no significant impacts to biological resources resulting from the use of recycled water.

19. Overdraft pumping in the sub-basin will cause further reductions in the groundwater table under the mesquite hummocks in the Willow Hole Conservation Area, causing severe degradation or loss.

20. Water recharged into the Mission Creek spreading grounds in advance of groundwater pumping by the CPV Sentinel Project to avoid groundwater drawdown and the resultant impacts to mesquite hummocks as detailed in Conditions of Certification in the **Soil and Water** section of this Decision will mitigate project-related impacts to the mesquite hummock vegetation community and the special-status species it supports to insignificance.

21. With the implementation of the Conditions of Certification contained in **Biology** and **Soils and Water** sections of this Decision, impacts related to

the CPV Sentinel Project would not contribute significantly to cumulative effects on biological resources in the region.

22. The Project complies with the County of Riverside General Plan and its Western Coachella Valley Area Plan Multipurpose Open Space policies, as well as the City of Palm Springs General Plan.

23. The Conditions of Certification contained herein are intended to eliminate impacts to sensitive species and habitats covered under the CVMSHCP.

24. The Conditions of Certification have been developed assuming that the CVMSHCP may not be permitted by the relevant state and federal regulatory agencies before project initiation; therefore, the Conditions of Certification contained herein are intended to eliminate impacts to sensitive species and habitats covered under the CVMSHCP.

CONCLUSION OF LAW

1. We therefore conclude that with implementation of the Conditions of Certification set forth below, construction and operation of CPV Sentinel Project will not create any significant direct, indirect, or cumulative impacts to biological resources.
2. Further, implementation of the Conditions of Certification, below, will ensure the CPV Sentinel Project conforms to all applicable laws, ordinances, regulations, and standards relating to biological resources as identified in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-1 The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least 3 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; and

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 90 days prior to the start of any site (or related facilities) mobilization. No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

Designated Biologist Duties

BIO-2 The project owner shall ensure that the Designated Biologist performs the following actions during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM.

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, if present and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect active construction areas where animals may have become trapped prior to construction, commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction

inactivity. Periodically inspect areas with high vehicle activity (i.e. parking lots) for animals in harm's way;

6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification;

7. Respond directly to inquiries of the CPM regarding biological resource issues;

8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and

9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation, a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.

Biological Monitor Qualifications

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least 3 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.

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), Worker Environmental Awareness Program (WEAP), and all permits.

Verification: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site (or related facilities) mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that the 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 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 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 will 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 (no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-5 The project owner shall develop and implement a CPM-approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation, and closure are informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media is made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas, if present;

3. Present the reasons for protecting these resources;

4. Present the meaning of various temporary and permanent habitat protection measures as necessary;

5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM (for review and approval) the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site and related facilities mobilization, two copies of the CPM-approved materials shall be submitted.

Training acknowledgement forms signed during construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (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 CDFG 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 identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;

2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;

3. All biological resource mitigation, monitoring, and compliance measures required in federal and State agency terms and conditions, such as those in a federal Endangered Species Act Section 10(a)(1)(B) Habitat Conservation Plan (HCP) from the USFWS or a California Endangered Species Act Section 2081 Incidental Take Permit from the CDFG, respectively;

4. All sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;

5. All temporary impact areas to be restored through surface recontouring, reseeding and/or replanting following construction-related activities;

6. All required mitigation measures for temporary impact areas and each sensitive biological resource;

7. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;

8. 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;

9. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities—one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Planned timing of aerial photography and a description of why times were chosen shall also be included;

10. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

11. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

12. All performance standards and remedial measures to be implemented if performance standards are not met;

13. A preliminary discussion of biological resources related facility closure measures;

14. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

15. A copy of all biological resources related permits obtained.

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

The CPM, in consultation with other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM within 5 days of their receipt, and the BRMIMP shall be revised or supplemented to reflect the permit condition within 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM in consultation with other appropriate agencies to ensure no conflicts exist.

Implementation of BRMIMP measures will 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.

Impact Avoidance Mitigation Features

BIO-7 Any time the project design is modified or finalized, all feasible measures that avoid or minimize impacts to the local biological resources shall be incorporated, including the following:

1. Design, install and maintain gas transmission lines, potable water lines, access roads, and storage and parking areas to avoid identified sensitive resources;

2. Design, install, and maintain the transmission line from CPV Sentinel to SCE Devers Substation and all other electrical components in accordance with the Avian Power Line Interaction Committee (APLIC), *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* to reduce the likelihood of electrocutions of large birds;

3. Design, install, and maintain structures and supports to prevent common raven (*Corvus corax*) nesting. Destroy nests that are established prior to egg laying and the modify the location to prevent future nest establishment (modified from applicant's Mitigation Measure Bio-9);

4. Install silt fencing buried 1-foot deep and attached to a chain-link fence around the project site prior to construction to keep burrowing animals from easily tunneling into the site. Examine the fencing at least once a week and repair when necessary. Maintain the fencing until construction is complete (modified from applicant's Mitigation Measure Bio-10);

5. Following installation of silt fence and prior to ground disturbance, conduct small mammal trapping for five nights in order to capture and relocate as many small mammals from within the project area as possible. Set traps near sign, burrows, or tracks at dusk each day and check at midnight or no later than dawn the next day to ensure no unnecessary deaths occur (modified from applicant's Mitigation Measure Bio-11);

6. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species or plant species identified on Table 4-113 (Prohibited Invasive Plant Species) of the CVMSHCP from reseeding areas following temporary disturbance or from landscaping plans (modified from applicant's Mitigation Measure Bio-8);

7. Prescribe a road sealant that is non-toxic to wildlife and plants; and

8. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the

CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Mitigation Management to Avoid Harassment or Harm

BIO-8 The project owner shall implement the following measures to manage the construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources:

1. Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep-walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS. Before such holes or trenches are filled, they shall be thoroughly inspected for trapped animals by the Designated Biologist or Biological Monitor;

2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week;

3. Prohibit feeding of wildlife by staff and subcontractors;

4. Prohibit non-security related firearms or weapons from being brought to the site;

5. Prohibit pets from being brought to the site;

6. Report all inadvertent deaths of sensitive species to the appropriate project representative. Injured animals shall be reported to CDFG or USFWS and the project owner shall follow instructions that are provided by CDFG or USFWS;

7. Minimize use of rodenticides in the project area; and

8. Prohibit vehicles and personnel from entering sensitive habitats.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. 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.

Pre-construction Surveys for Desert Tortoise and Impact Avoidance

BIO-9 The project owner shall conduct follow-up surveys to augment the protocol-level surveys conducted in 2007 and 2008 by Xeric Specialties for the project and implement the appropriate measures to minimize impacts if detected:

1. Qualified (permitted or USFWS-approved) biologist(s) shall conduct additional surveys for desert tortoise in the project area, including the power plant site and the linear facilities (e.g. natural gas and potable water lines). The survey shall be conducted approximately 30 days prior to the start of initial ground disturbance activities and shall follow a modified Field Survey Protocol for any Federal Action that may Occur within the Range of the Desert Tortoise (USFWS 1992) including:

   A. Complete a Presence-Absence Survey in January 2008. This survey window encompasses the active period for juvenile desert tortoise throughout its range during a typical year.

   B. The survey should identify the number and location of all tortoises and tortoise sign that occur within a given project area and if any tortoises occur in adjacent areas whose home range may overlap into the project area and thus be lost or harassed by the proposed action.

   C. Surveys shall only be conducted during daylight hours and shall include the entire project area (100 percent coverage) using 10 meters wide (30 feet) belt transects.

   D. In addition, the “Zone of Influence” shall be surveyed using as a minimum, belt transects located at 100, 300, 600, 1200, and 2400-foot intervals from and parallel to the edge of the project boundaries. The Zone of Influence is defined as the area where tortoises on adjacent lands may be directly or indirectly affected by project exploration, construction, maintenance, operation, monitoring, dismantlement, enhancement, and project abandonment.

   E. Map all tortoise sign (live tortoises, shell, bones, scutes, limbs, scats, burrows, pallets, tracks, egg shell fragments, courtship rings, drinking sites, mineral licks, etc.) within the project area and located on transects within the Zone of Influence.

   F. All burrows shall be visually examined using a “burrow scope” to ensure there are no brumating or aestivating individuals. If determined vacant, burrows will be hand excavated to ensure the contents of the burrow are definitively identified.

2. If no evidence of desert tortoise use is detected during the survey, then it shall be assumed the site is unoccupied and no Incidental Take Permits from USFWS or CDFG shall be required for construction.

3. If evidence of the desert tortoise or another federally or State listed reptile species is detected in the project area then the project owner shall be required to show coverage under the CVMSHCP or obtain a Biological Opinion (ESA Section 10) and/or a CESA Section 2081 Letter of Concurrence to determine appropriate mitigation for impacts which may include the following:

   A. Capture and relocate animals to an approved location.

   B. Purchase of lands offsite and establishment of an endowment for management of the lands.

Verification: The project owner shall report to the CPM the results of the surveys and whether coverage under the CVMSHCP or a Biological Opinion (ESA Section 10) and/or a CESA Section 2081 Letter of Concurrence are required as soon as possible. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP, which includes desert tortoise survey results to date and any necessary impact avoidance measures. Results for all surveys conducted after the final version of the BRMIMP is complete shall be submitted as a supplement to the CPM. All modifications to the approved BRMIMP shall be made only after consultation with the CPM and other appropriate agencies. The project owner shall notify the CPM five working days before implementing any modifications to the BRMIMP.

Pre-construction Surveys for Listed Plant Species and Impact Avoidance

BIO-10 The project owner shall conduct follow-up surveys to the protocol level surveys conducted in 2007 and 2008 by xeric Specialties to determine the presence of the Coachella Valley milk-vetch and the Triple-ribbed milk-vetch and implement the appropriate measures to minimize impacts if detected:

1. A qualified biologist shall conduct surveys for both Coachella Valley milk-vetch and triple-ribbed milk-vetch in the project area, including the power plant site and the linear facilities. The survey shall be conducted at least 30 days prior to the start of initial ground disturbance activities and shall follow the CNPS Botanical Survey Guidelines (1983), Guidelines for Conducting and reporting Botanical inventories for Federally Listed, Proposed and Candidate Species (USFWS 2000), and Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities (CDFG 1983) including:

   A. Conduct surveys at the appropriate times of year when the target species are present and identifiable. If milk-vetch are detected, but cannot be identified to species, follow-up surveys shall be conducted during the blooming season to confirm the

species. Estimated blooming season for both species occurs between February and May (CNPS 2007).

B. If available, use a regional or local reference population to confirm that the plants are identifiable at the time of the survey as well as to obtain a visual image of target species and the associated habitat.

C. Compile a comprehensive list of plants observed on site, identified to the lowest taxonomic level applicable to allow for rarity to be determined.

D. Conduct surveys using systematic field techniques to ensure thorough coverage of the project area and any surrounding suitable habitat.

E. If a special status species is observed, including the two target species, a California Native Species Field Survey Form shall be completed, along with the appropriate 7.5 minute topographical map with the occurrence mapped. Accurate population boundaries shall be mapped along with an estimate of the number of individuals within the population. A copy of the completed form shall be included in the monthly compliance report.

F. Multiple visits are recommended during the growing season in particular due to the ongoing drought conditions in Southern California which may result in late or early emergent's as well unsuccessful blooming.

2. If either target species or another federally or State listed plant species is detected in the project area then the project owner shall be required to show coverage under the CVMSHCP or obtain a Biological Opinion (ESA Section 10) and/or a CESA Section 2081 Letter of Concurrence to determine appropriate mitigation for impacts which may include the following:

A. Complete avoidance of populations of sensitive plants through project modification.

B. Complete avoidance by flagging and mapping the population prior to construction to avoid direct impacts.

C. Relocate plants and/or collect seeds from existing populations that would be impacted and then plant/seed these plants in adjacent suitable habitat that would not be affected by proposed project and then monitor for 5 years.

D. If available, purchase of in-kind habitat acreage in a mitigation bank at a ratio to be determined by the appropriate regulatory agency.

E. Off-site mitigation including restoration and enhancement as determined by the appropriate regulatory agency.

Verification: The project owner shall report to the CPM the results of the surveys and whether coverage under the CVMSHCP or a Biological Opinion (ESA Section 10) and/or a CESA Section 2081 Letter of Concurrence are required as soon as possible. At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP, which includes rare/listed plant survey results to date and any necessary impact avoidance measures. Results for all protocol surveys conducted after the final version of the BRMIMP is complete shall be submitted as a supplement to the CPM. All modifications to the approved BRMIMP shall be made only after consultation with the CPM and CDFG. The project owner shall notify the CPM five working days before implementing any modifications to the BRMIMP.

Burrowing Owl and Nesting Bird Surveys and Impact Avoidance

BIO-11 The project owner shall conduct follow-up surveys to the surveys conducted in 2007 and 2008 by Xeric Specialties and URS to identify the presence and avoid or minimize impacts to burrowing owls and other nesting birds:

1. A qualified biologist shall conduct survey for burrowing owl activities in the project area, including the power plant site, the linear facilities (e.g. natural gas lines), and a 150 meter (approximately 500 feet) buffer (where possible and appropriate based on the habitat). The survey should follow the protocol outlined in the CDFG Staff Report on Burrowing Owl Mitigation (1995), as modified below, including:

   A. One (1) winter (December 1 to January 31) survey no less than 30 days prior to the start of initial ground disturbance activities.

   B. Conduct surveys from two hours before to one hour after sunset or from one hour before to two hours after sunrise.

   C. Identify all active and historical burrows (natural or artificial) as well as suitable habitat within the entire project area including the 150 meter buffer (accounts for impacts from noise and vibration impacts).

   D. Space transects to allow for 100 percent visual coverage (maximum 30 meters from centerline).

   E. Surveyors shall avoid owls and occupied burrows by a minimum 50 meters where practical.

2. If burrowing owls are present within 500 feet of the power plant site or linear facilities, then the project owner shall contact CDFG and implement the CDFG burrowing owl guidelines (1995) to include:

   A. Mitigation should consist of passive relocation with a one-way door to avoid direct impacts to the burrowing owls on site. Passive relocation shall be conducted during the non-breeding season (September 1–January 31) to ensure that active nests are not lost as a result of owl exclusion. The methodology for owl relocation shall follow the guidelines set forth in the CDFG Staff Report on Burrowing Owl Mitigation (CDFG 1995).

   B. Occupied burrows shall not be disturbed during the nesting season (February 1–August 31) unless a qualified biologist approved by CDFG verifies through noninvasive methods that either: (1) the birds have not begun egg laying and incubation; or (2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival.

   C. If permanent impacts to breeding habitat are unavoidable, the project owner shall acquire, permanently protect and enhance a minimum of 6.5 acres of suitable habitat per pair of breeding burrowing owl, or submit evidence of coverage under the CVMSHCP to the CPM.

3. If initial ground disturbance is to occur during the breeding season, complete a pre-construction survey for nesting birds on the project site and/or linear facilities no less than 30 days prior to the start of ground disturbance activities. This survey can occur in conjunction with the burrowing owl surveys.

4. Ground disturbance and work near potential raptor nesting sites should be scheduled for the non-breeding season. If work is to occur during the nesting season, work will be prohibited within 500 feet of raptor nests or 200 feet of other species' nests. At the request of the Designated Biologist and with CPM approval, visual barriers and sound buffers may be used to reduce these buffers around nests.

Verification: At least 60 days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP, which includes burrowing owl/nesting bird survey results to date and any necessary impact avoidance measures. Results for all protocol surveys conducted after the final version of the BRMIMP is complete shall be submitted as a supplement to the CPM. All modifications to the approved BRMIMP must be made only after consultation with the CPM and other appropriate agencies. The project owner shall notify the CPM five working days before implementing any modifications to the BRMIMP.

B. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the project, including the project's potential to induce erosion and sedimentation, 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. Mitigation measures are included in the Conditions of Certification to ensure that the project will have no significant impacts on the environment and that it will comply with all applicable laws, ordinances, regulations, and standards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Soil Resources

The CPV Sentinel Project site, offsite pipeline routes, and the transmission line corridor are located on areas of very deep, moderately well to excessively drained soils on alluvial and pediment deposits. Surface soils typically consist primarily of gravelly sand and fine sand. In general, soils of the project are highly permeable and have low to moderate water erosion potential. The wind erosion potential is high, except in the areas of gravelly sand (Carsitas soils). The record indicates that groundwater application during construction is the primary BMP to limit erosion from wind. (Ex. 200, pp. 4.9-11 to 4.9-12.)

The project site will be subject to wind and water erosion during construction and operation. The total earth movement during construction will be significant, with up to 20 feet of cuts and fills amounting to approximately 250,000 cubic yards. The earthwork will primarily consist of cut and fill grading with excavation for foundations and underground systems. (Ex. 200, p. 4.9-16.)

Construction activities can lead to adverse impacts to soil resources including increased soil erosion, soil compaction, loss of soil productivity, and disturbance of soils crucial for supporting vegetation and water dependant habitats. However, with implementation of the BMPs required by **SOIL&WATER-1** and **-2**, the impact to soil resources from water and wind erosion will be reduced to a level that is less than significant. The erosion and sedimentation control measures include: wetting the roads in active construction and laydown areas; controlling speed on unpaved surfaces; placing gravel in entrance ways; use of straw bales, silt fences, and earthen berms to control runoff; restoration of native

plant communities by natural revegetation, seeding and transplanting, and application of soil bonding and weighting agents.

Watering for fugitive particulate matter emission control during soil handling, bulldozing and grading is expected to maintain soil moisture. During grading work, soil will also be stabilized by maintaining sufficient water content to make it resistant to weathering and erosion by wind or water. Silt fences will be installed with adequate spacing perpendicular to the drainage path and generally oriented in a northwest to southeast direction to trap sediment before it can migrate.

Conditions of Certification in the **Air Quality** section of this Decision include mitigation measures that will prevent significant impacts from fugitive dust and soil erosion by requiring offsite access road paving before construction; as well as dust control to disturbed lands during construction. (Ex. 200, p. 4.9-17.)

During operations, the project site will be covered predominantly with gravel and landscaping to prevent wind and water erosion. This will maintain a high degree of the pre-project water infiltration capacity in the soil. The balance of the project site will be covered by foundations and paving. These measures will be included in the general NPDES permit. (See Condition of Certification **SOIL&WATER-1.**) With implementation of the permit requirements and Condition of Certification **SOIL&WATER-1**, there will be no significant impacts to soil resources during operation of the CPV Sentinel Project. (Ex. 200, pp. 4.9-20.)

2. Groundwater

The primary source of water to the Coachella Valley has historically been from the surrounding mountains where surface runoff flows along rivers, creeks, and washes form what is known as the Coachella Valley Groundwater Basin. Groundwater recharge from precipitation is considered minimal in the Coachella Valley Groundwater Basin because direct recharge from rainfall within the basin is significantly less than the potential rate of evapotranspiration and potential for soil moisture retention. In portions of the basin where there has been development, a potentially significant volume of water that is used may be returned to the groundwater basin through wastewater treatment plant (WWTP) percolation basins, septic systems, and inefficient irrigation practices. (Ex. 200, p. 4.9-6.)

A relatively new source of water in the Upper Coachella Valley has resulted from the importation and spreading of Colorado River water for groundwater recharge. There are two spreading grounds for enhanced percolation of the imported water:

the Whitewater River spreading grounds and Mission Creek spreading grounds. Spreading operations began in 1973 at the Whitewater River grounds and in 2002 at the Mission Creek spreading grounds. Since 2002, this recharge is necessary because groundwater pumping in portions of the basin has created overdraft conditions. (Ex. 200, pp. 4.9-6 to 4.9-7.)

The Desert Water Agency (DWA) and Coachella Valley Water District (CVWD) are the primary agencies responsible for importing surface water and recharging groundwater in the Upper Coachella Valley. The water imported for recharge is delivered by the Metropolitan Water District of Southern California (MWD) through its aqueduct to the spreading grounds which are owned and operated by DWA and CVWD. (Ex. 200, p. 4.9-7.)

The project site is located in the Mission Creek Groundwater Sub-basin (MCGS). The MCGS is considered an unconfined aquifer with a saturated thickness of 1,200 feet or more and an estimated total storage capacity on the order of 2.6 million acre feet (AF). The sub-basin is naturally recharged by surface and subsurface flow from the Whitewater River, Mission Creek, San Gorgonio River, Little and Big Morongo Washes, Long Canyon, and surrounding mountain drainages. Irrigation return flow and discharges from municipal and individual subsurface wastewater disposal systems also contribute to recharge. (Ex. 200, pp. 4.9-7 to 4.9-8.)

The MCGS supplies high quality water for domestic use to individual groundwater pumpers and retail water through the Mission Springs Water District (MSWD) and CVWD. However, the MCGS, like other groundwater sub-basins in the Coachella Valley, is in a state of overdraft. Water levels have declined in the MCGS approximately 63 feet from 1955 to 1997 and are expected to continue to decline. Since 2002, groundwater has been recharged at the Mission Creek spreading grounds through the Colorado River water importation program. (Ex. 200, p. 4.9-8.)

3. Project Water Supply

The project's Water Supply Plan (WSP) has four main components:

a. The project owner will fund the installation of a recycled water line to serve the Palm Springs National Golf Course (PSNGC) and convert the golf course irrigation water supply from groundwater to recycled water from the

DWA WWTP. The new recycled water line will consist of approximately 900 feet of 12-inch pipeline extending from an existing DWA service main located along South Murray Canyon Drive in Palm Springs. Both the golf course and WWTP are located within the Whitewater River Groundwater Sub-basin (WRGS).

b. The project owner will fund the replacement of existing residential irrigation controllers with new water conserving irrigation controllers within the MCGS and adjoining sub-basins. These new controllers will replace old ones on at least 4,800 existing homes.

c. The project will implement a water transfer and exchange program to replenish groundwater in the MCGS with fresh water equal to the amount of project water extracted from onsite wells. The imported water will come from the Colorado River.

d. The project owner has agreed to make payments to the Replenishment Program in accordance with the terms of the 2001 Ocotillo Well Metering Agreement and 2003 Replenishment Agreement (Ex. 200, p. 4.9-11)

During operation, the project will pump groundwater for process use. Water will be supplied by up to five groundwater wells that will be installed at the project site. Condition of Certification **SOIL&WATER-3** ensures that the wells are constructed in accordance with state and local LORS. All potable water needs will be supplied via a potable water supply pipeline connection to the Dillon Road main line owned and operated by the MSWD. All of the water supplied by the MSWD comes from wells installed in the MCGS and the adjacent Garnet Hill Groundwater Sub-basin. (Ex. 200, p. 4.9-13.)

The project will use an annual maximum of 1,100 AFY and an average of 550 AF of groundwater for project operations, including cooling, process operations, fire protection, and landscaping. In accordance with the WSP, the project will also percolate and recharge an equal amount of groundwater at the Mission Creek Spreading Grounds. (Ex. 200, p. 4.9-21.)

The WSP will recharge groundwater to replace water pumped from the MCGS and mitigate potential environmental impacts, including those at the Mesquite Hummocks Conservation Area. CPV Sentinel has funded the purchase of 8,350 AF of freshwater for initial recharge of the MCGS at the Mission Creek Spreading Grounds under terms of a thirteen-year agreement. DWA has purchased the water from North Kern Water Storage District on behalf of the Applicant and

arranged for an exchange of this water with the Metropolitan Water District of Southern California (MWD). MWD has agreed to deliver the same volume of water through their Colorado River Aqueduct. By contract, 108 percent of the water pumped from project wells will be recharged to the MCGS. The extra eight percent will make up for any water incidentally lost during delivery. (Ex. 200, pp. 4.9-28 to 4.9-29.)

Although the project will recharge groundwater in an amount equal to or greater than it uses, there will be a difference in the timing and location of recharge and project pumping. The project will be pumping groundwater approximately 3.5 miles south (down gradient) of the Mission Creek Spreading Grounds, and about 4 miles from the central portion of the Mesquite Hummocks Conservation Area to the southeast. If recharge does not occur sufficiently in advance of project pumping, a lag time will occur between any beneficial increase in groundwater levels and drawdown caused by the project's groundwater pumping. (Ex. 200, p. 4.9-29.)

Condition of Certification **SOIL&WATER-8** will ensure pumping of each of the five wells is metered, groundwater use is limited to 1,100 AFY, and require advance groundwater recharge 16-months prior to commencing project operations. It will also require that in any given month, the amount of water that may be consumed is the total amount of water that has been recharged 16-months or more prior to that month, minus the cumulative amount of water previously pumped for project process needs. (Ex. 200, p. 4.9-33; Ex. 206 p. 14.)

Condition of Certification **SOIL&WATER-10** requires the initial recharge of the North Kern water to take place at the Mission Creek Spreading Grounds and an accounting of all water recharged.

Condition of Certification **SOIL&WATER-11** will require that if the Applicant wishes to recharge other water before or after recharge of the North Kern water, they must submit a Water Supply Plan detailing the source and legal entitlement to the water, demonstrate CEQA compliance for the water source, and a schedule for delivery to the Mission Creek Spreading Grounds. Compliance with these Conditions will mitigate potential impacts to the Mesquite Hummocks to below significance. (See the **Biological Resources** section of this Decision.)(Ex. 200, p. 4.9-33; Ex. 206 pp.16-18.)

Groundwater, either from onsite wells or that serves local municipal needs, will be used to meet the potable demands for the project's operation workforce. The estimated annual potable water demand is 2 AFY. If municipal water is used for potable needs, it will be piped in from the MSWD main located on Dillon Road. (Ex. 200, p. 4.9-13.)

The use of groundwater pumped from on-site wells or as delivered by the MSWD for potable use is an incremental increase of groundwater in the MCGS that is subject to the same analysis and mitigation as the process water (see above). Condition of Certification **SOIL&WATER-5** requires the project to monitor and record its potable water use during operation and limits the project's potable water use to no more than 2.0 AFY. (Ex. 200, p. 4.9-21.)

During construction of the power plant, the project owner will use groundwater from onsite wells. The average daily water use during construction will be 25,000 gallons, and will be used primarily for dust suppression and vehicle washing. A portion of this water will return to the groundwater basin as return flow. During hydro-testing of the natural gas pipeline, up to 300,000 gallons of water could be used with a maximum daily use of 250,000 gallons. This wastewater either will be trucked to a treatment and disposal facility or percolated on-site, depending on the results of water analysis after the hydro-testing event. (Ex. 200, p. 4.9-13.)

The use of groundwater for construction will be limited in duration and volume. Construction is expected to require 18 months to complete. Assuming 235 working days in the year, the estimated average water use for construction will be 27 AF. Conditions of Certification **SOIL&WATER-8, -10** and **-11** ensure the project will cause no adverse construction or operation impacts to the MCGS. (Ex. 200, pp. 4.9-14; 4.9-18 to 4.9-19.)

Potable water demands during construction will be minimal. The project will use bottled water to supply drinking water for the construction workforce. Portable facilities will be used for sanitary needs and will operate without water. Therefore, there will be no significant adverse environmental impacts associated with potable water use during project construction.

The WSP for the project will import more water into the MCGS and the WRGS than the project will use. We find that the net benefit to regional groundwater resources is consistent with state water conservation and use policies.

4. Wastewater

The sanitary wastewater system will collect wastewater from sinks, toilets, and other sanitary facilities for discharge to an onsite septic system. Condition of Certification **SOIL&WATER-12** will ensure that the sanitary waste system is properly constructed, operated, and maintained in accordance with the Riverside County Ordinances 457, 592.1, and 650. (Ex. 200, p. 4.9-14, 4.9-36.)

The process wastewater system will collect all process wastewater streams generated from operation of the plant and deliver it to the zero liquid discharge (ZLD) system. All process wastewater streams are recycled through the water purification system and returned to the demineralizer as a makeup supply. The remaining sludge is concentrated in a dryer which reduces the sludge to solids for disposal in a landfill. The management of this waste is further discussed in the **Waste Management** section of this Decision.

The primary wastewater stream is cooling tower blowdown. The process wastewater system will also collect any drainage from plant drains and hazardous materials storage areas and route this flow through an oil/water separator before its reuse in the cooling tower. No wastewater will be discharged to surface waters. Condition of Certification **SOIL&WATER-11** will ensure appropriate management of the ZLD system and appropriate disposal of the solid residue generated by the ZLD system. (Ex. 200, pp. 4.9-14, 4.9-36.)

5. Water Erosion

a. Stormwater

Construction of the CPV Sentinel Project will add impervious areas to the site, causing an increase in stormwater runoff. However, the evidence indicates that a draft SWPPP has been prepared that provides conceptual plans for erosion and drainage control measures for use during project construction. The SWPPP includes BMPs for properly storing and containing hazardous materials used, and hazardous waste generated, during the course of construction. Condition of Certification **SOIL&WATER-1** ensures compliance with SWRQCB Order 99-08 which will require the project owner to develop and implement a SWPPP. Condition of Certification **SOIL&WATER-2** ensures compliance with flood control and grading provisions of Riverside County Public Use Permit 897. Proper application of BMPs in accordance with these Conditions will reduce impacts due

to stormwater runoff, on and off-site, to a level that is less than significant. (Ex. 200, pp. 4.9-17 to 4.9-18.)

Potentially significant water quality impacts could occur during operations if contaminated or hazardous materials used during operations were to contact storm water runoff and drain off-site. To avoid these potential impacts, a SWPPP will be required by the general NPDES permit for industrial activity. Condition of Certification **SOIL&WATER-4** requires the Applicant to comply with the requirements of the general NPDES permit for discharges of storm water associated with industrial activity. With implementation of the permit requirements, we do not believe there will be significant impact to water quality due to storm water runoff on and offsite. (Ex. 200, p. 4.9-20.)

b. Flooding and Tsunami

The project site is not located within the 100-year floodplain as defined by Federal Emergency Management Agency (FEMA). The project site is too far inland to be affected by tsunami and too far from a large water body to be affected by seiche. (Ex. 200, p. 4.9-18.)

The southeast leg of the natural gas pipeline will be located in FEMA Zone B, which is defined as an area between the 100- and 500-year flood or an area subject to a 100-year flood with an average depth of less than one foot. To mitigate potential impacts, Condition of Certification **SOIL&WATER-1** and **-2** require BMPs that will ensure the pipeline will not be affected by or exacerbate flooding. (Ex. 200, p. 4.9-18.)

6. Cumulative Impacts and Mitigation

Construction and operation of the project will result in both temporary and permanent changes at the project site. These changes could potentially increase local soil erosion and storm water runoff. However, project related soil or storm water cumulative impacts will be reduced to a level of insignificance through implementation of mitigation measures, BMPs and project DESCP; implementation of the SWPPPs for the Construction and Industrial Activities; NPDES permits; and compliance with all applicable erosion and storm water management LORS. (Ex. 200, p. 4.9-37.)

The use of water during construction will be limited in duration and quantity. The annual potable water use during operation is approximately 2 AFY, which is not significant.

Over the next 30 years, the regional use of the MCGS groundwater is expected to increase and, along with that increased use, an increase in the overdraft in the sub-basin. However, the recharge of all process water used at the rate identified in **SOIL&WATER-8** ensures that the project will not contribute at any time to significant cumulative impacts to the MCGS. (Ex. 200, p. 4.9-38.)

Even though low-income and minority populations exist in the immediate project area, the evidence has not identified any significant unmitigated adverse soil and water resource impacts from the project or cumulative impacts; therefore, no significant adverse impacts to minority or low-income populations are expected to occur. (Ex. 200, p. 4.9-38.)

FINDINGS OF FACT

Based upon the evidence, we find and conclude as follows:

1. Potential adverse impacts caused by erosion and storm water flows during construction and operation will be mitigated with the development and implementation of an effective storm water pollution prevention plan and a drainage, erosion, and sediment control plan.

2. BMPs required by Condition of Certification **SOIL&WATER-1** and **-2**, will reduce the construction and operation impacts to soil resources from water and wind erosion to a level that is less than significant.

3. Water will be supplied by up to five groundwater wells that will be installed at the project site.

4. Condition of Certification **SOIL&WATER-3** will ensure the project wells will be constructed in accordance with state and local LORS.

5. The CPV Sentinel Project will use an annual maximum of 1,100 AFY and an average of 550 AF of groundwater for project operations, including cooling, process operations, fire protection, and landscaping.

6. The Mission Creek Groundwater Sub-basin is in a state of overdraft.

7. 108 percent of the water pumped from the project wells will be recharged to the Mission Creek Groundwater Sub-basin.

8. Condition of Certification **SOIL&WATER-8** will ensure pumping of each of the five wells is metered.

9. Condition of Certification **SOIL&WATER-8** will ensure groundwater use is limited to 1,100 AFY.

10. Condition of Certification **SOIL&WATER-8** will require advance groundwater recharge of 16-months prior to commencing project operations.

11. Condition of Certification **SOIL&WATER-8** will require that in any given month, the amount of water that may be consumed is the total amount of water that has been recharged 16-months or more prior to that month, minus the cumulative amount of water previously pumped for project process needs.

12. Condition of Certification **SOIL&WATER-10** requires the initial recharge of the North Kern water to take place at the Mission Creek Spreading Grounds and an accounting of all water recharged.

13. If the project owner wishes to recharge other water before or after recharge of the North Kern water, Condition of Certification **SOIL&WATER-11** requires a Water Supply Plan detailing the source and legal entitlement to the water, a demonstration of CEQA compliance for the water source, and a schedule for delivery to the Mission Creek Spreading Grounds as a prerequisite.

14. Compliance with these Conditions will mitigate potential adverse impacts to the Mesquite Hummocks to insignificance.

15. The project will not contribute at any time to significant cumulative impacts to the Mission Creek Groundwater Sub-basin.

16. Condition of Certification **SOIL&WATER-5** requires the project to monitor and record its potable water use during operation, and limits the project's potable use to no more than 2.0 AFY.

17. The project will supply bottled drinking water for the workforce and portable facilities for sanitary needs during construction.

18. There will not be significant adverse environmental impacts associated with potable water use during project construction.

19. The project will substantially conserve groundwater in the MCGS and WRGS by funding the conversion of the PSNGC from groundwater to recycled water and the installation of new water conserving irrigation controllers on at least 4,800 existing homes.

20. The water supply for the project is consistent with state water conservation and use policies.

21. Condition of Certification **SOIL&WATER-4** requiring compliance with the requirements of the general NPDES permit for discharges of storm water associated with industrial activity and proper application of BMPs will reduce impacts due to storm water runoff, on and off-site, to a level that is less than significant.

22. Condition of Certification **SOIL&WATER-12** will ensure that the sanitary waste system is properly constructed, operated, and maintained in accordance with the Riverside County Ordinances.

23. Condition of Certification **SOIL&WATER-2** will ensure compliance with flood control and grading provisions of Riverside County Public Use Permit 897.

24. The recovery of process wastewater using Zero-Liquid-Discharge technology is consistent with state water use and conservation policies.

CONCLUSIONS OF LAW

Based on these findings, we find that the CPV Sentinel Project will not result in any unmitigated, significant project-specific or cumulative adverse impacts to Soil or Water Resources and will comply with all applicable LORS with implementation of the Conditions of Certification set forth herein.

CONDITIONS OF CERTIFICATION

NPDES STORMWATER PERMIT – CONSTRUCTION ACTIVITY

SOIL&WATER-1: The project owner shall comply with the requirements of the general National Pollution Discharge Elimination System (NPDES) permit for discharge of storm water associated with construction activity. The project owner shall develop, obtain compliance project manager (CPM) approval of, and implement a Storm Water Pollution Prevention Plan (SWPPP) for, the construction of the CPV Sentinel site, lay down area, and all linear facilities including the recycled water supply pipeline to PSNGC.

Verification: At least 60 days prior to site mobilization, the project owner shall submit to the CPM a copy of the construction SWPPP for review and approval prior to site mobilization. The project owner shall retain a copy on site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the Colorado Region Regional Water Quality Control Board (RWQCB) regarding the NPDES permit for the discharge of storm water associated with construction activity within ten days of its receipt or submittal.

Copies of correspondence shall include the notice of intent sent to the State Water Resources Control Board (SWRCB), and the board's confirmation letter indicating receipt and acceptance of the notice of intent.

COUNTY GRADING AND FLOODING PERMIT REQUIREMENTS

SOIL&WATER-2: The project owner shall complete all necessary plans, reports, documents, and monitoring necessary to satisfy the Conditions of Approval related to grading and flooding outlined in Draft Public Use Permit Number 897 issued by the County of Riverside, dated August 11, 2008, and Riverside County's Ordinance 754.2. Prior to initiation of construction activities, the project owner shall submit to the County of Riverside all necessary documentation, plans, and fees **normally** required for County's determination of compliance with Conditions of Approval, with copies to the CPM. The project shall not commence construction until the county of Riverside provides its written evaluation as to whether the proposed grading and flood control construction and operation activities complies with all county requirements and the CPM provides approval for construction. The project owner shall ensure compliance with all county standards and requirements for grading, erosion control, and flooding for the life of the project and shall provide the CPM with two (2) copies of all monitoring or other reports required for compliance with the County of Riverside requirements.

Verification: The project owner shall do all of the following:

1. No later than 60 days prior to the start of grading the project owner will provide to the County of Riverside and CPM a copy of all necessary information to satisfy the Conditions of Approval for grading and flooding and acquire a grading permit from the County of Riverside. The submittal must be reviewed by the County of Riverside and approved by the CPM.

2. No later than 60 days prior to the start of facility construction the project owner will provide to the County of Riverside and CPM a copy of all necessary information to satisfy the Conditions of Approval for grading and flooding and acquire a building permit from the County of Riverside. The submittal must be reviewed by the County of Riverside and approved by the CPM.

3. No later than 30 days prior to project operation, the project owner will facilitate inspections and provide documentation to the County of Riverside and CPM demonstrating that all necessary grading and flooding improvements have been completed and are operational. The submittal must be reviewed by the County of Riverside and approved by the CPM.

PROJECT GROUNDWATER WELLS

SOIL&WATER-3: The project owner shall construct and operate up to five onsite groundwater wells that produce water from the Mission Creek Groundwater Sub-basin (MCGS). The project owner shall ensure that

the wells are completed in accordance with all applicable state and local water well construction permits and requirements. Prior to initiation of well construction activities, the project owner shall submit a well construction packet to the County of Riverside, in accordance with the County of Riverside Ordnance 682, containing all documentation, plans, and fees normally required for the county's well permit, with copies to the CPM. The project shall not construct a well or extract and use any groundwater therefrom until the County of Riverside issues its written evaluation as to whether the proposed well construction and operation activities comply with all applicable county well requirements, and the CPM provides approval to construct the well. The project owner shall provide documentation to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the Department of Water Resources (DWR) a Well Completion Report for each well installed. The project owner shall ensure the Well Completion reports are submitted. The project owner shall ensure compliance with all county water well standards and requirements for the life of the wells and shall provide the CPM with two (2) copies of all monitoring or other reports required for compliance with the County of Riverside water well standards and operation requirements, as well as any changes made to the operation of the well.

Verification: The project owner shall do all of the following:

1. No later than 30 days prior to the construction of the onsite water supply wells, the project owner shall submit two (2) copies to the CPM of the water well construction packet submitted to the County of Riverside.

2. No later than 15 days prior to the construction of the onsite water supply wells, the project owner shall submit two (2) copies of the written concurrence document from the County of Riverside indicating that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program .

No later than 60 days after installation of each well at the project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provide to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports that may be:

1. Submit copies to the CPM of any proposed well construction or operation permit changes within ten (10) days of submittal to or receipt from the County of Riverside.

2. Submit copies of any water well permit-related well monitoring reports required by the County of Riverside to the CPM in the annual compliance report.

3. No later than fifteen (15) days after completion of the onsite water supply wells, the project owner shall submit documentation to the CPM and the RWQCB that well drilling ac available for each well installed.

During well construction and for the operational life of the well, the project owner shall:

1. Submit copies to the CPM of any proposed well construction or operation changes.
2. Submit copies of any water well monitoring reports required by the County of Riverside to the CPM in the annual compliance report.
3. No later than fifteen (15) days after completion of the onsite water supply wells, the project owner shall submit documentation to the CPM and the RWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c).

NPDES STORMWATER PERMIT – INDUSTRIAL ACTIVITY

SOIL&WATER-4: The project owner shall comply with the requirements of the general NPDES permit for discharges of storm water associated with industrial activity. The project owner shall develop, obtain CPM approval of, and implement an industrial SWPPP for the operation of the project.

Verification: At least 60 days prior to commercial operation, the project owner shall submit to the CPM a copy of the industrial SWPPP for operation of the project for review and approval prior to commercial operation. The project owner shall retain a copy on site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the RWQCB regarding the general NPDES permit for discharge of storm water associated with industrial activity within 10 days of its receipt or submittal. Copies of correspondence shall include the Notice of Intent sent by the project owner to the SWRCB.

POTABLE WATER USE

SOIL&WATER-5: The project owner shall use potable water supplied by one of the following: (1) Mission Springs Water District (MSWD); or (2) onsite wells. The annual use of potable water shall not exceed 2-acre-feet per year. If MSWD or onsite wells are the source of potable water, the project owner shall monitor and record in gallons per day the total volume of potable water supplied to the CPV Sentinel Project. Prior to the use of potable water for commercial operation, the project owner shall either install and maintain metering devices as part of the water supply and distribution system or verify that the water supplier will

provide metering allowing the project owner to document project water use as required. The metering devices shall be operational for the life of the project.

Beginning with the commencement of commercial operation, the project owner shall prepare an annual summary of amount of water used for potable purposes. The summary shall include the monthly range and monthly average of daily water usage in cubic feet per month, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use. For calculating the total water use, the beginning of the one-year term will correspond to the date established for the annual compliance report submittal.

Verification: At least 60 days prior to commercial operation of CPV Sentinel project, the project owner shall submit to the CPM a copy of the water supply agreement, if applicable, and evidence that metering devices have been installed and are operational. Potable water use reporting may be based on metering from the supplier.

EVALUATION OF IMPACTS TO PRIVATE WELLS

SOIL & WATER-6: The project owner shall take the following steps to assess potential impacts to private well owners and to mitigate any such impacts.

The project owner will determine whether there are any private wells within a 3 mile radius of the project. If there are any such wells, the project owner will conduct groundwater modeling analysis to determine what type of impacts may result at these wells based on the site-specific conditions and well construction details. The project owner shall use the URS model developed during the AFC process for this project, and shall base its conclusions on the following values: transmissivity equal to Tyley's T and anisotropy equal to 2.

If this analysis indicates that the project will create a drawdown of five feet or more at any private well at any time over the project life of 30 years, the project owner shall provide the following mitigation to the well owner:

1. Payment or reimbursement (at the affected well owner's option) for increased energy costs calculated pursuant to **SOIL&WATER-7** due to the project's impacts; and

2. Payment or reimbursement of an amount equal to the cost of lowering the well owner's pump setting necessary to accommodate the decline in water level caused by the project, unless the project owner can demonstrate to the satisfaction of the CPM that the

existing pump setting is sufficiently deep that lowering is unnecessary. In the event that the pump setting cannot be lowered without deepening the well, the project owner shall pay or reimburse the private well owner an amount equal to the customary local cost of deepening the well. If the well cannot be deepened, the project owner shall pay or reimburse the private well owner an amount equal to the customary local cost of installation of a new well.

Verification: No later than thirty (30) days prior to start of project construction the project owner shall provide documentation showing the results of the mail notification and identification of any impacted well owners. If any private well owners are identified and if so the analysis showing what types of impacts. This documentation should be provided to the CPM for review and approval prior to implementing appropriate measures or methods of mitigation for impacts.

No later than 60 days prior to project operation the project owner shall provide documentation showing that any mitigation for private well impacts was undertaken and satisfied based on the requirements of the CPM and the property owner.

MITIGATION OF ENERGY USE IMPACTS ON PRIVATE WELLS

SOIL&WATER-7: Where it is determined that the project owner shall reimburse a private well owner for increased energy costs identified as a result of analysis performed in Condition of Certification **SOIL&WATER-6,** the project owner shall calculate the compensation owed to any owner of an impacted well as described below.

Increased cost for energy = change in lift/total system head x total energy consumption x costs/unit of energy

Where:

change in lift (ft) = calculated change in water level in the well resulting from project

total system head (ft) = elevation head + discharge pressure head

elevation head (ft) = difference in elevation between wellhead discharge pressure gauge and water level in well during pumping.

discharge pressure head (ft) = pressure at wellhead discharge gauge (psi) X 2.31

At least 30 days prior commencement of production pumping, the project owner shall submit to the CPM for review and approval the documentation showing which well owners must be compensated for increased energy costs and that the proposed amount is sufficient compensation to comply with the provisions of this condition.

1. Any reimbursements (either lump sum or annual) to impacted well owners shall be only to those well owners whose wells were in service within six months of the Commission decision and within a 3-mile radius of the project site.

2. The project owner shall notify all owners of the impacted wells within one month of the CPM approval of the compensation analysis for increase energy costs.

3. Compensation shall be provided on either a one-time lump-sum basis, or on an annual basis, as described below.

Annual Compensation: Compensation provided on an annual basis shall be calculated prospectively for each year by estimating energy costs that will be incurred to provide the additional lift required as a result of the project. With the permission of the impacted well owner, the project owner shall provide energy meters for each well or well field affected by the project. The impacted well owner to receive compensation must provide documentation of energy consumption in the form of meter readings or other verification of fuel consumption. For each year after the first year of operation, the project owner shall include an adjustment for any deviations between projected and actual energy costs for the previous calendar year.

One-Time Lump-Sum Compensation: Compensation provided on a one-time lump-sum basis shall be based on a well-interference analysis, assuming the maximum project-pumping rate of 1,100 AFY. Compensation associated with increased pumping lift for the life of the project shall be estimated as a lump sum payment as follows:

1. The current cost of energy to the affected party considering time of use or tiers of energy cost applicable to the party's billing of electricity from the utility providing electric service, or a reasonable equivalent if the party independently generates their electricity;

2. An annual inflation factor for energy cost of 3 percent; and

3. A net present value determination assuming a term of 30 years and a discount rate of 9 percent;

Verification: The verification for compensation required for increased lift shall be as follows:

1. No later than 30 days after CPM approval of the well drawdown analysis, the project owner shall submit to the CPM for review and approval all documentation and calculations describing necessary compensation for energy costs associated with additional lift requirements.

2. The project owner shall submit to the CPM all calculations, along with any letters signed by the well owners indicating agreement with the calculations, and the name and phone numbers of those well owners that do not agree with the calculations.

Compensation payments shall be made by March 31 of each year of project operation or, if lump-sum payment is selected, payment shall be made by March 31 of the first year of operation only. Within 30 days after compensation is paid, the project owner shall submit to the CPM a compliance report describing compensation for increased energy costs necessary to comply with the provisions of this condition.

SOIL&WATER-8: The CPV Sentinel Project shall use groundwater produced by the on-site wells identified in **SOIL&WATER-3** for all non-potable plant construction and process uses during operation including cooling and landscape irrigation.

a. Prior to the use of groundwater for commercial operation, the project owner shall install and maintain metering devices as part of the water supply and distribution system to document project process water use as required to monitor and record in hundreds of cubic feet per month the total volume(s) of water supplied to the CPV Sentinel Project from this water source. The metering devices shall be operational for the life of the project. Each to be constructed will be metered separately or provisions will be made to ensure water use from each well can be identified and documented.

b. The amount of groundwater that can be used for project process needs shall be limited as follows:

   1. No more than 1,100 acre-feet may be consumed in any calendar year; and

   2. In any given month, the amount of water that may be consumed is the total amount of water that has been recharged (pursuant to **SOIL&WATER-10**) 16 months or more prior to that month, minus the cumulative amount of water previously pumped for project process needs since the commercial operation date.

c. The project owner shall submit to the CPM an annual summary of daily groundwater use for project process needs, including monthly subtotals and an accumulation of all project groundwater use since the commercial operation date, and the accumulation of groundwater recharged in accordance with **SOIL&WATER-10.**

d. If insufficient water has been recharged for project process needs pursuant to **SOIL&WATER-10**, the project shall not operate, unless the CPM determines that:

1. circumstances beyond the project owner's control have temporarily prevented delivery of water purchased for project process needs to Desert Water Agency's spreading grounds; and

2. the quantity of water conserved through implementation of conservation measures in the Mission Creek Sub-basin pursuant to **SOIL&WATER-15**, together with the any residual water recharged pursuant to **SOIL&WATER-10** 16 months or more previously that has not yet been used, has resulted in conservation of water in an amount equal to or greater than that proposed to be used for project process needs 16 months or more in advance of the month in which it is to be used for project process needs.

The period of time during which conserved water may be used to meet the requirements of this condition is limited to the duration of when water delivery was precluded by circumstances beyond the project owner's control.

Verification: The project owner shall prepare an annual summary, which will include identification of the well or wells used, daily groundwater usage in gallons per day, maximum and minimum daily usage in for each month, and annually, and total volume of groundwater used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly maximum and minimum and yearly average water use by source. Calculations shall be performed on a calendar year basis.

At least sixty (60) days prior to commercial operation of the CPV Sentinel project, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational for process water supply and distribution.

SOIL&WATER-9: (Omitted)

GROUNDWATER RECHARGE

SOIL&WATER-10: The project owner shall ensure that its recharge of groundwater complies with the following:

1. Recharge shall occur at the Desert Water Agency's (DWA's) Mission Creek Spreading Grounds;

2. Water purchased by the project owner for recharge shall be in addition to State Water Project (SWP) supplies acquired by DWA under its entitlements as a State Water Project contractor (including DWA's

Table A allocation and any surplus SWP purchases) for its groundwater replenishment program;

3. The initial water used for recharge shall be the 8,350 acre-feet of Exchanged North Kern water (hereafter referred to as North Kern water) water secured from North Kern Water Storage District pursuant to the Water Supply Agreement between CPV Sentinel and DWA, dated August 19, 2008. Recharge of additional water must comply with subdivisions a) and b) of this condition and must be approved pursuant to **SOIL&WATER-11**; and

4. The applicant shall provide to the CPM an annual accounting of cumulative water recharged on a monthly basis throughout the operating life of the project as part of the Annual Compliance Report, and in coordination with the annual reporting requirements in **SOIL&WATER-16**.

Verification: If recharge of other water is approved by the CPM pursuant to **SOIL&WATER-11**, the project owner shall, within 60 days of that approval, submit to the CPM copies of final agreements between the purchaser and the seller of the other water, between it and DWA, and between DWA and MWD (if water is to be delivered through an exchange with MWD) that ensure that the other water will be delivered to the Mission Creek spreading grounds.

APPROVAL OF NEW RECHARGE WATER SOURCES
SOIL&WATER-11:

1. The project owner shall submit a Water Supply Plan identifying additional water for recharge to the CPM for review and approval when**,** following delivery of 6,700 acre-feet of North Kern water, the amount of water available for project process needs is reduced to 1,650 acre-feet as calculated in **SOIL&WATER-8**.

2. Any Water Supply Plan submitted pursuant to this Condition shall include the following:

   A. Identification of the water source;

   B. Demonstration of the project owner's legal entitlement to the water;

   C. Demonstration of CEQA compliance; and

   D. An estimated schedule for delivery to the DWA's Mission Creek Spreading Grounds, including applicable agreements with water supply, transfer and conveyance entities.

3. The project shall not utilize water other than North Kern water unless the CPM has approved the Water Supply Plan submitted pursuant to this Condition.

Verification: The project owner shall submit a Water Supply Plan that meets the requirements of this condition.

ZERO LIQUID DISCHARGE SYSTEM REQUIREMENTS

SOIL&WATER-12: The project owner shall treat all process wastewater streams with a Zero Liquid Discharge (ZLD) system that results in a residual solid waste. The solid waste shall be disposed of in the appropriate class of landfill suitable for the constituent concentrations in the waste. Surface or subsurface disposal of process wastewater from the CPV Sentinel is prohibited. The project owner shall operate the ZLD system in accordance with a ZLD management plan approved by the CPM. The ZLD management plan shall include the following elements:

1. A flow diagram showing all water sources and wastewater disposal methods at the power plant;

2. A narrative of expected operation and maintenance of the ZLD system;

3. A narrative of the redundant or back-up wastewater disposal method to be implemented during periods of ZLD system shutdown or maintenance;

4. A maintenance schedule;

5. A description of on-site storage facilities and containment measures;

6. A table identifying influent water quality; and

7. A table characterizing the constituent concentrations of the solid waste or brine and specifying the permit limits of the selected landfill.

The CPV Sentinel operation and wastewater production shall not exceed the treatment capacity of the ZLD system or result in an industrial wastewater discharge.

Verification: At least 60 days prior to the start of commercial operation, the project owner shall submit to the CPM evidence that the final design of the ZLD system has the approval of the Chief Building Officer. At least 60 days prior to the start of commercial operation, the project owner shall prepare a ZLD management plan for review and approval by the CPM. The ZLD management plan shall be updated by the project owner and submitted to the CPM for review and approval if a change in water source or infrastructure is needed.

In the annual compliance report, the project owner shall submit a status report on operation of the ZLD system, including dates and length of disruptions, maintenance activities performed, volumes of interim wastewater streams stored

on site, monthly volumes of residual salt cake or brine generated, and results of at least one annual sampling of the waste solids or brine comparing the constituent concentrations to the permit limits of the landfill. The annual compliance report shall contain an evaluation of whether the ZLD is being operated within the parameters described in the ZLD management plan. The ZLD management plan shall be updated by the project owner if the CPM has determined it is necessary based on the project owner's Annual Compliance Report.

COUNTY SEPTIC FACILITY PERMIT REQUIREMENTS

SOIL&WATER-13: The project owner will comply with the requirements of the Riverside County Department of Health and Human Services, Riverside County Ordinance Code 592.1, regarding a Septic Facility Permit for sanitary waste disposal facilities such as septic systems and leach fields.

Verification: The project owner will submit all necessary information and the appropriate fee to the county of Riverside to ensure that the project has complied with the county's sanitary waste disposal facilities requirements. A written assessment prepared by Riverside County of the project's compliance with these requirements must be provided to the CPM 60 days prior to the start of operation.

WATER SUPPLY CONVERSION OF PALM SPRINGS NATIONAL GOLF COURSE

SOIL&WATER-14: In accordance with the Water Conservation Funding Agreement, dated July 15, 2008, the project owner will fund construction of the water supply conversion of the PSNGC from groundwater use to recycled water use, and comply with the following requirements:

1. The project owner shall pay $1,000,000 to the DWA for enhancements and improvements to DWA's reclaimed water system intended to maximize the availability of reclaimed water to DWA costumers;

2. The project owner shall pay $300,000 to DWA for fees and construction costs to enable delivery of the recycled water from DWA's South Murray Canyon Drive service main to the PSNGC.

3. The project owner shall, in each calendar year following the start of commercial operation, ensure that the maximum available supply of DWA's recycled water that can be beneficially used by PSNGC will be delivered and used by PSNGC.

4. The project owner shall obtain records from DWA showing the volume of recycled water used and report, in acre-feet, the monthly and annual water use in the Annual Compliance Report. If any

groundwater is used for irrigation of PSNGC, the project owner shall also obtain records showing the monthly and annual totals in acre-feet in the Annual Compliance Report and provide an explanation of why irrigation with groundwater was necessary.

5. In the event the PSNGC no longer requires recycled water service, the project owner shall notify the CPM within 10 days and shall comply with the requirements of **SOIL&WATER-16**.

Verification: The project owner shall do all of the following:

No later than 60 days prior to the start of the PSNGC water supply conversion project construction the project owner will provide the CPM with an agreement and schedule demonstrating the PSNGC conversion project will be constructed and operational prior to pumping groundwater for use on the CPV Sentinel Project.

No later than 60 days prior to the start of conversion project operation, the project owner will provide to the CPM a copy of the agreement between DWA and PSNGC that ensures they will take delivery of recycled water for all their irrigation needs as soon as it is available. The CPV Sentinel Project may not operate until the PSNGC conversion project is operational.

The project owner shall prepare an annual summary to be included in the annual compliance report, which will include the range and average of monthly recycled and groundwater use in acre-feet, and total water used on a monthly and annual basis in acre-feet. For years subsequent to the initial year of operation, the annual summary will also include the yearly range and yearly average water use by source. Calculations shall be on a calendar year basis.

IRRIGATION CONTROLLER PROGRAM

SOIL&WATER-15: In accordance with the WSP, the project owner will fund installation by DWA of irrigation controllers in existing residences and businesses in DWA's service area to achieve fresh water conservation consistent with the WSP. The project owner shall:

1. Contribute funding sufficient for DWA's installation of 4,800 irrigation controllers in its services area at existing businesses or residences to conserve an estimated 480 to 706 acre-feet of groundwater per year; and

2. Cause DWA to complete an evaluation of the effectiveness of the irrigation controller program using methods similar to those used by CVWD in their Final Report dated June 21, 2007 or other methods to be approved by the CPM.

Verification: The project owner shall do all of the following:

1. No later than one year after funding implementation of the irrigation controller program the project owner shall develop and submit to the CPM for approval a methodology and outline for a report to evaluate the effectiveness of the irrigation controller program and estimate the water savings in the Upper Coachella Valley Groundwater Basin. The methodology shall address how to account for the number of controllers that remain in use over time as well as the amount of savings per controller installed.

2. Each year after initiating the irrigation controller program, and annually thereafter, for the life of the project, the project owner shall analyze the effectiveness of the irrigation controller program using the approved methods and report on the total water conservation achieved. The report should be included in the Annual Compliance Report for approval by the CPM.

3. Submit to the CPM, as part of the Annual Compliance Report documentation, the following:

   - The annual invoice paid to the DWA, in accordance with the Water Conservation Funding Agreement dated July 15, 2008. This shall include proof of invoice payment to the DWA;
   - The estimated total and average water conservation achieved based on the number of controllers; and
   - The accounting of the project owner's contributions to DWA's Irrigation controller Program over the life of the program.

   Calculations shall be on a calendar year basis.

REPORTING AND VERIFYING THE FRESH WATER CONSERVATION PROGRAM BENEFITS

SOIL&WATER-16: The project owner shall perform the following:

1. Provide annual reporting to assess whether the fresh water conservation benefits achieved by implementation of **SOIL&WATER-14** and **SOIL&WATER-15** have met the following requirements:

   A. Achieve 1,000 AFY in fresh water conservation benefits by the end of the first full calendar year following the project commercial operation date, increasing by 100 AFY annually over the subsequent 5 years to 1,500 AFY by the end of the 6th full calendar year following the commercial operation date.

   B. Achieve minimum cumulative water conservation benefits of 1,500 AFY for each year following the 6h full calendar year following the commercial operation date for the life of the project.

2. If the fresh water conservation benefits of the water supply conversion of the PSNGC and the irrigation program projects identified in 1. A and B above cannot be sustained for any reason, the project owner shall submit

a revised Water Conservation Plan within 6 months of the annual report, obtain CPM approval of the revised plan, and implement additional fresh water conservation projects on the schedule identified in the approved plan that will achieve fresh water conservation that will include the makeup of any deficits in meeting the water conservation requirements of 1. A and B of this condition.

Verification: For each year following the commercial operation date, the project owner shall provide an Annual Compliance Report, an accounting of fresh water conservation benefits for the previous calendar year, and a summary of annual fresh water conservation quantities since inception. If the water conservation benefits are not in conformance with the fresh water performance measures included in this Condition, the project owner shall submit:

1. A revised Water Conservation Plan within 6 months of the annual report;

2. Obtain CPM approval of the revised plan; and

3. Implement additional fresh water conservation projects on the schedule identified in the approved plan that will achieve fresh water conservation that will include the makeup of any deficits in meeting the water conservation requirements of 1. A and B of this Condition.

C. CULTURAL RESOURCES

The term “cultural resource” is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Res. Code, § 5024.1; Cal. Code Regs., tit. 14 § 4850 et seq.) The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Analysis in this topic area considers three kinds of cultural resources: prehistoric, historic, and ethnographic, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

Prehistoric archaeological resources are those materials relating to prehistoric human occupation and use of an area. These resources may include sites and deposits, structures, artifacts, rock art, trails, and other traces of Native American human behavior. In California, the prehistoric period began over 11,500 years ago and extended through the eighteenth century until 1769, the time when the first Spaniards settled in what is now the State of California.

Historic period resources are those materials, archaeological and architectural, usually associated with Euro-American exploration and settlement of an area and the beginning of a written historical record. They may include archaeological deposits, sites, buildings and structures, travel routes, artifacts, or other evidence of human activity. Under federal and state requirements, historical cultural resources must be more than 50 years old to be considered of potential importance. A resource less than 50 years of age may be historically important if the resource is of exceptional significance.

Ethnographic resources are those materials important to the heritage of a particular ethnic or cultural group such as African Americans, Mexican Americans, Native Americans, or European, Asian, or Latino immigrants and their descendants. They may include traditional resource-collecting areas, ceremonial sites, topographic features, cemeteries, shrines, or ethnic neighborhoods and structures.

The evidence presented was uncontested. (11/3/08 RT 11, 31; Exs. 9; 41; 71; 76; 104; 105; 200, § 4.3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The project is located in the Colorado Desert, in the northwestern corner of the Coachella Valley. It is approximately 25 miles northwest of the prehistoric shoreline of Lake Coachella. (Ex. 200, p. 4.3-5.) Most of the sites of cultural resources interest within this area represent late prehistoric occupational episodes. The number of late prehistoric sites represents the habitation of large populations, initially dependent upon the lake environment. There is very little evidence to support the presence of human occupation within the Coachella Valley during the late Pleistocene or early Halocene periods. (Ex. 200, p. 4.3-6.)

Ethnographically, the project area was occupied by the Cahuilla. The Cahuilla villages were permanent and predominantly located in a valley or within or near the mouth of a canyon. Domestic structures included brush shelters or domed-shaped or rectangular houses. These people produced exquisite basketry.
(Ex. 200, p. 4.3-9.)

The first historic account within the Coachella Valley occurred in 1775 when Spanish Army Captain Juan Batista de Anza entered en route to San Francisco Bay. However, substantial wind activity and the scarcity of water deferred long-term settlement by Europeans. Palm Springs appears to be the first area in the northern Coachella Valley to undergo long-term occupation by non-Indian peoples, beginning in the latter part of the late 1880's. (Ex. 200, p. 4.3-11.) Desert Hot Springs was first settled in 1913; much development happened after World War II. (Ex. 200, p. 4.3-12.)

2. Cultural Resources Inventory

The evidence establishes that the Sentinel site and laydown area, as well as the routes for the associated linear facilities, were thoroughly analyzed for the presence of cultural resources. On February 16, 2007, Staff at the California Historical Resources Information System (CHRIS), Eastern Information Center (EIC), at the Department of Anthropology, University of California, Riverside, conducted a records search for the proposed Sentinel Project. The records search consisted of two separate search radii. The first search included a one-mile buffer zone encompassing the project site and the proposed laydown area, and the second search included a quarter-mile radius around the pipeline routes. According to information available in the CHRIS files, there have been 23

previous cultural resource studies conducted within these two search radii, eight of which covered the same areas as the project's area of potential effects (APE). As a result of these previous surveys, a total of three cultural resources (one historic property and two prehistoric isolates), have been identified. However, none of these previously recorded sites are within the CPV Sentinel Project APE.

A subsequent records search was performed on February 13, 2008. This search covered a one-half-mile radius around the proposed recycled water pipeline and identified previously conducted archaeological surveys and studies, including previously recorded archaeological sites. A total of three previously conducted surveys had been performed within this new search area. One previously recorded site was identified and is located within approximately 0.5 mile of the proposed water pipeline.

The Applicant also contacted the Native American Heritage Commission (NAHC) by letter on February 13, 2007, to request information about traditional cultural properties (for example, cemeteries, sacred places) in and around the project area, as well as a list of Native American contacts with knowledge of cultural resources applicable to this project.

A representative of the NAHC responded on February 14, 2007, indicating that there were no such properties within the project area. The NAHC's response also included a list of Native Americans interested in consulting on development projects. On February 16, 2007, the Applicant sent letters (with a map of the project area) to 13 Native American individuals/organizations that the NAHC had identified as potentially having heritage concerns in the project area. Responses indicated that no known cultural resources were within the project area. (Ex. 200, pp. 4.3-13, 4.3-17 to 4.3-18.) The record search conducted at the CHRIS also did not indicate the presence of Native American traditional cultural properties.

Staff also requested from the NAHC a list of Native Americans in the proposed project area. Staff sent letters to Native American groups and individuals on October 23, 2007, asking for information regarding Native American concerns in the project area. The Morongo Band requested cultural resources information and the Applicant provided the information. The tribe concurred with the project's recommended mitigation measures and requested that state law be followed if human remains were discovered. The Agua Caliente Band of Cahuilla Indians also responded, stating that the project area was a traditional use area for them and that they had knowledge of cultural resources previously discovered in the

vicinity of the project. The Agua Caliente Band also requested information about cultural resources activities conducted for the project. The Project Owner provided that information on January 22, 2008. (Ex. 200, pp. 4.3-13; 4.3-17 to 4.13-18.)

The evidence further indicates that, on March 5-7 and on May 15, 2007, Applicant performed field surveys for the project area, including a 200 foot wide buffer zone around the site and the laydown area as well as a 50 foot wide zone on both sides of the routes for the project's linears. As a result of these surveys, four new historical period archaeological sites and a single isolate were indentified. Applicant then performed a field survey of the transmission line route on July 19, 2008. No additional resources were discovered. (Ex. 200, pp. 4.3-14 to 4.3-17.)

The evidence of record identifies the specific resources which were evaluated as a result of these cultural resources studies and surveys. (Ex. 200, pp. 4.3-15 to 4.3-17.)

3. Potential Impacts and Mitigation

Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground. Direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic standing structures when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of nearby historic structures. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, or when the new structures produce something harmful to the materials or structural integrity of the historic structures such as emissions or vibrations.

Generally speaking, indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility and opportunities for

vandalism, or greater weather exposure becomes possible. (Ex. 200, pp. 4.3-19 to 4.3-20.)

No significant standing historic structures were identified in the area within one mile of the proposed project [1], so no impact to the integrity of setting, association, or feeling of any such resources in the area surrounding the proposed CPV Sentinel Project will result. Due to the absence of historically significant standing structures within a mile of the site and the absence of project-related impacts that materially impair the significance of such historical resources, no mitigation measures are required for this class of cultural resources. Furthermore, no ethnographic resources, either previously recorded or newly disclosed in the communications with Native Americans initiated by the Applicant or by the Staff for the proposed project, were identified in the vicinity. (Ex. 200, pp. 4.3-20 to 4.3-21.)

Conditions **CUL-1** through **CUL-7** incorporate Applicant's proposed mitigation measures as well as Staff's recommendations to ensure that unknown archaeological deposits are properly identified and treated. These Conditions require the Project Owner to implement a Cultural Resources Monitoring and Mitigation Plan (CRMMP) and to employ a Cultural Resources Specialist to monitor all construction locations where ground excavation activities occur. A Native American will join the archaeologist in monitoring construction activities if cultural resources are discovered. Impacts to cultural resources could also occur during project operation if the gas or water pipeline requires repair. Excavation could uncover previously unknown subsurface archaeological resources. Therefore, the mitigation measures apply under any circumstances when project-related ground disturbance is necessary. (Ex. 200, pp. 4.3-21 to 4.3-22.) The evidence establishes that these measures are sufficient to prevent the occurrence of significant direct or indirect cultural resources impacts.

Finally, the evidence of record shows that two additional projects are proposed within one-half mile of Sentinel. Impacts to as-yet undiscovered subsurface archaeological sites can be reduced to less-than-significant levels by requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated as significant. Impacts

[1] A total of 12 standing structures over 50 years of age were identified within one-half mile of the proposed project. Only one of these structures would have been directly impacted by construction activities. This building, along with its associated garage, was demolished by the owner in January 2008. (Ex. 200, pp. 4.3-20 to 4.3-21.)

to human remains can be mitigated by following the protocols established by state law in Public Resources Code section 5097.98. Since the impacts from the Sentinel Project will be mitigated to a level less than significant by compliance with **CUL-1** through **CUL-8**, and since similar protocols can be applied to other current and future projects in the area, the evidence does not support the proposition that the incremental effects of Sentinel will be cumulatively considerable when viewed in conjunction with other projects. (Ex. 200, p. 4.3-22.)

FINDINGS OF FACT

Based on the uncontested evidence of record, the Commission makes the following findings and conclusions:

1. Archival research and field surveys did not reveal any archaeological or historic resources within the project or laydown areas, or along the routes of the linear facilities, which will be significantly impacted by project construction or operation.

2. Construction activities associated with the Sentinel Project and related facilities present a potential for adverse impacts to as yet undiscovered cultural resources.

3. The potential for impacts to cultural resources may not be known until subsurface soils are exposed during excavation and construction.

4. The Project Owner will take numerous preventative measures to reduce or avoid potential impacts to cultural resources, including employment of a qualified Cultural Resource Specialist (CRS), to oversee worker training, monitoring, and materials management during construction.

5. Prior to ground disturbance, the Project Owner will submit a Cultural Resource Monitoring and Mitigation Plan (CRMMP) detailing the monitoring for cultural resources during construction and the management of any resources found.

6. The Project Owner will report on all monitoring activities through a Cultural Resources Report (CRR).

7. Prior to ground disturbance the Project Owner will provide a Worker Environmental Awareness Program (WEAP), instructing construction personnel on recognition, avoidance, and handling of any discovered cultural resources.

8. The Project Owner will obtain the services of a Native American monitor to observe ground disturbance activities in areas where Native American artifacts are discovered.

9. The Project Owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered at the project site or along any related linear construction routes.

10. The potential for the Sentinel Project to incrementally contribute to cumulative impacts on cultural resources is insignificant.

11. The mitigation measures contained in the Conditions of Certification, below, ensure that any direct, indirect, or cumulative adverse impact to cultural resources resulting from project-related activities will be insignificant.

CONCLUSION OF LAW

1. We therefore conclude that with implementation of the Conditions of Certification below, the project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision, and will not create any significant indirect, direct, or cumulative adverse impacts

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance,[2] the Project Owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternates, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities required in accordance with the Conditions of Certification (Conditions). The CRS may elect to obtain the services of Cultural Resources Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The Project Owner shall ensure that the CRS makes recommendations regarding the eligibility to the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner (discovery). No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to Compliance

[2] Ground disturbance includes “preconstruction site mobilization”, “construction ground disturbance”, and “construction grading, boring and trenching” as defined in the General Conditions for this project.

Project Manager (CPM) approval of the CRS unless specifically approved by the CPM.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in the Code of Federal Regulations, 36 CFR Part 61. In addition, the CRS shall have the following qualifications:

1. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field; and
2. Qualifications shall include at least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California; and
3. Qualifications shall include at least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to effectively implement the Conditions of Certification.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historical archaeology, or a related field and one year of experience monitoring in California; or
2. an AS or AA degree in anthropology, archaeology, historical archaeology, or a related field and four years' experience monitoring in California; or
3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology, or a related field and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialists (e.g. historical archaeologist, historian, architectural historian, and/or physical anthropologist) shall be submitted to the CPM for approval.

Verification:

1. At least 45 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.
2. At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the Project Owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the Project Owner shall also provide to the approved new CRS the AFC and all cultural documents, field notes, photographs, and other cultural materials generated by the project. If there is no alternate CRS in place to conduct the duties of the CRS, a previously approved monitor may serve in place of a CRS so that construction may continue up to a maximum of three days without a CRS. If cultural resources are discovered, then construction shall remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.
3. At least 20 days prior to preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resource monitoring required by this Condition. If additional CRMs are obtained, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs at least five days prior to the CRMs beginning on-site duties.
4. At least 10 days prior to beginning tasks, the resume(s) of any additional technical specialists shall be provided to the CPM for review and approval.
5. At least 10 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall confirm in writing to the CPM that the approved CRS will be available for on-site work and is prepared to implement the cultural resources Conditions.

CUL-2 If the CRS has not previously worked on the project, the Project Owner shall provide the CRS with copies of the AFC, data responses, and confidential cultural resources reports for the project. Prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall also provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear

facilities. Maps shall include the appropriate U.S. Geological Survey (USGS) quadrangles and a map at an appropriate scale (for example, 1:2000 or 1 inch = 200 feet) 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 submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction activities shall occur prior to CPM approval of maps and drawings unless specifically approved by the CPM.

If construction of the project will proceed in phases, maps and drawings not previously provided shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

The Project Owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases. No ground disturbance shall occur prior to CPM approval of maps and drawings unless specifically approved by the CPM.

Verification:

1. At least 40 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall provide the AFC, data responses, and confidential cultural resources documents to the CRS, if needed, and the subject maps and drawings to the CRS and CPM. The CPM shall review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.
2. If there are changes to any project-related footprint, revised maps and drawings shall be provided at least 15 days prior to start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction for those changes.
3. If project construction is phased, if not previously provided, the Project Owner shall submit the subject maps and drawings 15 days prior to each phase.
4. On a weekly basis during preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

5. Within five days of identifying changes, the Project Owner shall provide written notice of any changes to scheduling of a construction phase.

CUL-3 Prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CPM shall provide the Project Owner with a model CRMMP to adapt for project use. The CRMMP shall be provided in the Archaeological Resource Management Report (ARMR) format and, per ARMR guidelines, the author's name shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Implementation of the CRMMP shall be the responsibility of the CRS and the Project Owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the Project Owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. 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. A prescriptive treatment plan may be included in the CRMMP for limited resource types. A refined research design shall be prepared for any resource where data recovery is required.
2. The following statement shall be included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The Conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the Conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in Appendix A."
3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases.
4. Identification of the person(s) expected to perform each of the tasks, his/her 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 construction and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.
7. A statement that all cultural resources encountered shall be recorded on a Department of Parks and Recreation (DPR) form 523, mapped, and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections* into a retrievable storage collection in a public repository or museum.
8. A statement that the Project Owner shall pay curation fees for artifacts recovered and related documentation produced during cultural resources investigations conducted for the project. The Project Owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities.
9. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resources materials that are encountered during construction and cannot be treated prescriptively.
10. A description of the contents and format of the Cultural Resources Report (CRR), which shall be prepared according to ARMR Guidelines.

Verification:

1. 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.
2. At least 30 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, a letter shall be provided to the CPM indicating that the Project Owner will pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The Project Owner shall submit the Cultural Resources Report (CRR) to the County of Riverside, and to the Chairpersons of all Native American groups that requested additional information on the CVP Sentinel cultural resources, for review and comment. After the Project Owner has received comments from the County of Riverside and from the Native American Chairpersons, he/she shall submit the CRR and all received comments to the CPM for review and approval. The CRR shall be written by or under the direction of the CRS, shall be provided in the ARMR format, and shall conform to Riverside County's requirements for archaeological reports. The CRR shall report on all field activities including dates, times and locations, findings, samplings, and analyses. All survey reports, Department of Parks and Recreation (DPR) 523 forms, and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as an appendix to the CRR.

If the Project Owner requests a suspension of construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until 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.

If artifacts and documentation are to be curated, the Project Owner shall provide documentation for approval by the CPM.

Verification:

1. Within 90 days after completion of ground disturbance (including landscaping), the Project Owner shall submit the CRR to the Cultural Resources Specialist for the County of Riverside and the Chairpersons of all Native American groups that requested additional information on CPV Sentinel cultural resources. Sixty days thereafter, whether or not the county or Native Americans provide comments, the Project Owner shall submit the CRR and the comments, if any, 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.
2. Within 90 days after completion of ground disturbance (including landscaping), the Project Owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the curation of Archaeological Collections to

accept cultural materials, if any, from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

3. Within 10 days after CPM approval, the Project Owner shall provide documentation to the CPM confirming that copies of the CRR have been provided to the SHPO, the CHRIS, and the curating institution if archaeological materials were collected.
4. 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.

CUL-5 Prior to and for the duration of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, the Project Owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment. The 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 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 shall be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

1. a discussion of applicable laws and penalties under the law;
2. samples or visuals of artifacts that might be found in the project vicinity;
3. instruction that the CRS, alternate CRS, and CRMs have the authority to halt construction 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;
4. instruction that employees 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 will be determined by the construction supervisor and the CRS;
5. an informational brochure that identifies reporting procedures in the event of a discovery;
6. an acknowledgement form signed by each worker indicating that he/she has received the training; and
7. a sticker that shall be placed on hard hats indicating that environmental training has been completed.

No preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction shall occur prior to implementation of the WEAP program unless specifically approved by the CPM.

Verification:

1. At least 30 days prior to the beginning of pre-construction site mobilization, the CRS shall provide the training program draft text and graphics, and the informational brochure, to the CPM for review and approval. The CPM will provide to the Project Owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.
2. On a monthly basis, the Project Owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The Project Owner shall ensure that the CRS, alternate CRS, or CRMs monitor all ground disturbance at the project site and linear facilities routes, and ground disturbance at laydown or other ancillary areas, to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all earth-moving activities on the construction site or along the linear facility routes for as long as the activities are ongoing. Full-time archaeological monitoring shall require one monitor per excavation area where machines are actively moving earth. If an excavation area is too large for one monitor to effectively observe the earth moving, an additional monitor(s) shall be retained to monitor.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. Copies of the daily logs shall be provided by the CRS to the CPM if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended. The CRS or alternate CRS shall report daily to the CPM on the status of cultural resources-related activities at the

construction site, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

The CRS, at his or her discretion or at the request of the CPM, may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff (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 the situation, the CRS and/or the Project Owner shall notify the CPM by telephone or e-mail within 24 hours of any incidents of non-compliance with the Conditions and/or applicable LORS. 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.

A Native American monitor shall be obtained to monitor ground disturbance in areas where Native American artifacts may be discovered. Informational (contact) lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the Project Owner shall immediately inform the CPM. The CPM shall either identify potential monitors or shall allow ground disturbance to proceed without a Native American monitor.

If a Native American tribe (listed by the NAHC) requests information regarding discoveries of Native American material, that information shall be provided by the Project Owner to the chairperson of the requesting tribe.

Verification:

1. At least 30 days prior to the start of ground disturbance, the CPM shall provide to the CRS reproducible copies of forms to be used as daily monitoring logs. While monitoring is ongoing, the Project Owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS.

2. Each day that no discoveries are made, the CRS shall provide a statement that “no cultural resources over 50 years of age were discovered” to the CPM as an e-mail or in some other form acceptable to the CPM, except during suspension of monitoring or when monitoring has concluded.
3. On a monthly basis, while monitoring is ongoing, the Project Owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS. Copies of daily logs shall be retained by the Project Owner and made available for audit by the CPM.
4. At least 24 hours prior to implementing a proposed change in monitoring level, documentation justifying the change shall be submitted to the CPM for review and approval.

CUL-7 The Project Owner shall grant authority to halt construction to the CRS, alternate CRS, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event cultural resources over 50 years of age, or if younger and considered exceptionally significant are found, or impacts to such resources can be anticipated, construction shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. Monitoring and daily reporting as provided in these Conditions shall continue during all ground-disturbing activities wherever project construction is not halted. The halting or redirection of construction shall remain in effect until the CRS has visited the discovery and all of the following have occurred:

1. The CRS has notified the Project Owner, and the CPM has been notified within 24 hours of the discovery or by Monday morning if the cultural resources discovery occurs between 8:00 a.m. on Friday and 8:00 a.m. on Sunday morning, including a description of the discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of eligibility, and recommendations for mitigation of any cultural resources discoveries, whether or not a determination of significance has been made;
2. The CRS has completed field notes, measurements, and photography for a DPR 523 primary form. The description entry of the 523 form shall include a recommendation on the significance of the find. The Project Owner shall submit completed forms to the CPM; and
3. The CRS, the Project Owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS’s proposed data recovery, if any, including the curation of the artifacts or other appropriate mitigation;

and any necessary data recovery and mitigation have been completed.

Verification:

1. At least 30 days prior to the start of preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction, 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 construction activities in the vicinity of a cultural resources discovery, and that the Project Owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 a.m. on Friday and 8:00 a.m. on Sunday morning.
2. 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 concludes is more appropriate for the subject cultural resource.

CUL-8 If fill soils must be acquired from a non-commercial borrow site or disposed at a non-commercial disposal site, unless less than five year-old surveys of these sites for archaeological resources are documented and approved by the CPM, the CRS shall survey the borrow and/or disposal site(s) for cultural resources and record on DPR 523 forms any that are identified. When the survey is completed, the CRS shall convey the results and recommendations for further action to the Project Owner and the CPM who will determine what, if any, further action is required. If the CPM determines that significant archaeological resources that cannot be avoided are present at the borrow site, all these Conditions of Certification shall apply. The CRS shall report on the methods and results of these surveys in the 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.

D. GEOLOGY AND PALEONTOLOGY

This topic summarizes the evidence on potential geological hazards that could affect project operation, including faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, tsunamis and seiches. It also reviews evidence on whether project-related activities could result in adverse impacts to significant geological and paleontological resources and, if so, whether the project's potential impacts will be adequately mitigated. The parties did not dispute any matters related to this topic. (11/03/08 RT 14; Exs. 21, 22, 58, 59, 82, 84, 122, 123, 124, 200, p. 5.2 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Geologic Hazards

The Applicant submitted a "Geological/Seismic Hazards Evaluation" also referred to as the "2007 Geotechnical Report" for the Project. (Ex. 84.) The evidence indicates, however, that the 2007 Geotechnical Report was not complete and that Applicant will provide an "Addendum" to finalize the evaluation prior to site grading. (Ex. 200, p. 5.2-15 et seq; Ex. 82, p. 52 et seq.) We have added Condition **GEO-1** to require submittal of the Addendum. The **Facility Design** Conditions of Certification **GEN-1**, **GEN 5**, and **CIVIL 1** require the Project Owner to submit a Project-Specific Geotechnical Report to comply with the current California Building Code (CBC) and other applicable LORS prior to site grading. The mitigation measures described in the evidentiary record and in Applicant's proposed Conditions on geological hazards shall be incorporated, if appropriate, in the Project-Specific Geotechnical Report required by this Decision and updated to reflect CBC standards in effect when grading begins. (Ex. 200, p. 5.2-15 et seq.; Ex. 21, p. 7.15-19 et seq.)

The project site is located in an active geological area with the potential for intense levels of earthquake-related ground shaking.[1] The San Andreas (Banning) Fault is within 0.25 mile of the site and several other major active faults are within twenty miles of the site. The Banning Fault is considered the southern boundary of the Transverse Ranges geomorphic province, which is characterized by compressional tectonics and east-west-striking thrust and reverse faults. Across the Banning Fault to the south are the Peninsular Ranges geomorphic

[1] The California Division of Mines and Geology and the California Geological Survey have identified the site vicinity as an area subject to strong ground shaking under the California Seismic Hazards Mapping Act. (Ex. 21, p. 7.15-13 et seq; Ex. 200, pp. 5.2-3, 5.2-15.)

province (west) and the Colorado Desert geomorphic province. Both regions are characterized by northwest-trending right-lateral strike-slip faults such as the San Andreas Fault. (Ex. 200, pp. 5.2-1, 5.2-5; Ex. 21, p. 7.15-2.)

The evidence shows that nine earthquakes of magnitude 5.5 or greater have occurred on active faults within 30 miles of the site, and a total of 40 high magnitude earthquakes have occurred within 100 miles of the site since 1800. The area is designated Seismic Zone 4 under the CBC for the highest level of earthquake activity.[2] (Ex. 200, **Geology and Paleontology Table 4**, pp. 5.2-10, 5.2-15; Ex. 21, p., 7.15-13, **Table 7**.15-1.)

Staff's **Geology and Paleontology Table 3**, replicated below, lists the most significant active faults in the project vicinity. The table includes the estimated peak acceleration and intensity at the project site during a maximum magnitude earthquake on each fault. (Ex. 200, p. 5.2-8.)

Geology and Paleontology Table 3
Active Faults in the Project Area

Fault Name	Distance From Site (mi)	Maximum Earthquake Magnitude (Mw)	Estimated Peak Site Acceleration (g)	Fault Type* and Strike	Fault Class
San Andreas (Banning) – Southern	0.4	7.4	0.756	RL-SS, R (NW)	A
San Andreas – Coachella	6.0	7.1	0.378	RL-SS (NW)	A
Pinto Mountain	10.0	7.0	0.258	LL-SS (E-W)	B
Burnt Mountain	11.2	6.4	0.173	RL-SS (N-S to NW)	B
Eureka Peak	13.8	6.4	0.150	RL-SS (N-S to NW)	B
Landers	18.1	7.3	0.197	RL-SS (N-S to NW)	B
North Frontal Fault Zone (East)	18.1	6.7	0.174	R (E-W)	B
San Jacinto – Anza	23.1	7.2	0.155	RL-SS (NW)	A
San Jacinto – San Jacinto Valley	23.9	6.9	0.129	RL-SS (NW)	B
South Emerson – Copper Mountain	26.4	6.9	0.120	RL-SS (NW)	B
North Frontal Fault Zone (West)	26.7	7.0	0.152	R (E-W to NE)	B
Johnson Valley (Northern)	27.3	6.7	0.105	RL-SS (NW)	B

[2] The Banning Fault is the subject of several Fault Evaluation Reports conducted under the Alquist-Priolo Earthquake Fault Act for local development in the area. Segments of the San Andreas Fault in the Project vicinity, including the Banning Fault, are categorized as Type A faults, which are capable of producing earthquakes of magnitude 7.0 or greater. (Ex. 200, pp. 5.9-2, 5.9-15 et seq.)

San Jacinto – Coyote Creek	33.3	7.3	0.137	RL-SS (NW)	B
Fault Name	Distance From Site (mi)	Maximum Earthquake Magnitude (Mw)	Estimated Peak Site Acceleration (g)	Fault Type* and Strike	Fault Class
Calico – Hidalgo	34.2	6.8	0.095	RL-SS (NW)	B
Helendale – S. Lockhart	34.5	7.1	0.109	RL-SS (NW)	B
Pisgah – Bullion Mtn. – Mesquite Lake	34.6	7.1	0.108	RL-SS (NW)	B
San Jacinto – San Bernardino	38.5	7.1	0.108	RL-SS (NW)	B
Cleghorn	43.4	6.7	0.081	R (E-W)	B
Elsinore – Temecula	45.4	6.5	0.066	RL-SS (NW)	B
Elsinore – Julian	46.2	6.8	0.075	RL-SS (NW)	A
Elsinore – Glen Ivy	48.8	7.1	0.086	RL-SS (NW)	B
Earthquake Valley	52.1	6.8	0.071	RL-SS (NW)	B
Cucamonga	52.3	7.0	0.091	R (E-W)	A
San Jacinto – Borrego	55.3	6.6	0.058	RL-SS (NW)	B
Chino – Central Avenue – (Elsinore)	57.5	6.7	0.072	RL-SS (NW)	B
San Andreas / 1857 Rupture	60.6	7.8	0.101	RL-SS (NW)	A
* RL-SS, LL-SS – Right-Lateral and Left-Lateral Strike-Slip; R – Reverse; N – Normal; BT – Blind Thrust					

Source: Ex. 200, p. 5.2-8; Ex. 21, Table 7.15-2.

Seismic Activity. Although no active faults have been mapped within the project site, the San Andreas (Banning) Fault crosses the temporary laydown area, utility corridor, and gas transmission line (twice). (Ex. 21, p. 7.15-13; Ex. 200, p. 5.2-15.)

The Alquist-Priolo Earthquake Fault Act requires a 50-foot setback for newly occupied buildings from the surface trace of an active fault. Condition of Certification **GEN-1** requires the Project Owner to comply with applicable building standards on seismicity, including the setback requirements. Condition **MECH 1** requires compliance with industry standards on seismicity for construction of the natural gas pipeline, such as installation of pressure sensitive shut-off valves. (Ex. 200, p. 5.2-16.) The evidence indicates that compliance with applicable LORS will ensure the project can withstand effects of potential seismic activity in the site vicinity. (*Id*., p. 5.2-21.)

Liquefaction. The Applicant's 2007 Geotechnical Report indicates that the project site is underlain by dense alluvial sands mixed with gravel and that ground water is found at a depth greater than 40 feet below the surface.[3]

[3] The soil profile for the site is Type D. The estimated peak horizontal ground acceleration for the site is 1.25 times the acceleration of gravity (1.25g) for bedrock acceleration based on a 2 percent probability of exceedence in 50 years, and 0.75 times the acceleration of gravity (0.75g) based on

Liquefaction is a condition where cohesionless soil may lose shear strength because of sudden increase in pore water pressure caused by an earthquake. According to the evidence, dense alluvial sands and gravels below a depth of 10 feet are not susceptible to liquefaction, especially in the absence of ground water. Therefore, the potential for liquefaction at the site is considered negligible but a final evaluation and necessary mitigation measures will be addressed in the Project-Specific Geotechnical Report required by Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**. (Ex. 200, p. 5.2-6; Ex. 21, p. 7.15-14; Ex. 84, p. 14.)

Dynamic Compaction. Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume, as the soil grains tend to rearrange into a more dense state (an increase is soil density), which can result in settlement of overlying structural improvements. Although soil compaction is at the site is unlikely, the potential for and mitigation of the effects of dynamic compaction during an earthquake will be addressed in the Project-Specific Geotechnical Report required by Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**. Standard industry mitigation methods include deep foundations (driven piles; drilled shafts) for severe conditions, geogrid reinforced fill pads for moderate severity, and over-excavation and replacement for areas of minimal hazard. (Ex. 84, p. 15; Ex. 200, p. 5.2-17.)

Hydrocompaction. Hydrocompaction is generally limited to young soils that were deposited rapidly in a saturated state. There is no conclusive evidence on this condition at the site. The Project Owner agreed to analyze the potential for and mitigation of the effects of hydrocompaction of site soils in an Addendum to the 2007 Geotechnical Report. (Ex. 82, p. 52 et seq.) Condition **GEO-1** requires the Project Owner to provide the Addendum. Conditions **GEN-1**, **GEN-5**, and **CIVIL-1** require the Project-Specific Geotechnical Report to address appropriate engineering for hydrocompaction issues. Typical mitigation measures include over-excavation/replacement, mat foundations or deep foundations, depending on severity and foundation loads. (Ex. 200, p.5.2-17; Ex. 84, p. 15 et seq.)

Subsidence. Local subsidence or settlement may occur when areas containing compressible soils are subjected to foundation loads or increased moisture due to water infiltration. There is no evidence that these physical conditions exist at the site. Thus, the potential for seismically induced ground subsidence at the site

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a 10 percent probability of exceedence in 50 years. Seismic design parameters based on the soil profile, maximum anticipated peak ground acceleration and other factors are included in the Geotechnical Report per CBC requirements. (Ex. 200, p.5.2-16; Ex. 84.)

is considered low. (Ex. 21, p. 7.15-15.) However, the potential for and mitigation of the effects of subsidence due to compressible soils on the site must be addressed in the Project-Specific Geotechnical Report, required by Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**. According to Staff, typical mitigation is accomplished by over-excavation and replacement of the collapsible soils. For deep-seated conditions, deep foundations are commonly used. (Ex. 200, p. 5.2-17.)

Expansive Soils. Soil expansion occurs when clay-rich soils with an affinity for water exist in-place at a moisture content below their plastic limit. The addition of moisture from irrigation, capillary tension, water line breaks, etc. allows the clay to absorb water molecules into its structure, which in turn causes an increase in the overall volume of the soil, which can cause movement (heave) of overlying structural improvements. Additional review of the potential for and mitigation of the effects of expansive soils on the site will be addressed in the Addendum to the 2007 Geotechnical Report required by Condition **GEO-1** and in the Project-Specific Geotechnical Report, required by Conditions **GEN-1**, **GEN-5**, and **CIVIL-1**. According to Staff, typical mitigation is accomplished by over-excavation and replacement of the collapsible soils. For deep-seated conditions, deep foundations are commonly used. Lime-treated (chemical modification) is often used to mitigate expansive clays in pavement areas. (Ex. 200, p.5.2-18; Ex. 21, p. 7.15-15 et seq.)

Landslides. Landslide potential is negligible at the site since it is located on a broad, relatively flat to gently south-sloping alluvial fan. (Ex. 200, p. 5.2-18.)

Flooding. There is no evidence that the site is in close proximity to a designated dam inundation hazard zone. (Ex. 84, p. 15.) The potential for flooding due to water erosion is addressed in the **SOIL AND WATER RESOURCES** section of this Decision. (Ex. 21, p. 7.15-16; Ex. 200, p. 5.2-18.)

Tsunamis and Seiches. The project site is not subject to tsunamis or seiches since it is not located near any large body of water such as a lake or open ocean.

2. Mineralogical and Paleontological Impacts

The evidence shows that there are no known viable geological or mineralogical resources within one mile of the project site. However, since significant paleontological resources have been documented within four miles of the site, the likelihood of encountering paleontological resources is considered high on

portions of the site, temporary laydown area, and along the linear corridors. (Ex. 200, p. 5.2-21.) To ensure that potential impacts to paleontological resources are mitigated to insignificant levels, Conditions of Certification **PAL-1** through **PAL-7** require the Project Owner to provide a Paleontological Resources Monitoring and Mitigation Plan, which includes a worker training program and monitoring of earthmoving activities by qualified paleontologists who have authority to halt activities, if necessary, to preserve discovered resources.

FINDINGS OF FACT

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

1. The CPV Sentinel Project is located in an active seismic area.

2. Ground shaking due to seismic activity is the main geological hazard to the Project.

3. Expansive soils are beneath portions of the Project site.

4. The Project Owner will submit an Addendum to its 2007 Geotechnical Report to analyze the potential effects of expansive clay soils, as well as excessive settlement due to compressible soils and hydrocompaction.

5. Potential hazards to the Project resulting from ground shaking and expansive soils will be effectively mitigated by standard engineering design measures as described in the evidentiary record and as required in Conditions **GEN-1**, **GEN-5**, **CIVIL-1** of the **Facility Design** section of this Decision.

6. Liquefaction, lateral spreading, dynamic compaction, ground subsidence, landslides, flooding, tsunamis, and seiches pose low or negligible risks to the Project.

7. There is no evidence of existing or potential geological or mineralogical resources at the Project site or along the linear alignments.

8. There is a high probability of encountering paleontological resources at the Project site, laydown area, and along the linear corridors.

9. The Project Owner will implement several mitigation measures to avoid impacts to paleontological resources including a Paleontological Monitoring and Mitigation Plan, employing a Paleontological Resource Specialist, and conducting a worker training program.

CONCLUSIONS OF LAW

1. The Commission therefore concludes that implementation of the appropriate mitigation measures described in the evidentiary record and in the Conditions of Certification listed below ensure that Project activities will not cause adverse impacts to geological, mineralogical, or paleontological resources.

2. Moreover, compliance with the Conditions of Certification below will ensure that the Sentinel Project conforms to all applicable laws, ordinances, regulations, and standards related to geological, mineralogical, and paleontological resources as indentified in **Appendix A** of this Decision.

3. We further conclude that, with implementation of the Conditions of Certification in the **Facility Design** section of this Decision, the Project will be designed and constructed in a manner sufficient to withstand reasonably foreseeable geological hazards.

CONDITIONS OF CERTIFICATION

Conditions of Certification **GEN-1, GEN-5**, **MECH-1**, and **CIVIL-1** in the **Facility Design** section of this Decision require the Project Owner to comply with applicable engineering geology LORS. Condition **GEO-1** and Conditions **PAL-1** through **PAL-7** are listed below.

GEO-1 The Project Owner shall submit an Addendum to its 2007 Geotechnical Report to analyze the potential effects of expansive clay soils, as well as excessive settlement due to compressible soils and hydrocompaction and describe necessary mitigation measures to address the potential effects.

Verification: At least 60 days prior to ground disturbance, the Project Owner shall submit to the CPM for review and approval an Addendum to its 2007 Geotechnical Report analyzing the potential effects of expansive clay soils, as well as excessive settlement due to compressible soils and hydrocompaction and describing necessary mitigation.

PAL-1 The Project Owner shall provide the Compliance Project Manager (CPM) with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the Project Owner shall obtain CPM approval of the replacement PRS. The Project Owner shall

keep resumes on file for qualified Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The Project Owner shall ensure that the PRS obtains qualified 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 one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: 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.

1. At least 20 days prior to ground disturbance, the PRS or Project Owner shall provide a letter with resumes naming anticipated monitors for the project, stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the Condition. If additional monitors are obtained during the project, the PRS shall provide additional

letters and resumes to the CPM. The letter shall be provided to the CPM no later than one week prior to the monitor's beginning on-site duties.

2. Prior to the termination or release of a PRS, the Project Owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The Project Owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant, construction lay down areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the Project Owner shall provide copies to the PRS and CPM. The site grading plan and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale of 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the project or its linear facilities change, the Project Owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the Project Owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the Project Owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week, and until ground disturbance is completed.

Verification: 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.

1. If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

2. If there are changes to the scheduling of the construction phases, the Project Owner shall submit a letter to the CPM within 5 days of identifying the changes.

PAL-3 The Project Owner shall ensure that the PRS prepares, and the Project Owner submits to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant

paleontological resources. 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, and sampling activities, and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the Project Owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP, 1995) and shall include, but not be limited, to the following:

1. 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 identified within the PRMMP and the Conditions of Certification;

3. A thorough discussion of the anticipated geological 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, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;

5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;

6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;

7. A discussion of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;

8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which 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; and

10. A copy of the paleontological Conditions of Certification.

Verification: At least 30 days prior to ground disturbance, the Project Owner shall provide a copy of the PRMMP to the CPM. 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 and for the duration of construction activities involving ground disturbance, the Project Owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: Project managers, construction supervisors, foremen and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Initial worker training during project kick-off, as well as follow-up training for new employees, shall consist of a CPM-approved video or in-person training. 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. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

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 training shall include:

1. A discussion of applicable laws and penalties under the law;

2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontological sensitivity;

3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;

4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;

5. An informational brochure that identifies reporting procedures in the event of a discovery;

6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification:

1. At least 30 days prior to ground disturbance, the Project Owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.

2. At least 30 days prior to ground disturbance, the Project Owner shall submit the script and final video to the CPM for approval if the Project Owner is planning to use a video for interim training.

3. If the Project Owner requests an alternate paleontological 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 training prior to CPM authorization.

4. In the monthly compliance report (MCR, the Project Owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 The Project Owner shall ensure that the PRS and PRM(s) monitor all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project consistent with the PRMMP. In the event that the PRS determines full-time monitoring is not necessary in locations that were identified as potentially fossil bearing in the PRMMP, the Project Owner shall notify and seek the concurrence of the CPM.

The Project Owner shall ensure that the PRS and PRM(s) have the authority to halt 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 will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.

2. The Project Owner shall ensure that the PRM(s) keep a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

3. The Project Owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.

4. For any significant paleontological resources encountered, either the Project Owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event where construction has been halted because of a paleontological find.

The Project Owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities, and general locations of excavations, grading, and other activities. A section of the report shall include the geological units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to 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: 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 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any

unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The Project Owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction.

Verification: The Project Owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The Project Owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved Paleontological Resource Report (see **PAL-7**). The Project Owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The Project Owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information, and submit it to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

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.

VII. LOCAL IMPACT ASSESSMENT

In general, the location of a power plant may be incompatible with existing or planned land uses, resulting in potential hazards to public health or safety, adverse traffic or visual effects, unmitigated noise, or an excessive burden on local community services. The following sections of this Decision discuss local impacts under the technical topics of land use, traffic and transportation, socioeconomics, noise, and visual resources.

A. LAND USE

To determine whether the CVP Sentinel Project will result in a significant impact on land use, our analysis focuses on two main issues: 1) whether the project is compatible with existing and planned land uses; and 2) whether the project is consistent with local land use plans, ordinances, and policies. The evidence on this topic was undisputed. (Exs. 10, 65, 107; Ex. 200, p. 4.5-1 et seq.; Ex. 205, p. 9 et seq.; 11/03/08 RT 19, 31.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

According to CEQA Guidelines[1] 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 which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses;

- Physically disrupt or divide an established community;

- Conflict with any applicable habitat conservation plan or natural community conservation plan;

[1] Title 14, Cal. Code Regs., § 15000 et seq., Appendix G, §§ II, IX, XVI.

- 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; and

- 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.

Land use ordinances and policies applicable to the CVP Sentinel Project include the Riverside County General Plan and Zoning Ordinance, the City of Palm Springs General Plan and Municipal Code, the City of Desert Hot Springs General Plan and Zoning Ordinance, the Coachella Valley Multiple Species Habitat Conservation Plan, and the California Land Conservation Act (CLCA) of 1965 (aka the Williamson Act).[2] (Ex. 200, pp. 4.5-2 and 4.5-3.)

1. The Site

The 37-acre power plant site is located within unincorporated Riverside County, within the City of Desert Hot Springs Sphere-of-Influence (SOI). The site consists of three separate Assessor's Parcel Numbers (APNs): 668-130-005, 668-130-007, and 668-140-001. The first two parcels and the northern portion of the third parcel encompass most of the site and are currently undeveloped. The southeastern portion of the third parcel (APN 668-140-001) currently contains a domestic water well and a septic system. The site is not designated farmland nor subject to a Williamson Act contract. (Ex. 200, p. 4.5-5.)

There are no existing agricultural land uses along the project's linear components (natural gas pipeline, transmission line, potable water line, access road) or within 0.25 mile of their rights-of-way. Portions of the recycled water pipeline will be located within the City of Palm Springs, approximately 10 miles south of the site. The pipeline will extend from an existing service main on South Murray Canyon Drive following the South Murray Canyon Drive right-of-way and through two parcels of Allotted Trust Land, within the golf course held by the Agua Caliente

[2] *See* Government Code Section 51200 et seq. The Williamson Act allows private landowners to contract with counties or cities to voluntarily restrict land use to agricultural and open-space uses. The contracts are based on a rolling 10-year term and automatically renewed annually unless either party files a notice of nonrenewal. In return, property taxes on the restricted parcels are assessed at reduced rates consistent with actual use rather than potential market value.

Band of Cahuilla Indians (Tribe). The Assessor's Parcel Numbers (APNs) for these parcels are 512-08-0001 and 512-02-0014. (Ex. 200, pp. 4.5-5 and 4.5-6.)

The area surrounding the site is dominated by wind farms to the north, east, and south of the site, the Devers Substation to the west and transmission line corridors to the south. Land uses adjacent to the site include:

- **North:** Undeveloped land, and wind energy generation to the northeast.
- **East:** Wind energy generation, and U.S. Bureau of Land Management (BLM) undeveloped property.
- **South:** Powerline Road North and Powerline Road South, which serve as two transmission line corridors that connect to the Devers Substation.
- **West:** Undeveloped land and the Devers Substation.

Existing land uses within one mile of the site and 0.25 mile of the linear rights-of-way (natural gas pipeline, transmission line, potable water line, and access road) include: Rural to High-Density Residential, Commercial, Industrial, Public Facilities And Institutions, Transportation and Utilities, and Vacant Land. There are scattered rural residences located in the areas designated Estate Residential areas and Rural Desert. (Ex. 200, p. 4.5-6.)

2. Potential Impacts

Conversion of Farmland. None of the lands affected by the project are zoned for agricultural uses.[3] Thus, the project will not convert any designated Farmland to non-agricultural uses nor cause any impacts to existing agricultural operations or foreseeable future agricultural use. (Ex. 200, p. 4.5-10.)

Division of Existing Community. There is no evidence that the project will physically divide or disrupt an established community since it is located in a relatively rural area dominated by utility and energy infrastructure with no established residential communities. (Ex. 200, pp. 4.5-10 to 4.5-11; Ex. 10, p. 7.4-5.)

Conflict with Habitat or Conservation Plan. Conditions of Certification in the **Biological Resources** section of this Decision require the project owner to implement specific mitigation measures that would eliminate impacts to sensitive

[3] The project and its associated linear facilities are located on lands designated as "Other Land" and "Urban and Built-Up Land" under the Farm Land Mapping and Monitoring Program. (Ex. 200, pp. 4.5-4, 4.5-10.)

species and habitats included in the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Plan. (Ex. 200, p. 4.5-12; Ex. 205, p. 9.)

Compatibility. Land use compatibility refers to the physical compatibility of the proposed project with existing land uses. The evidence establishes that development of the Sentinel Project is consistent with land uses in the vicinity as described below:

Under the Riverside County General Plan, the power plant site and transmission line route are designated PF (Public Facilities), and zoned W-2 (Controlled Development Area). The PF land use designation allows the development of public, quasi-public, and private uses with similar characteristics, such as governmental facilities, utility facilities including public and private electric generating stations and corridors, landfills, airports, educational facilities, and maintenance yards. Permitted uses within the W-2 zoning designation include necessary and incidental structures pertinent to the development and transmission of electrical power. (Ex. 200, p. 4.5-7; Ex. 10, p. 7.4-3 et seq.)

Most of the eastern portion of the construction laydown area (approximately two-thirds of the site) is designated RD (Rural Desert) and zoned W-E (Wind Energy Resource). The RD designation is generally applied to remote desert areas characterized by poor access, a lack of water, and services. It allows single family residences and limited agriculture and animal keeping uses, with a maximum residential density of one dwelling unit per 10 acres. In addition, the RD designation allows limited recreational uses; renewable energy uses including solar, geothermal and wind energy; and governmental and public utility uses. The W-E zone allows electric transmission facilities and electrical substations. (Ex. 200, pp. 4.5-7 and 4.5-8.)

The western one-third portion of the construction laydown area is located within the City of Palm Springs and has a Palm Springs General Plan land use designation of I (Industrial) with a Wind Energy Overlay and a zoning designation of E-I (Energy Industrial). The E-I zone allows energy uses with a Land Use Permit (also referred to as a Conditional Use Permit). Industrial uses include research and development parks, light manufacturing, laboratories, and industrial services. Wind Energy Conversion Systems (WECS) are permitted in the Wind Energy Overlay classification. These uses are predominantly located in areas designated as Desert, Industrial, or Open Space–Water on the Palm Springs General Plan Land Use map. (Ex. 200, p. 4.5-8; Ex. 10, pp. 7.4-4 and 7.4-5.)

The rights-of-way for the new access road and potable water line, as well as a portion of the new gas line are designated by the Riverside County General Plan as RD (Rural Desert) and PF (Public Facilities), and are zoned W-2 (Controlled Development Area) and W-E (Wind Energy Resource). (Ex. 200, p. 4.5-8.)

The remaining areas of the gas pipeline route (east of Melissa Lane) are adjacent to areas primarily designated by the Palm Springs General Plan as I (Industrial) with a Wind Energy Overlay and zoned E-I (Energy Industrial) and M-2 (Manufacturing). (Ex. 200, p. 4.5-8.)

The areas of the gas pipeline route east of Melissa Lane are within unincorporated Riverside County. These areas have a Riverside County General Plan designation of RD (Rural Desert) with an Industrial-Wind Farm Overlay. Riverside County zoning designations for these areas are W-E (Wind Energy Resource Zone) and W-2 (Controlled Development Area). One parcel adjacent to the east of the gas pipeline is zoned R-1 (One-Family Dwelling). Installation of a gas pipeline requires a Public Use Permit in the R-1 zoning district. Applicant has submitted the requisite application for a Public Use Permit. (Ex. 200, p. 4.5-8; Ex. 65.)

The new recycled water pipeline right-of-way is designated Very Low Residential or Medium Density Residential by the Palm Springs General Plan, and is included in the R-1-C (Single Family Residential) and the R-2 (Limited Multiple) zoning districts. The area where the water pipeline transverses the Indian Canyons Golf Resort on the south side of South Murray Canyon Drive has a Palm Springs General Plan designation of Open Space–Parks/Recreation and is zoned “Indian Land.” The Open Space–Parks/Recreation designation is used for regional, local, and neighborhood parks, community centers, public and private golf courses, and any recreational facility operated by a public or quasi-public agency. The Palm Springs National Golf Course has site control through a long term lease from the Agua Caliente Development Authority through the year 2031, with an option to extend. (Ex. 200, p. 4.5-9.)

Although the project site is compatible with surrounding land uses, there are sensitive receptors in nearby scattered rural residences and recreational areas (golf courses) that may potentially experience project-related impacts from noise, dust, public health hazards, adverse traffic or visual impacts. The mitigation measures incorporated in the Conditions of Certification in the **Air Quality**, **Public Health**, **Hazardous Materials Management**, **Noise**, **Traffic and**

Transportation, and **Visual Resources** sections of this Decision will ensure that the project does not result in significant impacts at any sensitive receptor location. (Ex. 200, p. 4.5-29.)

Consistency with Land Use LORS. Certain project components would normally require a Conditional Use Permit (CUP) and/or a variance from Riverside County and the City of Palm Springs to ensure compliance with their respective General Plans and Zoning Ordinances.[4] However, since the Energy Commission has exclusive jurisdiction to license the project, Staff requested the local agencies to provide guidance on the applicability of their CUP and variance LORS and to identify mitigation measures that should be included in the final Conditions of Certification. (Ex. 200, pp. 4.5-12 and 4.5-13.)

According to the County, the project is consistent with the land use classification and zoning requirements for W-2 since the land use designation is Public Facilities within the W-2 "Controlled Development Area" zone, which allows structures and facilities necessary and incidental to the development and transmission of electrical power and gas. However, neither the County nor the City of Palm Springs confirmed whether the project should be required to comply with their CUP and variance requirements. (Ex. 200, p. 4.5-13.) Staff was initially concerned that the County and City did not respond to its inquiries. Subsequently, Staff filed Supplemental Testimony, which redacted its concerns about County and City input and concluded that the project either meets the requirements for pertinent CUPs and variances or the requirements do not apply. (Ex. 205, p. 9 et seq., Land Use Table 2 Amendments.)

The Applicant initially planned to merge the separate parcels of land at the project site under the Subdivision Map Act (Pub. Res. Code, § 66410 et seq.). However, according to the Applicant, a parcel merger would result in complex tax implications. In the alternative, Applicant proposed a lot-tie agreement to maintain the separate parcels, or a Covenant and Agreement to Hold Property as One Parcel. Riverside County did not accept this approach and requested a

[4] Riverside County would normally require a CUP for storage of equipment and vehicles at the construction laydown area and a variance for the project's exhaust stacks, which exceed the County's height limit of 75 feet within the W-2 zone. The City of Palm Springs would also require a CUP for storage uses at the laydown area and for use of portions of the natural gas pipeline right- of-way through the M-2 zone, which is dedicated to the development of industrial uses. (Ex. 200, p. 4.5-12 and 4.5-13.) Although portions of the project are within the City of Desert Hot Springs SOI, Riverside County's LORS apply since there is no evidence that the City of Desert Hot Springs has annexed or has plans to annex the areas. (Ex. 200, p. 4.5-13.)

Condition of Certification to require the Applicant to comply with the Subdivision Map Act. (Ex. 200, pp. 4.5-32, 4.5-33, 4.5-37, Appendix LU-1.) We agree with the County's concerns and adopt Condition of Certification **LAND-1** to ensure that the project owner complies with the Subdivision Map Act and applicable Riverside County LORS on land mergers.

4. Cumulative Impacts

Section 15130(a) of the CEQA Guidelines requires the lead agency to discuss potential cumulative impacts of a project when its incremental effect may be cumulatively considerable. [Cal. Code Regs., tit. 14, § 15130(a).] The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects developed over a period of time. (*Id*. at § 15355(b).)

The CVP Sentinel Project represents a land use type that is similar to adjacent utility development and does not require a General Plan amendment, zoning amendment, or other changes that would alter development standards, availability of permits, or use of the project site or surrounding properties. (Ex. 200, p. 4.5-30.)

The evidence indicates that as of June 2007, hundreds of proposed and/or approved projects were located within a ten-mile radius of the project site, representing mostly residential development, with some commercial, light industrial, and institutional facilities. (Ex. 42.) Since the CVP Sentinel Project is designed to serve the electrical needs of the growing population in the area by connecting to existing utility infrastructure near the site, it represents a response to new development rather than a significant contribution to regional impacts caused by new development. (Ex. 200, p. 4.5-30.)

The land use effects of the project in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable since all new development in the area must comply with applicable LORS to ensure that potential impacts are properly mitigated. Although low-income and minority populations exist near the site, there are no significant unmitigated adverse land use impacts related to the project that would affect any population and thus, no adverse impacts to minority or low-income populations are expected to occur. (Ex. 200, p. 4.5-30.)

FINDINGS OF FACT

Based on the evidentiary record, we make the following findings and conclusions:

1. The CVP Sentinel Project site and ancillary facilities are located within unincorporated Riverside County, the City of Palms Springs, and the City of Desert Hot Springs Sphere-of-Influence (SOI).

2. The area surrounding the site is dominated by wind farms to the north, east, and south, the Devers Substation to the west, transmission line corridors to the south, with open spaces and a few rural residences in the vicinity.

3. Land use ordinances and policies applicable to the project include the Riverside County General Plan and Zoning Ordinance, the City of Palm Springs General Plan and Municipal Code, the City of Desert Hot Springs General Plan and Zoning Ordinance, the Coachella Valley Multiple Species Habitat Conservation Plan, and the California Land Conservation Act (aka Williamson Act).

4. None of the lands affected by the project are zoned for agricultural uses and there is no evidence that the project will result in the conversion of farmland to non-agricultural use or conflict with existing agricultural zoning or Williamson Act contracts.

5. The site consists of three separate Assessor's Parcel Numbers (APNs): 668-130-005, 668-130-007, and 668-140-001.

6. The Applicant will comply with requirements of the Subdivision Map Act to merge the three separate properties into a single legal parcel or obtain approval from Riverside County for a lot-tie agreement for the three properties.

7. Under the Riverside County General Plan, the site and transmission line route are designated PF (Public Facilities), and zoned W-2 (Controlled Development Area), which allows electric generating stations and ancillary facilities.

8. The eastern portion of the construction laydown area (approximately two-thirds of the site) is designated RD (Rural Desert) and zoned W-E (Wind Energy Resource), which allows utility uses and electric transmission facilities.

9. One parcel adjacent to the gas pipeline is zoned R-1 (One-Family Dwelling).

10. The project is compatible with existing land uses in the site vicinity.

11. There is no evidence that the project will physically divide or disrupt an established community.

12. Conditions of Certification in the **Biological Resources** section of this Decision ensure that the project will comply with the Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Plan.

13. The project will not result in cumulative or incremental land use impacts in conjunction with the existing and foreseeable development in the project area.

14. The project will not result in significant land use impacts to low income or minority populations in the area.

15. The Conditions of Certification ensure that the project will comply with all applicable local land use requirements.

CONCLUSION OF LAW

1. We conclude that construction and operation of the CPV Sentinel Project will not result in significant adverse direct, indirect, or cumulative impacts to land use and will comply with applicable laws, ordinances, regulations, and standards listed in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the Subdivision Map Act (Pub. Res. Code, §§ 66410-66499.58) by either adjusting the boundaries of all parcels or portions of parcels that constitute the CPV Sentinel Energy project site (as necessary) to merge all properties into a single legal parcel, within the County of Riverside jurisdiction, in accordance with provisions and procedures set forth in the County of Riverside Ordinance 460 (Regulating the Division of Land of the County of Riverside), Section 18.7 (Merging of Contiguous Parcels), or by obtaining the County of Riverside's written approval that its proposal to record a lot-tie agreement is acceptable.

Verification: At least 30 days prior to construction of the CPV Sentinel Energy Project, the project owner shall submit evidence to the CPM, indicating

approval of the merger of parcels by the County of Riverside, or written the written approval of the County of Riverside documenting another process to tie project lots together and that is acceptable to the county. The submittal to the CPM shall include evidence of compliance with all conditions and requirements associated with the approval of the Certificate of Merger and/or Notice of Lot Line Adjustment by the County. If all parcels or portions of parcels are not owned by the project owner at the time of the merger, a separate deed shall be executed and recorded with the County Recorder. A copy of the recorded deed shall be submitted to the CPM, as part of the compliance package.

B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the project will affect the local area's transportation network. The evidence includes an analysis of: (1) the roads and routings that are 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 possible effect of project operations on local airport flight traffic. (Exs. 16, 48, 49, 50, 51, 52, 53,117, 200, 211; 5/1/06 RT 9-10.)

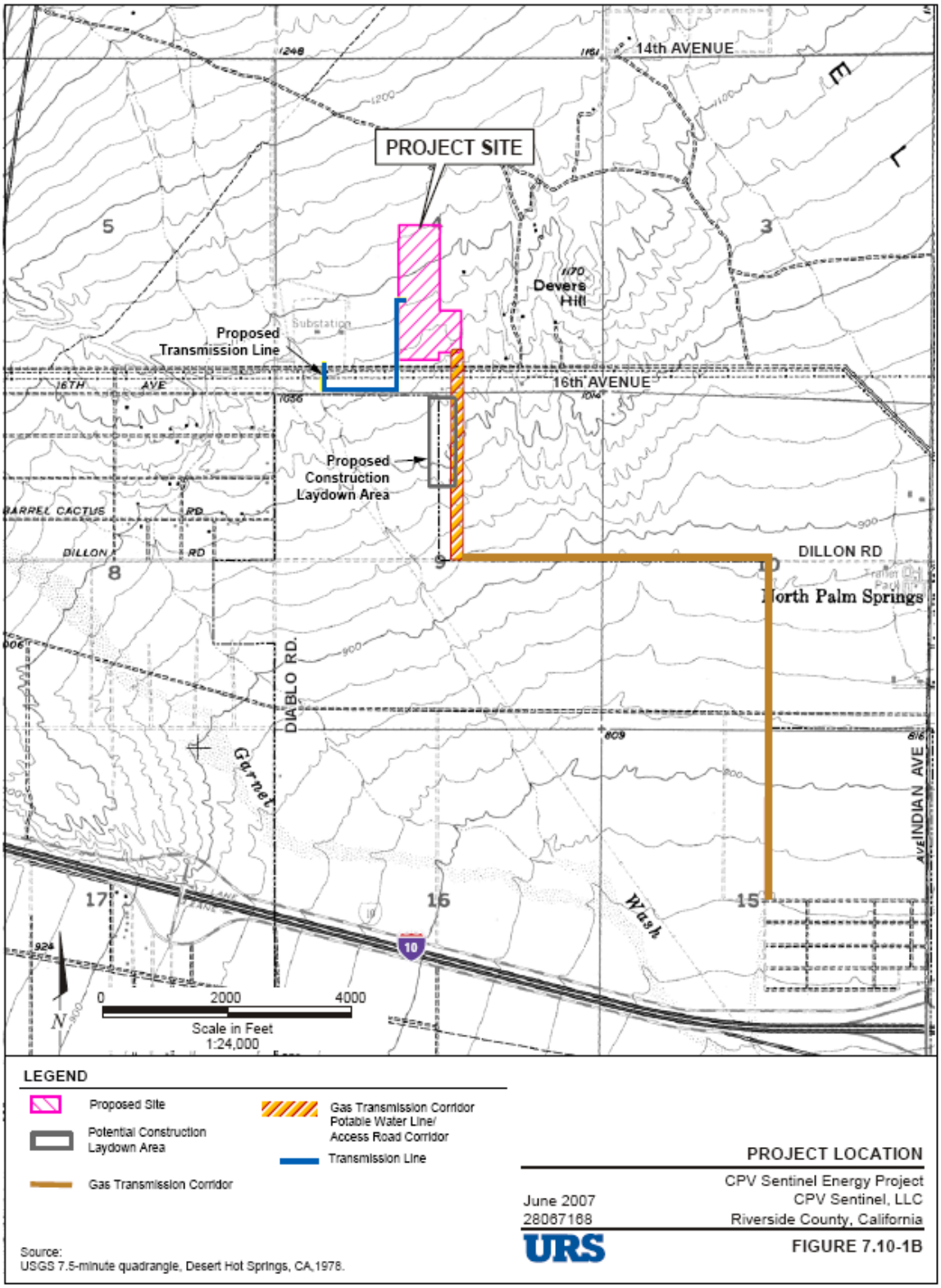
SUMMARY AND DISCUSSION OF THE EVIDENCE

The CPV Sentinel site is in the western Coachella Valley within the unincorporated area of Riverside County between the cities of Desert Hot Springs and Palm Springs. To the south and west are two major highways: U.S. Interstate 10 (I-10) and State Route 62 (SR-62). (Ex. 200, p. 4.10–3.)

Dillon Road runs east-west along the south side of the site from SR 62 and connects with Indian Avenue to the east of the project. Indian Avenue is a north-south, two-lane road approximately 1.5 miles to the east of the project. Indian Avenue provides regional freeway access to I-10. 16th Avenue is a two-lane, east-west paved road that leads into the gated entrance of Southern California Edison (SCE) Devers substation office. Diablo Road is a two-lane, north-south roadway to the west of the project. Worsley Road is a paved north-south, two-lane roadway immediately east of SR 62. (Ex. 16, p. 7.10–2.)

The incorporated city of Palm Springs is approximately six miles south of the project site. The incorporated city of Desert Hot Springs is approximately three miles north-northeast of the project site. The area is served by the Southern Pacific railroad and Amtrak. The North Palm Springs Train Station to the south of I-10 is about three miles from the project site. Local bus service between Desert Hot Springs and Palm Springs is provided by the SunLine Transit Agency (SunBus). The SunBus route between the cities is on Palm Drive, four miles from the project site. State Route 62 and Dillon Road within the vicinity of the project are shown as Class 1 bicycle trails on Riverside County's Western Coachella Valley Area Plan Trails and Bikeway System. The project site is approximately 7.5 miles from Palm Springs International Airport. (Ex. 200, pp. 4.10–4, see **TRAFFIC AND TRANSPORTATION FIGURE 1**.)

TRAFFIC AND TRANSPORTATION FIGURE 1



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Traffic and Transportation Table 1 identifies the critical roads and freeways in the vicinity of the project and functioning characteristics of each roadway. **Traffic Transportation Table 2** provides existing peak-hour intersection conditions.

TRAFFIC AND TRANSPORTATION Table 1
Existing Characteristics of Critical Roadways in Project Vicinity

Name	Classification	Average Daily Traffic Volume	Truck Traffic Percentage	LOS
I-10 (west of SR-62)	6-lane freeway	88,000	22%	B
I-10 (east of SR-62)	6-lane freeway	86,000	26%	B
I-10 (east of Indian Avenue)	6-lane freeway	86,000	25%	B
SR-62 (north of Dillon Road)	4-lane divided highway	24,900	11%	B
Indian Avenue (north of I-10)	2-lane undivided	16,900	N/A	F
Dillon Road (west of Indian Avenue)	2-lane undivided	3,246	unknown	unknown
Dillon Road (east of SR-62)	2-lane undivided	16,000	unknown	unknown

Ex. 16 Table 7.10-3, p. 7.10-23; Ex. 200 p. 4.10-5

TRAFFIC AND TRANSPORTATION Table 2
Level of Service Summary for Peak-Hour Intersection Existing Conditions

Intersection	Peak Hour	Existing	
		LOS	Delay*
SR-62/Dillon Road	Morning Evening	F F	350.4 182.8
Worsley Road/Dillon Road	Morning Evening	B B	10.9 10.0
Diablo Road/Dillon Road	Morning Evening	B A	10.2 9.2
Indian Avenue/Dillon Road	Morning Evening	C D	15.9 28.8
Indian Avenue/20th Street	Morning Evening	C D	22.7 26.8
Indian Avenue/I-10 westbound ramps	Morning Evening	B B	16.6 19.2
Indian Avenue/I-10 eastbound ramps	Morning Evening	C C	30.8 22.4

*Average delay in seconds per vehicle. Ex. 16, Table 7.10-4, p. 7.10-24; Ex. 200 p. 4.10-5

1. Construction

Facility construction is projected to take place over 18 months. Construction activities will generally occur between the hours of 6:00 a.m. and 6:00 p.m., Monday through Friday. The construction workforce (e.g., boilermakers, electricians, ironworkers, carpenters) is expected to come from Riverside County and Los Angeles County. The workforce is expected to use the following roadways: I-10, SR-62, Dillon Road, Indian Avenue, and Melissa Lane for construction traffic.

The primary access to the site will be on Melissa Lane, which will be 3,200 feet long by 200 feet wide extending from Dillon Road to the project site. CPV Sentinel will dedicate and complete improvement of Melissa Lane from Dillon Road to 16th Avenue and continuing north to the project (see Condition of Certification **TRANS-5**). Melissa Lane will connect with Dillon Road approximately 3,000 feet east of the intersection with Diablo Road, and 2,500 feet west of the intersection with Karen Avenue (the closest intersections). The design of the improvements to Melissa Lane provides adequate visibility to ensure driver safety. Access to the project site by emergency services vehicles and fire apparatus will be via Melissa Lane. Condition of Certification **TRANS-1** will ensure that the project owner will obtain the necessary encroachment permits prior to ground disturbance. Condition of Certification **TRANS-3** requires a review by the Riverside County Fire Department of the emergency services vehicles' access as part of the traffic control and implementation plan. (Ex. 200, p. 4.10–7; 4.10-14)

During the construction period, staff estimates an average of 12 truck/heavy vehicle trips daily to the site with a peak of 16 deliveries. Truck deliveries are expected to occur on weekdays between 7:00 a.m. and 5:00 p.m. (Ex. 200, p. 4.10–7.)

The total onsite construction workforce for the project will average an estimated 300 workers per month for 18 months with a peak total workforce of 371 workers (Ex. 16, p. 7.10-7). The construction workforce is expected to peak six to seven months after the start of construction activities. (Ex. 200, p. 4.10–7.)

Currently the intersection at SR-62/Dillon Road operates at LOS F during the morning and evening peak hours. Motorists at this intersection currently experience a delay of 350 seconds during the morning peak hour and 183 seconds during the evening peak hour. During the project's peak construction

period in 2009, it is estimated that the intersection delay at the peak hours will increase to 469 seconds during the morning period and 253 seconds during the evening period. (Ex. 200, p. 4.10–8.)

Project construction traffic is expected to cause a reduction in the LOS during evening peak hours at the intersection of Indian Avenue/Dillon Road from LOS D to LOS F. The Indian Avenue/20th Street intersection will degrade from LOS D to LOS E, and the Indian Avenue/I-10 westbound ramps will degrade from LOS B to LOS C. Motorists will experience increased delay at the intersections. None of the three degraded intersections currently has traffic signals. (Ex. 200, pp. 4.10–7.)

Staff's analysis is silent on the issue of the significance of the impact of these reductions in LOS. However, Applicant indicates that these impacts will be considered significant by state and local LOS standards (Ex16, pp. 7.10-5 through 7.10-6). The applicant proposes traffic control measures at the intersections at Indian Avenue/Dillon Road and Indian Avenue/20th Street that will take place at the evening peak hour traffic to help address the LOS reduction and the increase in traffic delay introduced by project construction. The applicant states that the majority of project-added traffic routed via SR-62 and Dillon Road will be re-routed through Indian Avenue and Dillon Road to mitigate the morning and evening peak hour impacts at SR-62 and Dillon Road. (Ex. 16, p. 7.10-15.) The record indicates that manual traffic control will be implemented only when there is an observed and immediate need to intervene and facilitate traffic flow. If the intersection is operating efficiently (i.e., no long queues and no excessive delays on all movements) no manual intervention should be necessary. The record is silent as to who determines the need for manual intervention. Both Indian Avenue intersections (Dillon Road and 20th Street) will be monitored for efficient traffic operation during peak construction. (Ex. 16, p. 7.10-15.) Again, no mention of who is responsible for monitoring these intersections. Staff testified that it has received no comments regarding the adequacy of the applicant's proposed traffic control measures from Caltrans District 8, the City of Palm Springs Department of Public Works, or the County of Riverside Transportation and Land Management Agency.

We are concerned that the absence of specific performance standards that address the degradation of LOS in Condition of Certification **TRANS-3** and the lack of clear mitigation for the apparent significant construction impacts will result in a lack of specificity and an impermissible deferral of mitigation.

Construction worker parking will be located approximately 700 feet south of the project site. To access the construction worker parking and laydown area to the south of the project site, the probable route for incoming workers will be SR 62, then east on Dillon Road, north on Melissa Lane, towards the parking and construction laydown area. The record indicates that vehicles originating from the east, northeast and southeast will access the site using Indian Avenue, Dillon Road and Melissa Lane.

The estimated 8.5-acre portion of the parking area within Riverside County, the 4.5-acre portion of the parking area within Palm Springs, and the 37-acre project site provide sufficient size to accommodate the project's peak construction workforce parking. With compliance with local parking ordinances and the implementation of Condition of Certification **TRANS-2**, we find that there is no significant impact from construction worker parking. (Ex. 16, p.7-10-9; Ex. 200, p. 4.10-11.)

During construction, small qualities of hazardous materials will be used (e.g. waste oil, cleaning solvents, paint, and asbestos containing materials); however, the record shows that no acutely toxic hazardous materials will be used. (Ex. 200, p. 4.10-15.)

A 2.6-mile long 24-inch pipeline will supply natural gas from the Indigo Energy Facility. The pipeline will cross 18th Avenue (an unimproved road) and Dillon Road. The pipeline will be located in an existing 20-foot wide easement. The width of the construction along the pipeline route will be approximately 75 feet. The pipeline will be installed at least 4 feet below ground surface. (Ex. 200, p. 4.10-10.)

Potable water will be supplied to the site by a 3,200-foot long, three-inch underground pipeline connected to an existing 12-inch potable water main line located on the south side of Dillon Road. (Ex. 200, p. 4.10-10,)

A 2,300-foot long 220 kV single circuit transmission line will interconnect the power plant and the Devers Substation. The overhead transmission line will cross an existing unpaved road named Power Line Road at two locations and will require the installation of nine steel monopole structures that range from 85 to 115 feet in height. The monopoles will be located outside of the county public right-of-way. (Ex. 200, p. 4.10-10,)

The underground recycled water pipeline will connect to an existing pipeline on the south side of South Murray Canyon Drive in the city of Palm Springs. Although most of the pipeline route is within an existing golf course, a portion of the pipeline will cross underneath South Murray Canyon Drive. The pipeline will be installed at the intersection of South Murray Canyon Drive and Kings Road East. This intersection provides access to residences situated along Kings Road East. The record indicates that access to residences from this intersection may be temporarily disrupted during pipeline installation. Condition of Certification **TRANS-3** alludes to ensuring access to residences and commercial property during construction in a general sense. (Ex. 200, p. 4.10-10,) We lack sufficient evidence to conclude that impacts to traffic and transportation associated with installation of the underground recycled water pipeline at the intersection of South Murray Canyon Drive and Kings Road East will be insignificant.

The construction of the recycled water pipeline under the road will require trenching and could potentially require alternating partial closure of the traveled way while trenching work is conducted on the other half of the roadway. The record reflects that one lane of South Murray Canyon Drive could be kept open to traffic in both directions at all times due to the ample width of the road. Depending on roadway median conditions, construction work on the south half of the roadway could potentially shift at least one lane of eastbound traffic to the north and vice versa to avoid total directional roadway closure. A detour will be available to potentially affected residences. Construction of the portion of the pipeline crossing South Murray Canyon Drive is expected to be completed in one day. The entire recycled water pipeline is expected to be completed within one month. (Ex. 200, pp. 4.10-10 to. 4.10-11.)

The record does not disclose any significant impacts arising from the construction of the linear ancillary facilities and we acknowledge the temporary nature of the construction phase of the CPV Sentinel project. The project owner is required to obtain an encroachment permit from the Riverside County Department of Public Works and the city of Palm Springs Department of Public Works for work to be performed within the county and city public right-of-way. The encroachment permit will ensure that proper traffic control measures are implemented during installation of the recycled water pipeline. Once we get clarification on the extent of the disruption associated with installation of the underground recycled water pipeline at the intersection of South Murray Canyon Drive and Kings Road East, we will be able to determine whether the construction of the linear facilities will have no significant impact on traffic and transportation.

2. Operation

The project at operation will employ ten full-time and four part-time workers spread over a 24-hour period. The evidence indicates that there may be one to two nonrecurring service/delivery trips per month to and from the project site. The relevant county zoning ordinance requires a minimum of six permanent employee parking spaces. The 37-acre project site provides sufficient area for the minimum number of onsite parking spaces. Condition of Certification **TRANS-2** requires a parking plan demonstrating compliance with the county's requirement. (Ex. 200, p. 4.10-12.)

Tanker trucks with a capacity of up to 8,000 gallons will deliver aqueous ammonia to the power plant up to 56 times per year from a supplier in Southern California. The deliveries will replenish aqueous ammonia stored on site for plant operation. The project's estimated operational related trips will generate a minute increase to the projected LOS intersection delay so these trips are not expected to cause a noticeable change in the LOS at the identified intersections. (Ex. 200, pp. 4.10-13 to. 4.10-14) The **Hazardous Materials Management** section in this Decision contains a more detailed discussion on hazardous material delivery to the power plant. (Ex. 200, p. 4.10-15.)

Palms Springs International Airport is the closest airport to the project site. The airport is located approximately eight miles south southeast of the site in the city of Palm Springs. The project site is not located within 20,000 feet of an airport runway; therefore, the project does not require a notification to the FAA. The project does not have any structure exceeding 200 feet in height which would also trigger an FAA notification. There is nothing in the record that suggests that the project will have any impact on aviation. (Ex. 200, p. 4.10-14.)

The record includes modeling of the project's cooling towers using the Seasonal and Annual Cooling Tower Impact model to identify the potential for ground level fogging. Based on three years of historic metrological data and the three-cell tower operation modeled, a ground hugging plume could occur for a distance of up to 984 feet for a total of 36 minutes over a three year period. As such, there would be a chance that a very limited amount of ground level fogging could reach Power Line Road. Ground level fogging is not predicted to reach Diablo or Dillon Roads. Therefore, the very limited occurrence (frequency and duration) of ground level fogging from the project's cooling towers introduces a less than significant impact on the visibility of motorists on nearby public roads and highways. (Ex. 200, p. 4.10-15.)

3. Cumulative Impacts Analysis

Several development projects within a six-mile radius of the project site have been either filed with a city or the county, or approved by them within the eighteen months prior to the filing of the CPV Sentinel AFC with the Energy Commission. CPV Sentinel's AFC identifies the following projects (Ex. 16, p. 7.10-13; Ex. 200, p. 4.10-16.):

- Indian Avenue/I-10 Interchange Project involves reconstruction of the I-10 Freeway/Indian Avenue interchange three miles south of the CPV Sentinel project site. The project is currently under environmental review.

- Dillon Wind Farm project involves the installation of 45 wind turbines at three separate locations: (1) an area west of Devers Substation approximately 5,000 feet from the project site, (2) an area 2,000 feet east of the project site, and (3) an area 4,500 feet to the southeast of the project site. The Environmental Impact Report for the Dillon Wind Farm project was recently certified by Riverside County. The construction period is expected to last six months.

- Wind Energy Conservation System (WECS) 20 Permit Project would consist of eight new General Electric (GE) 1.5 MW wind turbine generators being installed in the existing WECS 20 wind park. This wind park is located approximately two miles northwest of the project site, a half-mile west of State Route 62.

- Green Path Project is a new 100-mile, 500-kV line extension from the Devers-Palo Verde transmission corridor north to a new Upland Substation in the northeastern sector of Los Angeles Department of Water and Power service territory. Planned construction is 2009.

- Oasis Development and annexation is a mixed-use development on 155 acres located approximately 3.2 miles northeast of the project site. The city of Desert of Hot Springs is annexing the project.

- Alpine Group Development is a mixed-use development that includes schools and high density residential) on 160 acres located one mile northwest of the project site. The city of Desert of Hot Springs is expected to annex the project. There is no timetable for the start of construction.

- Palmwood Specific Plan and Outparcels Development is a mixed-use development that includes 1,853 residential units on 1,926-acres located 6.5 miles north of the CPV Sentinel project. The project's peak construction activities should occur in 2009.

The City of Desert Hot Springs website states that they have approved 13 residential developments within its jurisdiction. At build out these projects would include 12,000 new homes. In addition, approved commercial developments include the Oasis Development, a project estimated to serve upwards to 60,000 people shopping for everything from groceries to home appliances. The Pierson Professional Center which includes community medical and professional office space, and building area for a restaurant and coffee house, and the Village at Mission Lakes development which would offer 68,000 square feet of rentable space for restaurants, markets, and office space.

Indian Avenue is a major north-south roadway system that connects the cities of Desert Hot Springs and Palms Springs. A 1.5-mile segment of Indian Avenue from I-10 to Dillon Road will be used for project related activity. Two intersections may be affected by the identified developments. They are the Indian Avenue/Dillon Road and Indian Avenue/20th Street intersections which currently operate at LOS D or worse. The evidence shows that the above identified developments would further contribute to a degrading of existing intersection operations. Motorists will experience increased intersection delay. The record indicates that this is a cumulatively considerable and significant impact that may not be reduced to a less than significant level without extensive road work and traffic signalization. Staff cites Condition of Certification **TRANS-3** as mitigation to reduce this impact, however, the condition merely requires the project owner to prepare a traffic control and implementation plan without specifying how the preparation of such a plan will supply the "extensive road work and traffic signalization" which staff testified is needed to mitigate the cumulative impacts of the project to insignificance. Although we acknowledge that the project's contribution to this cumulative traffic impact will diminish to a less than significant level after completion of project construction, we require the parties to identify exactly what mitigation will reduce the project's contribution to the cumulative traffic impacts to insignificance by specifying the performance standard. (Ex. 200, p. 4.10-17.)

We seek clarification of Staff's testimony wherein they assert "[e]ven though low-income and minority populations exist in the immediate project area, staff has not identified any significant unmitigated adverse traffic and transportation impacts with the project or cumulative impacts; therefore, no significant adverse impacts to minority or low-income populations are expected to occur." (Ex. 200, p. 4.10-17.) Two sentences earlier, staff testified that "the project's construction peak workforce will introduce a significant impact to the identified intersections during the peak construction period for the project." In the sentence before that, staff

proposes Condition of Certification **TRANS-3** but qualifies, "this cumulatively considerable and significant impact may not be reduced to a less than significant level without extensive road work and traffic signalization." These inconsistencies must be resolved before the Committee could recommend certification of the project.

FINDINGS OF FACT

Based on the uncontroverted evidence, we find and conclude as follows:

1. Project construction traffic is expected to cause a degradation in the LOS during evening peak hours at the intersection of Indian Avenue/Dillon Road from LOS D to LOS F.

2. The Indian Avenue/20th Street intersection will degrade from LOS D to LOS E.

3. The Indian Avenue/I-10 westbound ramps will degrade from LOS B to LOS C.

4. The parties must mitigate the increased delay at these intersections.

5. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws.

6. There will be no significant impact from construction worker parking.

7. Construction of the linear facilities will not have a significant impact on traffic and transportation.

8. The project's estimated operational related trips will not cause a significant impact to the LOS at the identified intersections.

9. The project will not have an impact on aviation.

10. Ground level fogging from the project's cooling towers will introduce a less than significant impact on the visibility of motorists on nearby public roads and highways.

11. Identified developments in the area will further contribute to the increase of intersection delay resulting in a cumulatively considerable and significant cumulative impact that may not be reduced to a less than significant level without extensive road work and traffic signalization

CONCLUSIONS OF LAW

Implementation of the Conditions of Certification, below, ensure that both construction and operation of the project will comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

TRANS-1 Prior to any ground disturbance within a public right-of-way (e.g., highway, road, bicycle path, pedestrian path), the project owner or its contractor(s) shall secure an encroachment permit in accordance with the applicable requirements of the county of Riverside, the city of Palm Springs, and Caltrans (if applicable) for encroachment into the affected jurisdiction's public right-of-way.

Verification: Prior to ground disturbance in the public right-of-way the project owner shall provide to the CPM copies of the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans (if applicable) issued/approved encroachment permit(s). In addition, the project owner shall retain copies of the issued/approved permit(s) and supporting documentation in its compliance file for a minimum of 180 calendar days after the start of commercial operation.

TRANS-2 The project owner shall comply with the applicable parking standards of the county of Riverside. The project owner shall prepare and submit to the CPM for approval a parking plan for the operation phase of the project in consultation with the county of Riverside.

The operational parking plan shall show the location of the proposed parking area(s), a plot plan (diagram) with dimensions with an accurate portrayal of the number of parking spaces in accordance to the sizes stipulated in the applicable parking standards by the county of Riverside Transportation and Land Management Agency. The plan shall also show ingress/egress access (including emergency services vehicle access), parking lot circulation, car/van pool loading and unloading area(s) and any other item(s) that are requested by the county of Riverside Transportation and Land Use Management Agency subject to approval by the CPM.

The operational parking plan shall include a policy to be enforced by the project owner stating all project-related parking occur onsite or in designated offsite parking areas as shown on the plan.

Prior to site mobilization, the project owner shall provide to the CPM for approval a conceptual construction parking layout plan for the project.

The conceptual parking layout plan shall show with an accurate portrayal the number of parking spaces in accordance to the sizes stipulated in the applicable parking standards by the county of Riverside Transportation and Land Management Agency, and parking lot circulation.

Verification: The project owner shall submit the proposed operation parking plan to the county of Riverside Department of Transportation for review and comment. The project owner shall provide to the CPM a copy of the transmittal letter submitted to the county of Riverside Department of Transportation requesting their review of the parking plan. The project owner shall provide any comment letters to the CPM for review.

The applicant shall provide the county of Riverside Transportation and Land Management Agency 30 calendar days to review the parking plan and provide written comments to the project owner. The project owner shall provide a copy of the county of Riverside Transportation and Land Management Agency written comments and a copy of the parking plan(s) to the CPM for review and approval.

At least 30 calendar days prior to site mobilization, the project owner shall provide a copy of the construction phase parking plan to the CPM for review and approval.

At least 60 calendar days prior to the start of commercial operation, the project owner shall provide a copy of the operation phase parking plan to the CPM for review and approval.

Prior to site mobilization, the project owner shall provide to the CPM for approval a conceptual construction parking layout plan for the project.

TRANS-3 The project owner shall prepare a construction traffic control and implementation plan for the project and its associated facilities. The project owner shall consult with the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans in the preparation of the traffic control and implementation plan. The project owner shall provide a copy of the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans written comments and a copy of the traffic control and implementation plan to the CPM for review and approval.

The traffic control and implementation plan shall include and describe the following minimum requirements:

- Timing of heavy equipment and building materials deliveries;
- Redirecting construction traffic with a flag person if required;
- Signing, lighting, and traffic control device placement if required;

- Construction work hours and arrival/departure times outside of peak traffic periods;
- Haul routes;
- Procedures for safe access to the main entrance;
- Ensure access for emergency services vehicles to the project site;
- Temporary travel lane closure;
- Ensure access to adjacent residential and commercial property during the construction of all linears, and;
- Provide a construction workforce organized ridesharing plan (ridesharing refers to carpooling and vanpooling. Rideshare programs typically provide carpool matching, vanpool sponsorship, marketing programs and incentives to rideshare rather than drive alone).

Verification: The project owner shall submit the proposed traffic control and implementation plan to the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans for review.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans requesting their review of the traffic control and implementation plan.

The project owner shall provide the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans 30 calendar days to review the plan and provide written comments to the project owner. The project owner shall provide the CPM a copy of the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans comments to the CPM.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans a plan with the specified revisions for review and approval by the CPM before the plan is implemented.

At least 30 calendar days prior to site mobilization, the project owner shall provide a copy of the traffic control and implementation plan to the CPM for review and approval.

TRANS-4 The project owner shall repair affected public rights-of-way (e.g., highway, road, bicycle path, pedestrian path) to original or near original

condition that has been damaged due to construction activities conducted for the project and its associated facilities.

Prior to start of site mobilization, the project owner shall notify the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans about their schedule for project construction. The purpose of this notification is to request the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans to consider public right-of-way repair or improvement activities after project construction has taken place and to coordinate construction-related activities.

Verification: Prior to the start of site mobilization, the project owner shall photograph, or videotape the following applicable affected public right-of-way segment(s) (includes intersections): Indian Avenue, Dillon Road, Melissa Lane, State Route 62, South Murray Canyon Drive, and Kings Road East. The project owner shall provide the CPM, the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans with a copy of these images.

Within 60 calendar days after completion of construction, the project owner shall meet with the CPM, the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans to identify sections of public right-of-way to be repaired, to establish a schedule to complete the repairs and to receive approval for the action(s). Following completion of any public right-of-way repairs, the project owner shall provide to the CPM a letter signed by the county of Riverside Transportation and Land Management Agency, the city of Palm Springs Department of Public Works and Engineering, and Caltrans stating their satisfaction with the repairs.

TRANS-5 Prior to the start of commercial operation, the project owner shall dedicate, and complete improvement of Melissa Lane from Dillon Road to the 16th Avenue according to the county of Riverside standard for a collector rural road – Riverside County Standard No. 136. The project owner shall improve this portion of Melissa Lane with 28-feet of asphalt concrete pavement within a 60-foot full-width dedicated right-of-way including standard corner cutback in accordance to county standards.

The project owner shall also dedicate and complete improvement of roadway from 16th Avenue north to the project site to the County of Riverside standard for a commercial driveway – Riverside County Standard No. 207A, or improved to a standard agreed to by the Director of the County of Riverside Transportation and Land Management.

Verification: Not later than a 180 days prior to the estimated start of commercial operation, the project owner shall submit to the Director of the county of Riverside Transportation and Land Management Agency, Planning Department for review, the required improvement plan(s) for Melissa Lane, and the roadway north of 16th Avenue to the project site, and the completed forms for the dedication of the roadway segments.

The project owner shall provide to the CPM a copy of the transmittal letter submitted to the county of Riverside Department of Transportation and Land Management Agency, Planning Department requesting their review of the improvement plans and dedication of roadway submitted for Melissa Lane and the roadway north of 16th Avenue to the project site.

The project owner shall allow the Director of the county of Riverside Transportation and Land Management Agency, Planning Department 30 days to provide comment on the improvement plans and roadway dedication.

The project owner shall provide a copy of the Director of the county of Riverside Transportation and Land Management Agency, Planning Department comments to the CPM prior to the start of construction of the improvements to Melissa Lane and the roadway north of 16th Avenue to the project site, and roadway dedication.

If the CPM determines that the improvement plans and/or the roadway dedication requires revision, the project owner shall provide to the CPM and the Director of the county of Riverside Transportation and Land Management Agency, Planning Department a plan and/or roadway dedication request with the specified revision(s) for review and approval by the CPM before the improvement plan is implemented.

The project owner shall simultaneously notify the CPM and the Director of the county of Riverside Transportation and Land Management Agency, Planning Department that the improvement to Melissa Lane and the roadway north of 16th Avenue to the project site is completed and ready for final inspection.

TRANS-6 Prior to the start of commercial operation, the project owner shall pay to the county of Riverside or designee, the Transportation Uniform Mitigation Fee calculated for the CPV Sentinel Energy Project in accordance to Riverside County Ordinance 673.

Verification: Prior to the start of commercial operation, the project owner shall provide to the CPM a copy of the receipt provided by the county of Riverside or its designee demonstrating payment of Transportation Uniform Mitigation Fee.

C. SOCIOECONOMICS

This topic reviews pertinent demographic information within both a one-mile and six-mile radius of the Project site and evaluates the effects of Project-related population changes on local schools, medical and fire protection services, public utilities and other public services, as well as the fiscal and physical capacities of local government to meet those needs. The public benefits of the Project are also reviewed, including both the beneficial impacts on local finances from property and sales taxes as well as the potential adverse impacts upon public services. The evidence for this topic was undisputed. (Exs. 14, 110; Ex. 200, p. 4.8-1 et seq.; 11/03/08 RT 16.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Demographics and Employment

The Project site is located in an unincorporated area of western Riverside County, about 2.5 miles west of Desert Hot Springs. The demographic study area for the Project includes Riverside County and the cities of Palm Springs and Desert Hot Springs. (Ex. 200, pp. 4.8-2 and 4.8-3; Ex. 14, p. 7.8-1.)

The construction phase is the focus of this analysis because the potential influx of workers and their dependents into the area could increase demand for community resources. The record indicates that Riverside County is the fourth largest county in California and among the fastest growing counties in the state. According to statistics cited in the record, Riverside County had a large construction labor force of approximately 112, 000 in 2006 and the availability of labor was expected to increase during the coming decade.[1] (Ex. 200, pp. 4.8-3 and 4.8-4; Ex. 14, pp. 7.8-1 through 7.8-3.)

The Project's construction period is estimated at 18 months. The number of construction workers will range from a minimum of 27 in the first month of construction to a peak of 371 in the sixth month. The average number of workers for the 18-month period is estimated at 212. Project operation and maintenance will require ten skilled full-time employees and four part-time employees. (Ex. 200, p. 4.8-5; Ex. 74, Response 74.)

[1] Statistics for the Riverside-San Bernardino Metropolitan Statistical Area (MSA) were compiled by the U.S. Census 2006 American Community Survey. (Ex. 200, p. 4.8-4.)

The parties anticipate that all construction labor and the majority of operations staff will be local. Given the large labor force within two hours commuting time of the Project, there is no evidence that employees will be likely to relocate to the immediate area. (Ex. 200, p. 4.8-6; Ex. 14, p. 7.8-8.)

We therefore find that the construction and operation workforce will not induce substantial growth or concentration of population and the Project will not encourage workers to permanently move into the area. Consequently, the Project would have no direct or indirect impact on substantial population growth in the area. (Ex. 200, p. 4.8-16.)

The availability of short-term housing for construction workers is documented in the record. In addition to apartments and other rental housing, there are thousands of hotel/motel rooms in Palm Springs and Desert Hot Springs as well as hundreds of mobile home park spaces that could be used for temporary housing. Given the expectation that most workers will commute to the site on a daily basis, there is no evidence that Project construction or operation will adversely impact local housing. Rather, the evidence indicates that rental income will provide an indirect economic benefit to the community. (Ex. 200, pp. 4.8-6 to 4.8-7; Ex. 14, p. 7.8-3.)

There is no evidence that the Project will adversely impact local schools, utilities, recreational parks, emergency services, or law enforcement since the workforce will be commuting rather than moving to the area.[2] See discussion on emergency services in the **Worker Safety & Fire Protection** section of this Decision. The Project Owner is required to pay regulatory fees to the Palm Springs Unified School District, the Riverside County Transportation and Land Management Agency, and the County Planning Department. (Ex. 14, pp. 7.8-4 through 7.8-6; Ex. 200, pp. 4.8-9 through 4.8-12.) Conditions of Certification **SOCIO-1**, **SOCIO-2**, and **SOCIO-3** ensure that the appropriate fees are paid.

Noteworthy public benefits include the direct, indirect, and induced impacts of a proposed power plant. According to the record, the capital cost of constructing the Sentinel Project is approximately $380 million (2007 dollars). The estimated construction payroll is $41.8 million over 18 months and the estimated operations

[2] The potential influx of all 14 permanent employees and their families into the area will not affect housing or public services since there is a large supply of owner-occupied houses and rental properties available in Riverside County and local schools have the capacity to accommodate the employees' children. (Ex. 200, pp. 4.8-7 and 4.8-8.)

payroll is $1.322 million annually to the region. (Ex. 200, p. 4.8-9; Ex. 14, pp. 7.8-9 and 7.8-10.)

The project will yield approximately $5.1 million in property tax revenues to Riverside County annually, based on the assessed property value of approximately $440 million. State of California sales tax revenues of approximately $23,287,000 will be generated from retail sales during construction (*e.g.*, gas, food, and lodging, and locally purchased construction supplies). The state is expected to allocate one percent of the sales tax ($2,332,000) to Riverside County and 0.5 percent ($1,166,000) to the Riverside County Transportation Commission. (Ex. 200, pp. 4.8-8 and 4.8-9; Ex. 14, pp. 7.8-9 and 7.8-10.)

Although most major equipment for the Project will be purchased outside Riverside County, the Project Owner will purchase about $9 million of construction-related building materials and supplies within Riverside County. (Ex. 200, pp. 4.8-8 and 4.8-9; Ex. 14, pp. 7.8-9 and 7.8-10.)

The operational sales tax is estimated at $34,875 (7.75 percent sales tax multiplied by $450,000 worth of locally purchased materials) during the first year of operation. Most of this revenue ($28,125) will go to the state. An estimated $4,500 will be retained by Riverside County and $2,250 by the Riverside County Transportation Commission. (Ex. 200, pp. 4.8-8 and 4.8-9; Ex. 14, pp. 7.8-9 and 7.8-10.)

2. Cumulative Impacts

The evidence shows that the large size of the available workforce in the region ensures that the Project's construction, in conjunction with construction of other nearby projects, will not adversely impact the availability of workers to complete other projects. Since the Sentinel Project will not cause any significant adverse socioeconomic impacts to population, housing, or public services due to the temporary nature of construction, it is unlikely that it would contribute significantly to cumulative socioeconomic impacts. Thus, the Project's impact on socioeconomic factors, when combined with the existing or anticipated impact of other development, is not cumulatively considerable. (Ex. 200, pp. 4.8-13 and 4.8-14.)

3. Environmental Justice Aspects

Section 65040.12 (c) of the Government Code defines "environmental justice" as the "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." For each power plant proposal, Staff evaluates the Project's potential impacts on minority and low-income (below poverty level) populations in the Project vicinity. The record contains Staff's demographic screening conducted in accordance with the "Final Guidance for Incorporating Environmental Justice Concerns in U.S. EPA's National Environmental Policy Act (NEPA) Compliance Analysis" (EPA 1998).

Minority populations are identified by the U.S. EPA for environmental justice review when:

- The minority population of the affected area is greater than 50 percent of the affected area's general population; or
- The minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- One or more census blocks in the affected area have a minority population greater than 50 percent.

Minority groups include: American Indian or Alaskan Native; Asian or Pacific Islander; African American not of Hispanic origin; or Hispanic. Low-income populations are identified by the annual statistical poverty thresholds from the Bureau of the Census's Current Population Reports on Income and Poverty. (Ex. 200, p. 4.8-3.)

According to Staff, Census 2000 information for the Project vicinity indicates that the minority population by census block (the smallest geographic unit for which the Census Bureau collects and tabulates data) is 53.53 percent within a six-mile radius of the site. Census 2000 information also shows that the below-poverty population is 22.47 percent within a six-mile radius. (Ex. 200, p. 4.8-3.)

Based on this information, we find that the minority population exceeds 50 percent in the Project vicinity. However, since the record shows that the Project has mitigated all potential health and safety and environmental impacts to levels below significance for any affected population, we conclude that there are no

disproportionate impacts on environmental justice populations. (Ex. 200, p. 4.8-3.) See discussion on environmental justice in each of the health and safety and environmental topics in this Decision.

PUBLIC COMMENT

Riverside County requested that the Project Owner pay the Transportation Uniform Mitigation Fee as required by County ordinance. Condition **SOCIO-2** directs the Project Owner to pay this fee prior to the start of construction.

FINDINGS OF FACT

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

1. The Sentinel Project will draw primarily upon the labor force in Riverside County for both the construction and operation workforce.

2. Construction workers and permanent employees who live within a two-hour commute to the site are not likely to relocate to the Project area.

3. The Project will not cause a significant influx of construction or operation workers into the Project area.

4. The Project is not likely to have a significant adverse effect upon local employment, housing, schools, utilities, recreational parks, medical resources, or fire and police protection.

5. The Project will provide direct, indirect, and induced economic benefits in Riverside County by payment of property taxes, regulatory fees, payroll, sales taxes, and other business expenses.

6. Construction and operation of the Project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

7. Review of the Project is consistent with environmental justice principles.

8. Minority populations exist within a six mile radius of the site.

9. All potential health and safety and environmental impacts from the Project will be mitigated to insignificant levels for all affected populations including minority populations.

10. The Project will not cause or contribute to disproportionate impacts upon minority populations.

CONCLUSIONS OF LAW

We therefore conclude that with implementation of the Conditions of Certification listed below, Project construction and operation will provide economic benefits to the local area and is consistent with principles of environmental justice.

CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner shall pay a one-time statutory Development Impact Fee to Riverside County.

Verification: At least 30 days prior to the start of construction, the project owner shall provide proof of payment of the statutory Development Impact Fee to the Energy Commission CPM.

SOCIO-2 The project owner shall pay a one-time statutory Transportation Uniform Mitigation Fee to Riverside County.

Verification: At least 30 days prior to the start of construction, the project owner shall provide proof of payment of the statutory development impact fee to the Energy Commission CPM.

SOCIO-3 The project owner shall pay the one-time statutory school facility development fee to the Palm Springs Unified School District as required by Education Code section 17620.

Verification: At least 30 days prior to the start of project construction, the project owner shall provide to the CPM proof of payment of the statutory development mitigation fee.

D. NOISE AND VIBRATION

This topic evaluates whether noise and vibration produced during project construction or operation will be sufficiently mitigated to comply with applicable law. We consider factors such as the character and loudness of the noise, the times of day or night when it is produced, and the proximity to sensitive receptors to determine whether project noise will result in adverse environmental impacts. We also review whether vibration due to construction or operation will cause adverse impacts to adjacent properties. The evidence on this topic was undisputed. (11/03/08 RT 17; Exs. 11, 43, 44, 45, 46, 89, 108, 200, p. 4.6-1 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Laws that regulate noise disturbances in the project vicinity are included in the Riverside County General Plan Noise Element. Table N-1 of the Noise Element (Land Use Compatibility for Community Noise Exposure) establishes community noise exposure levels for different land use categories. Where the noise receptors are single-family homes, duplexes, or mobile homes, the "normally acceptable" and "conditionally acceptable" levels are 60 dBA L_{dn} (or CNEL) and 65 dBA L_{dn} (or CNEL), respectively. Where the noise receptors are multiple family dwellings, transient lodging, or motels and hotels, the normal and conditionally acceptable levels are 65 dBA L_{dn} (or CNEL) and 70 dBA L_{dn} (or CNEL), respectively. (Ex. 200, p. 4.6-3; Ex. 11, p. 7.5-15.)

Table N-2 of the Noise Element (Stationary Source Land Use Noise Standards) limits the noise levels at residential receptors that are caused by a stationary source such as a power plant. These limits are 65 dBA L_{eq} daytime (7 a.m. to 10 p.m.) and 45 dBA L_{eq} nighttime (10 p.m. to 7 a.m.). Section 9.52.040 of the Riverside County Code establishes the same external noise limitations at any occupied property on land designated PF-Public Facility – the zoning designation for the project site. (Ex. 200, p. 4.6-3.)

Section 9.52.020 I of the Riverside County Code exempts from limitation construction noise that is created one-quarter mile or more from any inhabited dwelling provided the noise is restricted to the hours of 6 a.m. to 6 p.m. during the months of June through September, and the hours of 7 a.m. to 6 p.m. from October through May. (Ex. 200, p. 4.6-3.)

CEQA Guidelines set forth characteristics of noise impacts that may indicate potentially significant effects from project-related noise, such as "a substantial

permanent increase in ambient noise levels in the project vicinity above levels existing without the project." (Cal. Code Regs., tit. 14, § 15000 et seq., appen. G, Sec. XI.) In accordance with this standard, Staff uses the significance threshold of 5 dBA when project-related noise emissions exceed existing ambient noise levels at the nearest sensitive receptor. Staff believes an increase in background noise levels up to 5 dBA in a residential setting is insignificant but an increase of more than 10 dBA is clearly significant. An increase between 5 and 10 dBA may be considered adverse, but could be either significant or insignificant, depending upon the particular circumstances of a given case. (Ex. 200, p. 4.6-4.)

Factors to be considered in determining the significance of an adverse impact as defined above include: (1) the resulting noise level; (2) the duration and frequency of the noise; (3) the number of people affected; and (4) the land use designation of the affected receptor sites. Noise due to construction activities is usually considered insignificant in terms of CEQA compliance if the construction activity is temporary and the use of heavy equipment and noisy[1] activities are limited to daytime hours. (Ex. 200, p. 4.6-4.)

1. The Setting

The project site is located in an area designated "PF-Public Facilities" and zoned W-2 "Controlled Development Area." Large-scale power plants and transmission corridors are permitted uses within the PF designation. The Devers Substation is 700 feet west of the site and the immediate project area is characterized by industrial uses, wind energy turbine installations, freeways, and local roads. Nearby noise sensitive receptors include four residences. Residence A (340 feet south of the site) and Residence B (330 feet east of the site) will be purchased by the project owner and vacated prior to construction. The project owner has offered to purchase Residence C (1,000 feet to the east) and Residence D (1,300 feet to the east) to prevent significant noise impacts at those locations. (Ex. 200, p. 4.6-5; Ex. 11, pp. 7.5-3, 7.5-4, 7.5-15.)

2. Potential Impacts

Applicant conducted a 24-hour noise survey on May 9-10, 2007, to identify existing background noise levels at sensitive locations near the site as described below. (Ex. 11, p. 7.5-4 et seq.; Ex. 200, p. 4.6-6.)

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[1] Noise that draws legitimate complaint.

- Measuring Location LT-1: Near Residence C, approximately 1,000 feet east of the site boundary, representing the nearest sensitive receptor. Long-term (25-hour) monitoring showed that ambient noise consisted chiefly of wind noise, with some noise from rustling leaves, nearby wind turbines, birds, and aircraft overflights.

- Measuring Location ST-1: At the same location as LT-1. Short-term (five-minute) measurements were taken at midday.

- Measuring Location ST-2: At a group of residences approximately 2,450 feet southwest of the site boundary. Short-term (five-minute) monitoring taken at midday showed ambient noise similar to that at ST-1.

- Measuring Location ST-3: Near Residence D, approximately 1,300 feet east of the site boundary. Short-term (five-minute) monitoring taken around 2:30 p.m. showed ambient noise similar to that at ST-1. Two more residences lie further to the east of this location.

Staff's Noise Table 2, below, summarizes the noise survey results. (Ex. 200, p. 4.6-7.)

Staff's Noise Table 2
Summary of Measured Ambient Noise Levels

Measurement Location	Measured Noise Levels, dBA		
	L_{eq} – Daytime	L_{eq} – Nighttime	L_{90}
LT-1: Near Residence C, 1,000 feet east*	55.4[1]	55.7[2]	49.3[3]
ST-1: Near Residence C, 1,000 feet east*	49	—	46.5[4]
LT-2: Near residences 2,450 feet southwest	47.1[1]	47.0[2]	43.6[3]
ST-2: Near residences 2,450 feet southwest	43	—	40[4]
ST-3: Near Residence D, 1,300 feet east	50	—	48[4]

Source: Ex. 11, Tables 7.5-2 and 7.5-3; Ex. 89, Table 1
[1] Staff calculations of average of 15 daytime hours
[2] Staff calculations of average of 9 nighttime hours
[3] Staff calculations of average of 4 consecutive quietest hours of the nighttime
[4] Daytime
*Represents nearest sensitive receptor

The ambient noise levels reflected in this summary were used to evaluate the project's potential noise impacts.

3. Mitigation Measures

Construction. Construction noise is considered a temporary phenomenon. project construction in this case is expected to last 18 months. Since construction noise typically varies continually with time, it is measured by, and compared to, the L_{eq} (energy average) metric. (Ex. 200, p. 4.6-8.)

The project's estimated construction noise could potentially reach levels as high as 60 dBA L_{eq} at the nearest sensitive receptor residence at LT-1, and 52 dBA L_{eq} at the residences at LT-2, southwest of the site. Comparing estimated construction noise levels to ambient noise levels shows an increase of 6 dBA during the daytime and 5 dBA at night at LT-1 and an increase of 6 dBA at LT-2 during both daytime and nighttime. Such an increase is noticeable, but would not typically result in complaints. (Ex. 11, p. 7.5-9 et seq.; Ex. 200, p. 4.6-8.) To ensure that residents are informed about construction noise, Conditions of Certification **NOISE-1** and **NOISE-2** require the project owner to establish a Notification Process to notify nearby residents and a Noise Complaint Process to resolve problems caused by project noise.

Condition **NOISE-6** requires the project owner to limit noisy construction to daytime hours and to use appropriate mufflers on noisy equipment.[2] Since the hours of noisy construction will be restricted to comply with local noise standards, construction noise should not result in a significant adverse impact. (Ex. 200, p. 4.6-7.)

To protect construction workers from injury due to excessive noise during construction-related activities, Condition **NOISE-3** requires the project owner to implement a noise control program for construction workers in accordance with Cal/OSHA standards.[3] (Ex. 200, p. 4.6-10.)

Pile driving is typically the noisiest construction activity. Evidence indicates that noise from pile driving typically reaches 104 dBA at a distance of 50 feet. Therefore, according to Staff, pile driving noise at the project site could

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[2] Since construction of linear facilities moves along the route rapidly; no noise receptor will be exposed to the noisy work for more than a few days. Limiting noisy construction to daytime hours should provide adequate mitigation along the linear corridors. (Ex. 200, p. 4.6-9.)

[3] Regulations adopted by the federal Occupational Safety and Health Administration (OSHA) and the state Cal/OSHA protect workers from noise-related health and safety hazards. (29 C.F.R., §1910 et seq.; Cal. Code Regs., tit. 8, § 5095 et seq.) Condition **NOISE-5** requires a noise survey and necessary mitigation for onsite permanent workers after operation begins. See discussion in **WORKER SAFETY AND FIRE PROTECTION** section of this Decision.

potentially reach a level of 78 dBA at LT-1, the nearest residential receptor. Assuming daytime noise levels of 55 dBA at LT-1, adding pile driving noise to the daytime ambient levels would produce an increase of 23 dBA at LT-1. Similarly, pile driving noise levels could reach 70 dBA at LT-2, producing an increase in daytime noise levels of 23dBA. These calculations represent more than a quadrupling in noise levels and a huge increase in noise disturbance. However, since pile driving is a temporary activity lasting a couple of weeks, limiting pile driving to daytime hours consistent with Condition **NOISE-6** will reduce impacts to tolerable levels. (Ex. 200, p. 4.6-9.)

Pile driving is the only construction operation likely to produce vibration that could affect off-site properties; however, vibration attenuates rapidly and should not be perceptible at any appreciable distance from the project site. Thus, there is no evidence of significant impacts from construction vibration. (Ex. 200, p. 4.6-9.)

Operation. During operation, the project's primary noise sources include the gas turbine generators, gas turbine air inlets, selective catalytic reduction units and their exhaust stacks, cooling towers and their fans, electrical transformers, fuel gas compressors and metering equipment, and various pumps and fans. To reduce the effects of project noise, mitigation measures include: (1) enclosing the natural gas compressors in sound-attenuated buildings; (2) employing gas turbine exhaust stack silencers; and (3) purchasing and removing Residences A and B, the two residences nearest the project site. (Ex. 200, p. 4.6-10.)

The Applicant performed noise modeling to determine the project's noise impacts assuming the purchase and removal of Residences A, B, C, and D. However, negotiations to purchase Residences C and D were unsuccessful and Applicant reconsidered the noise estimates at those locations. In comparison with the monitoring survey results of equipment noise emissions at existing power plant facilities, Applicant noted that the initial noise modeling data for the Sentinel Project were based on extremely conservative estimates by the equipment manufacturers, which exceed actual power plant noise by 7 dBA. (Ex. 82, Attachment B; Ex. 200, p. 4.6-10.) Applicant subsequently adjusted the initial modeling results to correct this overestimate.

Staff's Noise Table 5, below, incorporates the 7 dBA correction for steady, continuous operating noise and shows that project noise at the sensitive receptors (minus Residences A & B) will likely comply with Table N-1 of the County's General Plan Noise Element. project noise at LT-2 will likely comply with all applicable LORS. However, project noise at LT-1 (Residence C) and ST-

3 (Residence D) will only comply with Table N-2 of the Noise Element and with Table 1 of the County Code during daytime hours.

Staff's Noise Table 5
Plant Operating Noise LORS Compliance

LORS	LORS Limit	Receptor	Projected Noise Level	In Compliance
Riverside County General Plan Noise Element, Table N-1	65 dBA CNEL (58 dBA L_{eq})	Residence C (LT-1) (1,000 feet E)	49 dBA L_{eq}	Yes
		LT-2 (2,450 feet SW)	38 dBA L_{eq}	Yes
		Residence D (ST-3) (1,300 feet E)	46 dBA L_{eq}	Yes
Riverside County General Plan Noise Element, Table N-2	45 dBA L_{eq} nighttime, 65 dBA L_{eq} daytime	Residence C (LT-1) (1,000 feet E)	49 dBA L_{eq}	Yes[2]
		LT-2 (2,450 feet SW)	38 dBA L_{eq}	Yes
		Residence D (ST-3) (1,300 feet E)	46 dBA L_{eq}	Yes[2]
Riverside County Code, Section 9.52.040,Table 1	45 dBA L_{max} nighttime, 65 dBA L_{max} daytime[1]	Residence C (LT-1) (1,000 feet E)	49 dBA L_{eq}	Yes[2]
		LT-2 (2,450 feet SW)	38 dBA L_{eq}	Yes
		Residence D (ST-3) (1,300 feet E)	46 dBA L_{eq}	Yes[2]

Source: Ex. 11, p. 7.5-20, Table 7.5-5
[1] For a steady noise source such as a power plant, L_{max} can be assumed to equate to L_{eq}.
[2] See discussion, below.

According to Staff, existing ambient noise levels already exceed the LORS limits in Tables 1 and N-2. (See Staff's Noise Table 2: Summary of Measured Ambient Noise Levels, above.) At LT-1, the ambient value of 55.7 dBA L_{eq} exceeds the 45 dBA L_{eq} LORS limit by almost 11 dBA and exceeds the estimated project noise level by nearly 7 dBA. At ST-3, the ambient value of 50 dBA L_{eq} exceeds the 45dBA L_{eq} LORS limit by 5 dBA and exceeds the project noise level by 4 dBA. Staff therefore determined that power plant noise at these locations would range from unnoticeable to inaudible. Although Riverside County does not address the circumstance where actual ambient noise exceeds the LORS limit, many jurisdictions take the actual ambient value to be the new limit. Staff recommended that this approach be used here. We agree in this case because the project site is located in an industrial area where residences are not the predominant uses. We therefore find that the project's operating noise will, in fact, comply with LORS (actual ambient noise levels) at both LT-1 and ST-3 (LT-2).[4] (Ex. 200, p. 4.6-11.)

[4]According to Staff, the two dwellings east of Residence D are as distant from the noise-producing portions of the Project as the residences at ST-2 and thus, Project noise at these residences would be similar to noise at ST-2 and in compliance with LORS. (Ex. 200, 4.6-11.)

The power plant will likely operate at night particularly during summer months when air conditioning loads are high. Consistent with CEQA requirements, Staff compared project noise with the nighttime ambient levels since the potential for annoyance is greatest when residents are trying to sleep. Since nighttime ambient noise levels are typically lower than daytime levels by a range of 5 to 10 dBA, Staff averaged the lowest nighttime hourly background noise levels to determine a reasonable baseline for comparison with the project's predicted noise levels. (Ex. 200, p. 4.6-12 to 4.6-13.)

As shown in Staff's **Table 5** (Plant Operating Noise), above, power plant noise levels at LT-1 (the nearest sensitive receptor) are predicted to reach 49 dBA L_{eq} and at LT-2 are predicted to reach 38 dBA L_{eq}. Staff's **Noise Table 6**, below, compares operating noise with nighttime ambient noise levels.

Staff's Noise Table 6
Power Plant Noise Impacts at Nearest Sensitive Receptors

Receptor	Power Plant Noise Level, dBA L_{eq}[1]	Nighttime Ambient Background Level, dBA L_{90}	Cumulative Noise Level, dBA	Change from Ambient Background Level
LT-1: Near Residence C	49	49[2]	52	+3
LT-2	38	44[3]	45	+1

[1] Source: Ex. 89, Table 1
[2] Source: Ex. 11, p. 7.5-18, Table 7.5-2, and Staff calculations of average of four quietest consecutive nighttime hours
[3] Source: Ex. 89, Table 1 and Staff calculations of average of four quietest consecutive nighttime hours

The evidence indicates that the predicted plant noise at LT-1 added to the average nighttime value calculated by Staff would result in 3 dBA above the ambient noise level, which is considered barely noticeable and not significant. Adding projected plant noise to the nighttime ambient at LT-2 yields an increase of 1 dBA, an unnoticeable increase. Further, the two residences east of LT-1 are approximately the same distance from the site as those at LT-2, and noise effects would likely be similar to those at LT-2. (Ex. 200, p. 4.6-13.) To ensure that actual project noise levels do not exceed the predicted levels, Condition **NOISE-4** requires the project owner to restrict noise levels to an average of 48 dBA L_{eq} at LT-1 (Residence C) and to avoid the creation of tonal noises (pure tones) that are distinctive in sound quality.

Vibration. An operating power plant can transmit both ground-borne vibration and airborne vibration. The project's operating components are designed to prevent equipment damage from vibration and are also balanced to eliminate

perceptible ground-borne vibration at nearby off-site receptors. (Ex. 200, p. 4.6-14.)

Airborne vibration (low frequency noise) can rattle windows, objects on shelves, and the walls of lightweight structures. The project's main source of airborne vibration could potentially result from engine exhaust; however, the exhaust will pass through selective catalytic reduction (SCR) units and stack silencers before reaching the atmosphere. The SCR units and stack silencers combine to muffle exhaust sound and reduce any perceptible airborne vibration to insignificant levels. (Ex. 200, p. 4.6-14.)

4. Cumulative Impacts/Environmental Justice Populations

New developments in the project area are located at considerable distances from the Sentinel site. It is therefore unlikely that Sentinel could contribute to a significant cumulative noise impact in conjunction with other projects. Even though low-income and minority populations exist in the immediate area, there are no significant unmitigated adverse noise impacts or cumulative noise impacts associated with the Sentinel Project and therefore, no significant adverse impacts to minority or low-income populations are expected to occur. (Ex. 200, p. 4.6-15.)

FINDINGS OF FACT

Based on the uncontroverted evidence, the Commission makes the following findings and conclusions:

1. Construction and operation of the Sentinel Project will increase noise levels above existing ambient levels in the surrounding community.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to daytime hours in accordance with local noise control laws ordinances, regulations, and standards (LORS) and providing notice and a complaint process to nearby residences and businesses.

3. The Applicant conducted an ambient noise survey at the nearest residential noise receptors to establish a baseline for comparing the potential impacts of predicted Project noise during operation.

4. The nearest sensitive residential noise receptor at LT-1 (Residence C) is located approximately 1,000 feet east of the Project site.

5. The second nearest residential noise receptors at LT-2 (group of residences) are located 2,450 feet southwest of the Project site.

6. The third sensitive residential noise receptor at ST-3 (Residence D) is located 1,300 feet east of the Project site boundary.

7. Applicant's initial modeling data, which were based on the manufacturers' conservative assumptions, overestimated Project-only noise by 7 dBA and were subsequently adjusted to reflect actual equipment noise levels determined by noise monitoring surveys at existing power plant facilities.

8. The Project's noise impacts during nighttime hours are considered key since the potential for annoyance to residential receptors is more likely when they are trying to sleep.

9. Existing night-time average ambient noise levels of 49 dBA L_{90} at LT-1 currently exceed the Riverside County LORS night-time noise limit of 45 dBA L_{eq}.

10. Although Riverside County does not address the circumstance where actual ambient noise levels exceed LORS levels, many jurisdictions typically deem the ambient levels to represent new LORS limits and we find it is a reasonable resolution in this case. Therefore, we assume 49 dBA L_{eq} is the new LORS night-time noise limit.

11. Noise reduction measures shall be incorporated into Project design to ensure that Project-only operational noise shall not exceed 48 dBA Leq at LT-1 (Residence C), which effectively limits any noise increase to existing average night-time ambient levels to ensure compliance with CEQA and local LORS.

12. There is no evidence of potential airborne or ground-borne vibration due to Project construction or operation.

13. The project owner will implement measures to protect workers from injury due to excessive noise levels by complying with pertinent Cal/OSHA regulations.

14. The project owner will conduct an operational noise survey to determine compliance with the required noise limitations and, if necessary, implement additional mitigation measures to achieve compliance.

15. The project owner will implement the mitigation measures identified in the evidentiary record and the Conditions of Certification to ensure that Project-related noise emissions do not cause significant adverse impacts to sensitive noise receptors.

CONCLUSIONS OF LAW

1. The Commission therefore concludes that implementation of the following Conditions of Certification ensure that the CPV Sentinel Project will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the evidentiary record and in pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within three-quarter mile of the site, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project and include that telephone number in the above notice. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and operation of the CPV Sentinel Project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;

- Take all feasible measures to reduce the noise at its source if the noise is project related; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts, and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program and a statement, signed by the project owner's project manager, verifying that the noise control program will be implemented throughout construction of the Project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal/OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program and the project owner's project manager's signed statement. The project owner shall make the program available to Cal/OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause noise levels due solely to plant operation to exceed an average of 48 dBA L_{eq} measured at monitoring location LT-1, the residence referred to as Residence C on **Noise and Vibration Figure 1** of Staff's Final Staff Assessment (Exhibit 200, p. 4.6-1 et seq.). No new pure-tone components may be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

The measurement of power plant noise for the purposes of demonstrating compliance with this condition of certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (*e.g.,* 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected residential locations to

determine the presence of pure tones or other dominant sources of plant noise.

A. When each phase of the project[5] first achieves a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct a community noise survey at monitoring location LT-1 or at closer locations acceptable to the CPM. This survey shall be performed during power plant operation and shall also include measurement of one-third octave band sound pressure levels to determine whether new pure-tone noise components have been caused by the project.

B. If the results from either noise survey indicate that the power plant average noise level (L_{eq}) at LT-1 exceeds the above value, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

C. If the results from either noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: Each survey shall take place within 30 days of each phase of the project first achieving a sustained output of 90 percent or greater of rated capacity. Within 15 days after completing each survey, the project owner shall submit a summary report of the survey to the CPM. Included in each survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above-listed noise limit and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM a summary report of the new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 Following each phase of the project first achieving a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility.

The survey shall be conducted by a qualified professional in accordance with the provisions of Title 8, California Code of Regulations, sections 5095–5099 and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

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[5] Phase 1 encompasses 5 gas turbine generator units and their auxiliary equipment; Phase 2 adds 3 additional units and their auxiliary equipment.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing 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.

CONSTRUCTION TIME RESTRICTIONS

NOISE-6 Noisy construction work relating to any project features shall be restricted to the times of day delineated below:

June through September	6 a.m. to 6 p.m.
October through May	7 a.m. to 6 p.m.

Haul trucks and other engine-powered equipment shall be equipped with mufflers that meet all applicable regulations. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

For purposes of this Condition, “noisy construction work” shall be defined as any project-related work that draws a legitimate noise complaint. A legitimate noise complaint refers to a noise caused by the construction of the CPV Sentinel Project, as opposed to another source, as verified by the CPM. A legitimate complaint constitutes either: a violation by the project of any noise condition of certification, which is documented by another individual or entity affected by such noise; or a minimum of three complaints over a 24-hour period that are confirmed by the CPM, the project owner, or any local or state agency that would, but for the exclusive jurisdiction of the Energy Commission, otherwise have the responsibility for investigating noise complaints or enforcing noise mitigation.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

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EXHIBIT 1
NOISE COMPLAINT RESOLUTION FORM

CPV Sentinel Energy Project
[Docket No. 07-AFC-3 (C)]

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).

NOISE APPENDIX A
FUNDAMENTAL CONCEPTS OF COMMUNITY NOISE

To describe noise environments and to assess impacts on noise sensitive area, a frequency weighting measure, which simulates human perception, is customarily used. It has been found that "A-weighting" of sound intensities best reflects the human ear's reduced sensitivity to low frequencies and correlates well with human perceptions of the annoying aspects of noise. The A-weighted decibel scale (dBA) is cited in most noise criteria. Decibels are logarithmic units that conveniently compare the wide range of sound intensities to which the human ear is sensitive. **NOISE Table A1** provides a description of technical terms related to noise.

Noise environments and consequences of human activities are usually well represented by an equivalent A-weighted sound level over a given time period (L_{eq}), or by average day and night A-weighted sound levels with a nighttime weighting of 10 dBA (L_{dn}). Noise levels are generally considered low when ambient levels are below 45 dBA, moderate in the 45 to 60 dBA range, and high above 60 dBA. Outdoor day-night sound levels vary over 50 dBA depending on the specific type of land use. Typical L_{dn} values might be 35 dBA for a wilderness area, 50 dBA for a small town or wooded residential area, 65 to 75 dBA for a major metropolis downtown (*e.g.,* San Francisco), and 80 to 85 dBA near a freeway or airport. Although people often accept the higher levels associated with very noisy urban residential and residential-commercial zones, those higher levels nevertheless are considered to be levels of noise adverse to public health.

Various environments can be characterized by noise levels that are generally considered acceptable or unacceptable. Lower levels are expected in rural or suburban areas than would be expected for commercial or industrial zones. Nighttime ambient levels in urban environments are about seven decibels lower than the corresponding average daytime levels. The day-to-night difference in rural areas away from roads and other human activity can be considerably less. Areas with full-time human occupation that are subject to nighttime noise, which does not decrease relative to daytime levels, are often considered objectionable. Noise levels above 45 dBA at night can result in the onset of sleep interference effects. At 70 dBA, sleep interference effects become considerable (U.S. Environmental Protection Agency, Effects of Noise on People, December 31, 1971).

To help the reader understand the concept of noise in decibels (dBA), **NOISE Table A2** illustrates common noises and their associated sound levels, in dBA.

NOISE Table A1
Definition of Some Technical Terms Related to Noise

Terms	Definitions
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L_{10}, L_{50}, & L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the noise level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance 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.

Source: Guidelines for the Preparation and Content of Noise Elements of the General Plan, Model Community Noise Control Ordinance, California Department of Health Services 1976, 1977.

NOISE Table A2
Typical Environmental and Industry Sound Levels

Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Handbook of Noise Measurement, Arnold P.G. Peterson, 1980

Subjective Response to Noise

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise or of the corresponding reactions

of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

With regard to increases in A-weighted noise levels, knowledge of the following relationships can be helpful in understanding the significance of human exposure to noise.

1. Except under special conditions, a change in sound level of 1 dB cannot be perceived.

2. Outside of the laboratory, a 3 dB change is considered a barely noticeable difference.

3. A change in level of at least 5 dB is required before any noticeable change in community response would be expected.

4. A 10-dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response (Kryter, Karl D., The Effects of Noise on Man, 1970).

Combination of Sound Levels

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a 3-dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus 3 dB). **NOISE Table A3** indicates the rules for decibel addition used in community noise prediction.

NOISE Table A3 Addition of Decibel Values	
When two decibel values differ by:	Add the following amount to the larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0
Figures in this table are accurate to ± 1 dB.	

Source: Architectural Acoustics, M. David Egan, 1988.

Sound and Distance

Doubling the distance from a noise source reduces the sound pressure level by 6 dB.

Increasing the distance from a noise source 10 times reduces the sound pressure level by 20 dB.

NOISE Table A3 Addition of Decibel Values	
When two decibel values differ by:	Add the following amount to the larger value
0 to 1 dB	3 dB
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10 dB or more	0
Figures in this table are accurate to ± 1 dB.	

Source: Architectural Acoustics, M. David Egan, 1988.

Sound and Distance

Doubling the distance from a noise source reduces the sound pressure level by 6 dB.

Increasing the distance from a noise source ten times reduces the sound pressure level by 20 dB.

Worker Protection

OSHA noise regulations are designed to protect workers against the effects of noise exposure and list permissible noise level exposure as a function of the amount of time to which the worker is exposed, as shown below in **NOISE Table A4**.

NOISE Table A4
OSHA Worker Noise Exposure Standards

Duration of Noise (Hrs/day)	A-Weighted Noise Level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 CFR § 1910.95.

E. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. 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. (Cal. Code Regs., tit. 14 § 15382 and Appendix G, Part I.) The record on this topic is undisputed. (Ex. 200, p. 4.12-1 et seq.; Exs. 17, 119, 134, p. 36 et seq., Ex. 207; 11/03/08 RT 18.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is surrounded by wind farms and energy facilities in a relatively isolated rural area. There are approximately 4,000 wind turbines located in the vicinity. Turbine heights range from about 100 to 300 feet tall, with towers 80 to 225 feet in height, and rotor blades adding another 16 to 105 feet. Tower structures are typically light in color, consisting of steel pylons and heavy lattice structures similar to high voltage electrical transmission towers. The 105-acre Devers Substation, which is 700 feet west of the site, contains numerous, large vertical components. The record indicates that the wind turbines in combination with the transmission lines, towers, and the Devers Substation have altered the landscape to the extent that existing visual quality in the project area is *Moderately Low*. (Ex. 200, p. 4.12-7.)

The 37-acre site is currently vacant and ranges in elevation from about 980 feet to 1,180 feet. The site surface contains gravel, cobbles, and occasional boulders up to one foot in diameter. The 14-acre construction laydown area is located within an existing wind farm and used for equipment laydown. The project owner will cover this area in gravel, which will remain after project construction for continued use by the wind farm. The project's gas and water pipelines will be buried underground with no lasting visual impacts, except for an occasional above ground marker. Following construction, the project owner will ensure that revegetation occurs along the project's linear rights-of-way and at the tensioning and pulling sites. (Ex. 200, p. 4.12-8.)

The most visible project features include the eight 40-foot tall combustion turbine generators, the eight 40-foot tall cooling towers, the eight 90-foot tall exhaust stacks, and the nine 85 to 115-foot high steel poles associated with the 220-kV transmission line. (Ex. 200, p. 4.12-9; Ex. 134, p. 8.) Staff's Visual Resources

Table 2, below, as modified by Applicant's Revised Table 2.4-2, summarizes the dimensions, colors, and materials of major project features.

Staff Visual Resources Table 2 & Applicant's Revised Table 2.4-2

Dimensions and Visual Characteristics of Major Project Features

Major Project Feature	Feature Height (feet)	Width (feet)	Length (feet)	Color	Materials
8 Combustion Turbine Generators (CTGs)	40 (55 for VBV Duct)	90	130	Gray	Steel
8 CTG Stacks	90	30 (13.5 ft diameter)	67	Gray	Steel
Cooling Towers (8-single cells)	40	42	42	Light Earth Tone	Fiberglass
Cooling Tower Building/Warehouse	20 ft eave	50	110	Light Grey or Off- white	Steel
Operations Building	20 ft eave	70	130	Light Earth Tone	Steel
Sound Wall Enclosure	14 ft			Light Earth Tone	Concrete
Transformer Containment with GSU	24	24	32	Light Gray	Concrete Containment & Steel GSU
Unit Control Building	12 ft eave	20	40	Light Earth Tone	Steel
Raw Water Storage Tank	64	110 diameter	-	Light Earth Tone	Steel
Treated Water Storage Tank	36	70 ft diameter	-	Light Earth Tone	Steel
Fire Water Pump Enclosure	12	11	30	Light Earth Tone	Steel
Switchyard, Buses & Towers	85-115 ft poles	100 ft right-of-way	2,300	Aluminum Bus, Galvanized Towers	Aluminum Bus, Galvanized Towers
Transmission Line	-	-	2,300		
Switchyard Building	9 ft eave	30	100	Light Earth Tone	Steel

Source: Ex. 200, p. 4.12-9; Ex. 17, Table 7.11-2; Ex. 134, p. 8, Table 2.4-2 (revised); Ex. 124, p.37.

1. Methodology

CEQA Guidelines [Cal. Code Regs., tit. 14, Appendix G, Part I (Aesthetics] require the lead agency to consider the following questions in evaluating a project's potential visual impacts:

- Would the project have a substantial adverse effect on a scenic vista?
- Would the project substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?
- Would the project substantially degrade the existing visual character or quality of the site and its surroundings?
- Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

Applicant and Staff relied on the following criteria to analyze the project's potential visual impacts in accord with the CEQA Guidelines: (1) compliance with applicable laws; (2) the extent of any alteration to the existing viewshed such as blockage of desirable views; (3) significant decrease in visual quality; and (4) the introduction of a substantial change to nighttime or daytime lighting levels. The type of visual change, duration of impact, viewer sensitivity, and number of viewers are additional factors relevant to the visual resources analysis. (Ex. 200, pp. 4.12-9, 4.12-10, 4.12-14 et seq.; Ex. 17, p. 7.11-6.)

2. Potential Impacts

Scenic Vistas. A scenic vista is defined as a distant view through and along a corridor or opening that exhibits a high degree of pictorial quality. The evidentiary record indicates that since there are no scenic vista points of notable importance in the project vicinity, the project does not present a significant visual impact to a scenic vista. (Ex. 200, p. 4.12-11.)

Scenic Resources. A scenic resource may include a unique water feature (waterfall, transitional water, part of a stream or river, estuary); a unique physical geological terrain feature (rock masses, outcroppings, layers or spires); a tree having a unique visual/historical importance to a community (a tree linked to a famous event or person, an ancient old growth tree); historic building; or a designated federal scenic byway or state scenic highway corridor. (Ex. 200, p. 4.12-11.)

The project site is located 1.8 miles east of SR 62, a state-designated scenic highway since 1972. A scenic highway corridor is defined as the "…land that is visible from, adjacent to, and outside the highway right-of-way, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries."[1] (Ex. 207.)

Although some of the project's components may potentially be visible at a distance of almost two miles from SR 62, the landscape does not feature "scenic and natural features" since the existing view shed is characterized by energy production facilities that did not exist when SR 62 was designated a scenic highway. Moreover, there is no formally defined or mapped scenic corridor for SR 62. Consequently, the project's visual impacts on the SR 62 scenic highway corridor are considered insignificant because the landscape surrounding the project exhibits low visual quality. There are no other notable scenic resources within the project view shed. (Ex. 207.)

Visual Character or Quality. As discussed below, the record contains extensive evidence on whether the project will degrade the visual quality or character of the viewshed during construction and operation.

Construction activities will occur over an 18-month period primarily during daylight hours with some periods of nighttime work during start-up. To the extent possible, nighttime lighting will be pointed downward toward the center of the site where activities are occurring, and task-specific lighting will comply with federal and state worker safety regulations. (Ex. 200, 4.12-13.) Condition of Certification **VIS-2** requires the project owner to reduce perimeter and exterior nighttime lighting associated with construction activities to ensure that potential visual impacts to sensitive receptors are insignificant.

Construction of the power plant, electric transmission line, water and gas underground pipelines, and access road will cause temporary visual impacts at the site, the construction laydown area, and along the linear rights-of-way. Construction activities will be seen primarily by motorists using Diablo Road and from residences or travelers on Dillion Road and SR 62. Grading and the use of large equipment at the site may also be noticeable from more distant viewing locations such as Western Avenue and I-10. However, since construction activities are temporary and visual quality and sensitivity in the viewshed are *Low*

[1] *Scenic Highway Guidelines (*Caltrans 2007, Section 1, Scenic Highway Program History).

to *Moderate*, visual impacts due to construction should be insignificant. (Ex. 200, 4.12-13.)

Applicant and Staff used five "Key Observation Points" (KOPs) to compare the existing visible environmental setting and the anticipated visual change introduced by the project after construction. To assess the potential visual impacts, Applicant provided computerized photo simulations of the current and anticipated future views from the KOPs. (Ex. 17, p. 7.11-9 et seq., Figures 7.11-1 through 7.11-13; Ex. 134, Revised Figures 7.11-9, 7.11-11, 7.11-13; Ex. 200, p. 4.12-14 et seq. Visual Resources Figures 7 through 16.)

The KOPs represent the most characteristic and critical viewing groups and locations where the project can be seen. Staff's Visual Resources Figure 6, replicated at the end of this section, shows the locations of the KOPs used in this analysis:

KOP 1 – view from I-10, looking north
KOP 2 – view from Dillon Road, looking northwest
KOP 3 – view from Diablo Road, looking northeast
KOP 4 – Esparta Avenue near SR 62, looking southeast
KOP 5 – Western Avenue, looking southwest

The five KOPs are depicted in the context of the overall project viewshed where the project may potentially be seen. Potential impacts are identified by two fundamental factors for each KOP: (1) visual sensitivity (the susceptibility of the setting to impact as a result of its existing characteristics, including current level of visual quality, potential visibility of the project, and sensitivity to scenic values of viewers); and (2) the degree of visual change anticipated as a result of the project. (Ex. 200, p. 4.12-14 et seq.; Ex. 17, 7.11-9 et seq.)

KOP 1-View from I-10, looking north

KOP 1 is located on the shoulder of westbound I-10, with a view of the project site to the north, about 1.75 miles away. The posted speed limit is 70 miles per hour (mph) with an estimated 89,400 average daily trips for this segment of I-10. For westbound travelers, visual interest would be primarily towards the west and the Santa Rosa and San Bernardino Mountains. (Ex. 200, p. 4.12-14, **Visual Resources** Figure 8.)

Visual Sensitivity and Quality. The overall visual sensitivity of KOP 1 is *Moderately Low* given the existing industrial character and cluttered appearance of the landscape, the limited view duration, and moderate viewer concern along I-10. (Ex. 200, p. 4.12-14; Ex. 17, p. 7.11-10.)

Visual Change. The project's most visible features, which will be painted in neutral colors, include the eight 90-foot tall CTG stacks, the 85 to 115-foot tall transmission poles, and the eight 40-foot tall generators and adjacent cooling towers. By contrast, the existing wind turbines located between the project site and KOP 1 range in height from 100 to 300 feet. Thus, the overall visual change to the viewshed from KOP 1 is considered *Low*. (Ex. 200, p. 4.12-15; Ex. 17, p. 7.11-10; Ex. 134, p. 5.)

Impact Significance. According to Staff, the project will appear as a relatively small light-colored object as seen in the middleground distance zone of KOP 1. Thus, the introduction of the project into the KOP 1 viewshed will not cause a substantial degradation of visual resources. The *Moderately Low* overall visual sensitivity combined with the *Low* overall visual change does not result in a significant visual impact. (Ex. 200, p. 4.12-16.)

To ensure that potential visual impacts do not result in significant effects, Condition of Certification **VIS-1** requires the project owner to treat the exteriors of major project structures with desert tone finishes to optimize visual integration with the background landscape in conjunction with an approved Surface Treatment Plan. Condition **VIS-2** requires the project owner to comply with local ordinances on nighttime lighting to reduce impacts to nearby residences and drivers along I-5. Condition **VIS-3** requires a drought-tolerant landscape plan for perimeter and storage area screening and replacement planting to reduce project line and form contrast.

KOP 2-View from Dillon Road, looking northwest

KOP 2 is located about 1.2 miles from the project site on the westbound shoulder of Dillon Road with a view of the site to the northwest for westbound travelers and residents to the south. Dillon Road, a two-lane collector with low traffic volumes, is used primarily by local residents and workers with a moderate level of visual concern for the scenic quality. Viewing duration is considered *Low* since the traveling speed is 55 mph with no traffic lights and few stop signs. The cone of vision for travelers is primarily east and west, with most of the visual

interest towards the mountains to the west. (Ex. 200, pp. 4.12-16 and 4.12-17, Visual Resources Figure 9.)

Visual Sensitivity and Quality. According to Staff, the overall visual sensitivity of KOP 2 is *Moderate*. (Ex. 200, p. 4.12-16.)

Panoramic views of the San Bernardino Mountains and foothills dominate the view from KOP 2. The mountain landscape appears natural with no noticeable human alterations, which in combination with the undisturbed appearance of the mountain foothills, gives this distant background view a high degree of visual unity and *High Visual Quality*. (Ex. 200, p. 4.12-17.)

The desert landscape appears intact and there are no visual obstructions or human modifications dominating the view. While the desert landscape has a high degree of unity and intactness, vividness is low, giving a *Moderately High* visual quality to the foreground landscape. (Ex. 200, p. 4.12-17.)

The presence of energy-related development in the middleground landscape, where the project will be located, results in a low level of scenic intactness due to the discordant features of the existing electrical infrastructure. The visual quality of the middleground landscape is therefore *Very Low*. (Ex. 200, p. 4.12-17.)

Visual Change. From KOP 2, the project appears as a massing of solid forms in varying shapes and colors: low rectangular and cylindrical forms with the eight CTG stacks extending to the height of nearby power poles. The evidence shows, however, that the major vertical components of the project would be subordinate to both the adjacent wind turbines and the backdrop hills. Thus, as seen from KOP 2, the project's overall visual change to the viewshed is *Low*. (Ex. 200, p. 4.12-17, Visual Resources Figure 10; Ex. 17, p. 7.11-10.)

Impact Significance. According to the record, the introduction of the project into the KOP 2 viewshed will not cause a substantial degradation of visual resources due to the *Moderate* overall visual sensitivity combined with *Low* overall visual change. (Ex. 200, p. 4.12-18; Ex. 17, p. 7.11-10.) With implementation of Conditions **VIS-1**, **VIS-2**, and **VIS-3**, overall visual impacts at KOP 2 will be reduced to insignificant levels by earth-tone surface colors, long-term landscaping, and controlled lighting.

KOP 3-View from Diablo Road, looking northeast

KOP 3 represents the existing viewshed from Diablo Road, about 0.4 mile from the site, looking northeast through the transmission lines and towers along Power Line Road and the Devers Substation,. Diablo Road runs north-south beginning at Dillon Road and ending at Power Line Road; it is unpaved and used primarily by local residents to access their homes. According to Staff, residential viewer concern would be considered *High* at KOP 3. (Ex. 200, p. 4.12-19, Visual Resources Figure 11.) The Applicant's modified site layout now places one cooling tower adjacent to the each of the eight generating units, which will result in partial screening of the more geometrically complex generating units. (Ex. 134, pp. 34, 37, Revised Figure 7.11-9.)

Visual Sensitivity and Quality. The overall visual sensitivity of KOP 3 is *Moderate* but the existing visual quality of the viewshed is *Low*. Existing foreground views to the northeast are dominated by steel lattice transmission towers, wood power poles, and power lines resulting in a very low visual quality. The immediate middle ground landscape is dominated by steel transmission structures associated with the Devers Substation, giving the middle ground landscape a low visual quality as well. Distant views of the San Bernardino Mountains appear visually intact with high visual quality, but are partially screened due to intervening electrical transmission facilities, which extend above the background landscape and can be seen against the sky, increasing visual contrast and dominance. (Ex. 200, p. 4.12-19; Ex. 134, p. 37.)

Visual Change. As seen from KOP 3, the project's overall visual change to the viewshed is *Moderate*. The most visually prominent project features from KOP 3 are the eight 90-foot high CTG stacks, which add solid vertical elements to the scene. However, the project would generally be seen through the maze of existing transmission lines and the Devers Substation. (Ex. 200, p. 4.12-20, Visual Resources Figure 12; Ex. 134, p. 37, Revised Figure 7.11-9.)

The visual contrast introduced by the project ranges from *Moderate to Moderately High*. Due to the site's proximity to KOP 3, the project components introduce moderate levels of form, line, color and texture contrasts and large building forms in contrast to the narrow vertical forms that currently dominate the viewshed. (Ex. 200, p. 4.12-20; Ex. 134, p. 37.)

Impact Significance. According to Staff, introduction of the project into the KOP 3 viewshed results in an adverse impact to visual resources due to foreground views of the project by residential viewers. The *Moderate* overall visual sensitivity, combined with the *Moderate* overall visual change could potentially result in a significant visual impact. (Ex. 200, p. 4.12-21.)

We believe, however, that implementation of Conditions **VIS-1** and **VIS-3** will mitigate the potential impacts at KOP 3 to insignificant levels. Condition **VIS-1**, which requires the reduction of color contrast of all project structures, will reduce overall project contrast and dominance from this and other KOPs. Condition **VIS-3**, which requires screening of the south side of the facility with perimeter landscape plantings similar to existing plantings at local residences, will mitigate the project's visual contrast for residential viewers and motorists on Diablo Road. (Ex. 200, p. 4.12-21.)

KOP 4-Esparta Avenue near SR 62, looking southeast

This KOP is 100 to 200 feet west of SR 62, a north-south road about 1.7 miles from the site, representing travelers' views of the project near SR 62.[2] Visual contrasts are reduced due to distance and occasional hazy atmospheric conditions. (Ex. 200, p. 4.12-21.)

The primary cone of vision for northbound travelers is to the north, with highly scenic views of the San Bernardino Mountains to the northwest. The primary cone of vision for southbound travelers is to the south with highly scenic views of the Santa Rosa Mountains. Therefore, views of the project from KOP 4 would be peripheral and outside the primary cone of vision. (Ex. 200, p. 4.12-22.)

At its nearest point, SR 62 is within 1.3 miles of the project, which could potentially be seen between the Devers Substation and Devers Hill. The project's CTGs are about the same height as the top elevation of Devers Hill but would appear at or slightly above the top of Devers Hill because they are closer to the viewpoint. However, this view is back-dropped by the distant mountains. (Ex. 200, p. 4.12-22.)

Visual Sensitivity and Quality. The overall visual sensitivity of KOP 4 is *Moderately High.* The overall existing visual quality is *Moderate.*

[2] Staff's testimony includes discussion of SR 62 as a scenic resource corridor; however, as discussed above, the designation of SR 62 as a scenic highway is outdated. (Ex. 207.)

The immediate foreground next to SR 62 consists of desert landscape with limited alterations. Background views are predominantly of the Little San Bernardino Mountains, which appear natural from this distance. Both these landscapes possess unity and intactness. In contrast, middle ground views are dominated by energy-related development, resulting in low levels of landscape intactness, unity and vividness. (Ex. 200, p. 4.12-22.)

Viewer concern from KOP 4 is considered *Moderately High.* According to Staff, nearby residents and travelers on SR 62 have a high level of concern for scenic quality, but the existing visual quality of the viewshed is strongly compromised, mitigating the sensitivity of valley views from the highway. (Ex. 200, p. 4.12-22; Ex. 134, p. 37, Revised Figure 7.11-11.)

Viewer exposure from KOP 4 is considered *High*. Travelers on SR 62 would have continuous peripheral views of the project area at speeds of 65 mph for about three miles, but these views would be outside the primary cone of vision. (Ex. 200, p. 4.12-23.)

Visual Change. As seen from KOP 4, the overall visual change to the viewshed would be *Moderately High*. The most visually prominent features are the eight CTG stacks, the eight generators, and eight cooling towers. The gray cylindrical forms of these structures would add solid vertical elements to the scene. (Ex. 200, p. 4.12-23, Visual Resources Figure 14; Ex. 134, p. 37, Revised Figure 7.11-11.)

Although the project will not dominate the existing scene due to the relatively lower height of the stacks compared to the adjacent transmission towers and wind turbines, it occupies a large proportion of the overall view creating a strong new visual presence. The visual changes due to the project represent an incremental decline in existing visual quality, but are not considered a substantial qualitative alteration of a highly scenic view. Therefore, the project results in a *Moderately Low* level of view disruption. (Ex. 200, p. 4.12-23.)

Impact Significance. According to Staff, the *Moderately High* overall visual sensitivity combined with the *Moderately High* overall visual change indicates that adding the project to the KOP 4 viewshed results in a potentially significant visual impact due to middle ground views by residential viewers and scenic highway travelers. The evidence, however, shows that the project's components will be co-dominant with structures at the Devers Substation and consistent with the existing landscape. (Ex. 200, p. 4.12-24; Ex. 207, p. 26; Ex. 134, pp 37-38.)

We believe that Condition **VIS-1**, which requires the surface treatment of all project structures, will ensure the lowest feasible color contrast in the short term. In addition, Condition **VIS-3**, which requires perimeter landscape planting similar to existing desert plantings to camouflage berm soil colors at the site, will reduce visual contrasts in the long term to insignificant levels. (Ex. 200, p. 4.12-24.)

KOP 5-Western Avenue, looking southwest

KOP 5 is located on Western Avenue near 14th Avenue, 1.15 miles from the project site. This KOP represents the closest residences north of the site, where approximately ten residences are dispersed across a large area of undeveloped land bordered by Pierson Road, Indian Avenue, and Karen Avenue. The area is remote and not readily accessible to the public. (Ex. 200, p. 4.12-25, Visual Resources Figure 15.)

Visual Sensitivity and Quality. The overall visual sensitivity of KOP 5 is *Moderate.* The overall existing visual quality is *Moderately High*. Existing foreground views are *Moderate* and background views to the south are *High*. (Ex. 200, p. 4.12-25.)

Panoramic views of the Santa Rosa Mountains to the southwest dominate the view from KOP 5 on clear days. The rugged mountain terrain creates a high degree of vividness, which in combination with the dominant scale, dramatic ridgeline, and undisturbed appearance of the mountains, gives this background view strong visual dominance resulting in scenic quality that is considered *High*. (Ex. 200, p. 4.12-25.)

The immediate foreground view to the south appears natural where the desert landscape remains intact and there are no visual obstructions or human modifications dominating the view. While the desert landscape has a high degree of unity and intactness, vividness is low due to the lack of diversity, giving a *Moderate* visual quality to the foreground landscape. (Ex. 200, p. 4.12-25.)

Wind turbines and transmission towers dominate the middle ground landscape resulting in a low level of intactness due to the discordant features of the electrical infrastructure, resulting in visual quality that is considered *Very Low*. Overall, the distance from which the project is seen at KOP 5, combined with the dominance and intactness of the foreground and background landscapes,

minimizes the visual effects of the middle ground and gives the overall view a *Moderately High* visual quality. (Ex. 200, p. 4.12-25.)

Visual Change. Viewer concern from KOP 5 is considered to be *Moderately High.* Since residents could experience views of the project when traveling to and from their properties, Staff assumes that they will have a high concern for visual quality. (Ex. 200, p. 4.12-26.)

Viewer exposure from KOP 5 is *Low.* Since the primary viewers from this KOP are residents and visitors of approximately 10 homes in the area, the number of viewers is considered *Low*. Viewing duration is considered *Low* since most residents would only see the project when traveling to and from their properties. Visibility of the project is also considered *Low* due to the distance from the site and the surrounding industrial development. (Ex. 200, p. 4.12-26.)

The overall visual change to the KOP 5 viewshed would be *Low* and the visual contrast introduced by the project would also be *Low*. Views of the background Santa Rosa Mountains in combination with the foreground desert landscape will dominate views from KOP 5 and minimize the visual contrasts of the project as seen in the middle ground. The vertical form of the CTG stacks should blend with the existing vertical lines and forms of the transmission towers, poles, and wind turbines. Differences in colors and textures will not be discernable due to the distance from the site. Overall, the project presents only minimal levels of contrast in form, line, and color and texture from this KOP. (Ex. 200, p. 4.12-26; Ex. 134, p. 38, Revised Figure 7.11-13.)

Project dominance and disruption to scenic views from KOP 5 are considered *Low*. The project is back-dropped against the Santa Rosa Mountains, which dominate the view. The relatively low elevation of the project in the context of the taller transmission towers and wind turbines reduces the visual effects of the CTG stacks due to distance and the jumble of surrounding infrastructure. (Ex. 200, p. 4.12-26.)

Impact Significance. According to Staff, the introduction of the project into the KOP 5 viewshed will result in an adverse, but not significant impact on visual resources. The *Moderate* overall visual sensitivity, combined with the *Low* overall visual change should result in a less than significant visual impact. Implementation of Condition **VIS-1** will reduce the color contrasts of the tall CTG stacks to better harmonize with the wind turbine pylons and blades. (Ex. 200, p. 4.12-27.)

4. Lighting Impacts

The Riverside County Ordinance Regulating Light Pollution prohibits nighttime light leakage that may interfere with operations of the nearby Mount Palomar Observatory in San Diego County. The project site is located in Zone B of the Mount Palomar Nighttime Lighting Policy Area. According to Staff, the project's night lighting could contribute to a cumulative lighting effect at the Palomar Observatory since the site is in an industrialized setting where lighting creates glare and reduces sky visibility compared to unlighted areas of the undeveloped, open desert. (Ex. 200, p. 4.12-28.)

We have adopted Condition **VIS-2** to mitigate these effects by requiring the project owner to reduce brightness consistent with safety, to shield and direct off-site illumination downward, and to use lighting for maintenance purposes only when needed. With implementation of these measures, we believe the potential lighting impacts on the Mount Palomar Observatory should be insignificant.

5. Plumes

Staff's modeling analysis of anticipated visible plume frequency was based on the original project description that included only two cooling towers. The analysis showed that visible water vapor plumes would occur 7.4 percent of the seasonal daylight clear hours, which fell below the 20 percent threshold and was considered less than significant.[3] (Ex. 200, pp. 4.12-28, 4.12-45 et seq. [Appendix VR-3].)

6. Cumulative Impacts.

Wind farm development will continue in the project area and new residential and mixed-use development is also planned near the site. Staff identified the following new projects:

- The Wind Energy Conservation System (WECS) 20 Project adds eight new wind turbines in the existing WECS 20 Wind Park, which is located approximately two miles northwest of the project site. The additional wind turbines are consistent with the existing industrial landscape. (Ex. 200, p. 4.12-29.)

[3] Staff corrected Applicant's initial analysis, which predicted a higher frequency of visible plumes due to inaccurate data input. (Ex. 200, p. 4.12-28.)

- Eagle Point Development, a 160-acre development with schools and 264 homes, is planned one mile north of the site at the intersection of Pierson Boulevard and Karen Avenue. Views of the project will be screened due to distance from the site as well as the topography and vegetation in the area. (Ex. 200, p. 4.12-29, Visual Resources Figure 2.)

- Indian Avenue/I-10 Interchange Project involves reconstruction of the I-10 Freeway/Indian Avenue interchange and is located two miles south of the project. Although the project will increase the footprint of the interchange to accommodate increases in traffic volumes, improvements to the interchange are consistent with the existing viewing conditions. (Ex. 200, p. 4.12-29.)

Since the project will not result in significant project-specific adverse visual impacts and no foreseeable development will remove surrounding structures to make the project more visible, the project will not contribute to any adverse cumulative visual impacts. Even though low-income and minority populations reside in the immediate project area, no significant unmitigated adverse visual impacts will affect any population and, therefore, no significant adverse impacts to minority or low-income populations are expected to occur. **(**Ex. 200, p. 4.12-29.)

7. Compliance with LORS

The evidentiary record establishes that the project is consistent with applicable LORS. Staff's Visual Resources Table 3, replicated below, summarizes the findings.

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VISUAL RESOURCES Table 3
Proposed Project Consistency with LORS Applicable to Visual Resources

Source	Policies	Consistency Determination	Basis for Consistency
County of Riverside General Plan, adopted October 7, 2003.	**Chapter 3 Land Use Element, Project Design**		
	Policy LU 4.1 Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts:		While the project would not visually enhance the character of the surrounding area, it would not substantially degrade the existing character of the surrounding area since existing development has resulted in substantial degradation. Conditions of Certification **VIS-1** and **VIS-3** would mitigate the visual impact of the project.
	a. Compliance with the design standards of the appropriate area plan land use category.	YES AS CONDITIONED	CPV Sentinel would be in compliance with design standards for industrial land uses as discussed below under policies 12.2 and 12.4 for the Western Coachella Valley Area Plan (WCVAP).
	c. Require that an appropriate landscape plan be submitted and implemented for development projects subject to discretionary review.	YES AS CONDITIONED	c. Condition of Certification **VIS-3** calls for the use of drought tolerant landscaping and incorporates adequate drought-conscious irrigation systems, and for the landscape plan to comply with Riverside County policies ordinances.
	d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.	YES AS CONDITIONED	d. Condition of Certification **VIS-3** calls for the use of drought tolerant landscaping and incorporates adequate drought-conscious irrigation systems, and for the landscape plan to comply with Riverside County policies ordinances.
	Chapter 3 Land Use Element, Scenic Corridors:		
	Policy LU 13.1: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public.	YES	The project would not block or disrupt scenic vistas towards the Santa Rosa and San Bernardino Mountains or towards San Jacinto Mountain from publicly traveled roads, highways or freeways.

	Policy LU 13.3: Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment.	YES AS CONDITIONED	Condition of Certification **VIS-1** calls for the development of a surface treatment plan that would minimize the visual intrusion and contrast created by the project. **VIS-1** calls for the surface treatment plan to be consistent with local policies and ordinances. Condition of Certification **VIS-3** calls for the project owner to provide landscaping that will partially screen the project in the long term. **VIS-3** calls for the landscape plan to comply with local policies and ordinances.
	LU 13.4: Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways.	NOT APPLICABLE	The project is not within the 50-foot setback from the edge of the right-of-way of SR 62 and I-10. At the nearest point, the project is 1.3 miles east of SR 62 and 1.7 miles north of I-10.
	Policy LU 13.5: Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground.	NOT CONSISTENT	CPV Sentinel proposes 2,300 feet of transmission line to be carried on nine steel poles (85- to 115-feet tall). Since the transmission line and poles would parallel existing lines, the transmission lines and towers would not be readily discernable from SR 62 or I-10.
	Policy LU 13.6: Prohibit offsite outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways.	NOT APPLICABLE	The project does not propose offsite advertising or signs that would be visible from SR 62 or I-10.
	Policy LU 13.8: Avoid the blocking of public views by solid walls.	YES	The project proposes fencing to enclose the site. No solid perimeter wall is proposed.
	Chapter 3 Land Use Element, Public Facilities:		
	Policy LU 25.3: Require that new public facilities protect sensitive uses, such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards.	YES AS CONDITIONED	Condition of Certification **VIS-2** calls for a lighting mitigation plan that would be in compliance with policies and ordinances of Riverside County. See sections on noise, air quality, transportation and hazardous materials regarding compliance with this policy for noise, fumes, odors, vehicular traffic, parking and operational hazards.

	Policy LU 25.5: Require that public facilities be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area.	YES AS CONDITIONED	Condition of Certification **VIS-1** calls for the development of a surface treatment plan that would minimize the visual intrusion and contrast created by the project. **VIS-1** calls for the surface treatment plan to be consistent with local policies and ordinances. Condition of Certification **VIS-3** calls for the project owner to provide landscaping that will partially screen the project in the long term. **VIS-3** calls for the landscape plan to comply with local policies and ordinances.
	Chapter 4 Circulation Element, Scenic Corridors:		
	Policy C 13.8: Avoid the blocking of public views by solid walls.	YES	The project does not propose the construction of solid walls around the facility.
	County of Riverside General Plan, Chapter 5: Multipurpose Open Space Element, Scenic Corridors:		
	Policy OS 22.1: Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	YES	Project features would not alter skyline viewing conditions from most viewing locations since existing transmission and wind facilities extend above the height of the proposed CPV Sentinel features. Project features would not significantly alter views from scenic corridors such as SR 62 and I-10 since existing transmission and wind turbine facilities already dominate. Outstanding scenic vistas of the Santa Rosa Mountains and San Bernardino Mountains would not be blocked or intruded upon by the project since the project does not intrude into the viewshed of the mountains as discussed in the analysis of KOPs 1 through 5.
	County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Industrial Uses:		
	Policy WCVAP 12.2: Ensure that industrial buildings do not exceed fifty feet in height.	YES	Buildings associated with CPV Sentinel do not exceed 50 feet. The CTG exhaust stacks and

			transmission poles would exceed 50 feet, but are not considered to be buildings.
	Policy WCVAP 12.4: Require the screening and/or landscaping of outdoor storage areas, such as contractor storage yards and similar uses.	YES AS CONDITIONED	Condition of Certification **VIS-3** calls for the screening of contractor storage yards and similar uses. This would ensure that the project is in compliance with this policy.
	County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Light Pollution:		
	Policy WCVAP 15.1: Where outdoor lighting is proposed, require the inclusion of outdoor lighting features that would minimize the effects on the nighttime sky and wildlife habitat areas.	YES AS CONDITIONED	Condition of Certification **VIS-2** calls for a lighting mitigation plan that would be in compliance with policies and ordinances of Riverside County.
	Policy WCVAP 15.2: Adhere to the lighting requirements of the County Ordinance Regulating Light Pollution for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Palomar Observatory.	YES AS CONDITIONED	Condition of Certification **VIS-2** calls for a lighting mitigation plan that is in compliance with policies and ordinances of Riverside County.
	County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Scenic Highways:		
	Policy WCVAP 18.1: Protect the scenic highways in the Western Coachella Valley from change that would diminish the aesthetic value of adjacent properties in accordance with policies in the Scenic Corridors sections of the Land Use, Multipurpose Open Space, and Circulation Elements.	YES AS CONDITIONED	See the compliance discussion above for Chapters 3, 4 and 5 of the Riverside County General Plan regarding scenic highways.

FINDINGS OF FACT

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

1. The project area is surrounded by wind farms and energy facilities in a relatively isolated desert area where wind turbines in combination with

transmission lines, towers, and industrial infrastructure at the Devers Substation have altered the landscape to the extent that existing visual quality in the project area is *Moderately Low*.

2. Project components that could affect visual resources include the eight 40-foot tall combustion turbine generators, the eight 40-foot tall cooling towers, the eight 90-foot tall exhaust stacks, and the nine 85 to 115-foot high steel poles associated with the 220-kV transmission line.

3. The project does not present a significant visual impact to a scenic vista since there are no scenic vista points of notable importance in the project vicinity.

4. The project site is located near SR 62, a state-designated scenic highway since 1972; however, the project's visual impacts on the SR 62 scenic highway corridor are considered insignificant because the relevant viewshed exhibits low visual quality due to the existing industrial landscape.

5. Short-term views of construction equipment and construction-related activities at the project site and along the linear corridors will not result in significant visual impacts due to the temporary nature of the construction period.

6. The underground gas and water pipelines will not be visible after construction.

7. The project's potential visual impacts on the relevant viewsheds were analyzed at five Key Observation Points (KOPs) at different locations surrounding the site.

8. The project, as mitigated by the Conditions of Certification, will not create significant adverse visual impacts to viewsheds from the KOPs.

9. The project, as mitigated by the Conditions of Certification, will not substantially degrade the existing visual character or quality of the site and its surroundings.

10. The project, as mitigated by the Conditions of Certification, will not create a significant new source of nighttime lighting or daytime glare.

11. The evidence indicated that based on the initial project description with two cooling towers, the project would not produce visible water vapor plumes that would affect relevant visual resources.

12. The project, as mitigated by the Conditions of Certification, will not create nor contribute to the creation of significant adverse cumulative visual impacts.

CONCLUSIONS OF LAW

We therefore conclude that, with implementation of the following Conditions of Certification, the CVP Sentinel Project will not result in any significant adverse direct, indirect, or cumulative impacts to visual resources. Moreover, implementation of the mitigation measures described in the evidentiary record and included in the Conditions of Certification, below, will ensure that the CVP Sentinel Project complies with all applicable laws, ordinances, regulations, and standards relating to visual resources.

CONDITIONS OF CERTIFICATION

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-1 The project owner shall treat the surfaces of all project structures and buildings visible to the public so that their colors minimize visual intrusion and contrast by blending with the desert landscape in both color and value; b) their colors and finishes do not create excessive glare; and c) their colors and finishes are consistent with local policies and ordinances.

The project owner shall submit to the Compliance Project Manager (CPM) for review and approval, and simultaneously to Riverside County for review and comment, a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

B. A list of each major project structure, building, tank, pipe, wall, and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number or according to a universal designation system;

C. One set of color brochures or color chips showing each proposed color and finish;

D. A specific schedule for completion of the treatment; and

E. A written procedure to ensure proper treatment maintenance for the life of the project.

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 Riverside County 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 and simultaneously to Riverside County for review and comment.

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 they are ready for inspection and shall submit one set of electronic color photographs from the same key observation points (KOPs) analyzed in this report.

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.

TEMPORARY AND PERMANENT EXTERIOR LIGHTING

VIS-2 To the extent feasible and consistent with safety and security considerations, the project owner shall design and install all temporary and permanent exterior lighting so that: a) lamps and reflectors are not visible from beyond the project site, including any off-site construction laydown areas and security buffer areas; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized; e) lighting on the exhaust stacks shall be the minimum needed to satisfy safety and security concerns; and f) the plan complies with local policies and ordinances of Riverside County.

The project owner shall submit to the CPM for review and approval and simultaneously to Riverside County for review and comment, a lighting mitigation plan that includes the following:

A. Location and direction of permanent light fixtures, taking lighting mitigation requirements into account;

B. Lighting design shall consider setbacks of project features from the site boundary and construction laydown areas to aid in satisfying the lighting mitigation requirements;

C. Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

D. Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security;

E. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

F. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to Riverside County for review and comment, a lighting mitigation plan.
If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been 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.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions, including a proposal to resolve the complaint, and a

schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days.

The project owner shall provide a status report regarding permanent exterior lighting in the Annual Compliance Report. The report shall specify a): the condition of the lighting that has been installed under the lighting plan at the end of the reporting year; b) any deviations in lighting from the plan that occurred during the reporting year; and c) any proposed deviations from the lighting plan for the next year.

PERIMETER LANDSCAPE SCREENING

VIS-3 The project owner shall develop a landscape plan that: a) reduces the visibility of the project from the south and west; b) utilizes drought tolerant landscaping and incorporates adequate drought-conscious irrigation systems; and c) complies with local policies and ordinances of Riverside County, including Policy WCVAP 12.4 which requires screening and/or landscaping of outdoor storage areas, such as contractor storage yards and similar uses. Plantings on the south side of the project are to screen views of the project by residents that live to the south and west of the project.

The project owner shall submit to the CPM for review and approval and simultaneously to Riverside County for review and comment, a landscaping plan providing proper implementation that will satisfy these requirements. The plan shall include:

A. A detailed landscape, grading, and irrigation plan, at a reasonable scale such that all information on the plan is legible. The plan shall demonstrate how the requirements stated above shall be met. The plan 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;

B. A list (prepared by a qualified professional arborist familiar with local growing conditions) of proposed species, specifying installation sizes, growth rates, 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;

C. Maintenance procedures, including any needed irrigation and a plan for routine annual or semi-annual debris removal for the life of the project;

D. A procedure for monitoring for and replacement of unsuccessful plantings for the life of the project; and

E. The plan shall not be implemented until the project owner receives final approval from the CPM.

Verification: The landscaping plan shall be submitted to the CPM for review and approval and simultaneously to Riverside County for review and comment, at least 90 days prior to installation.

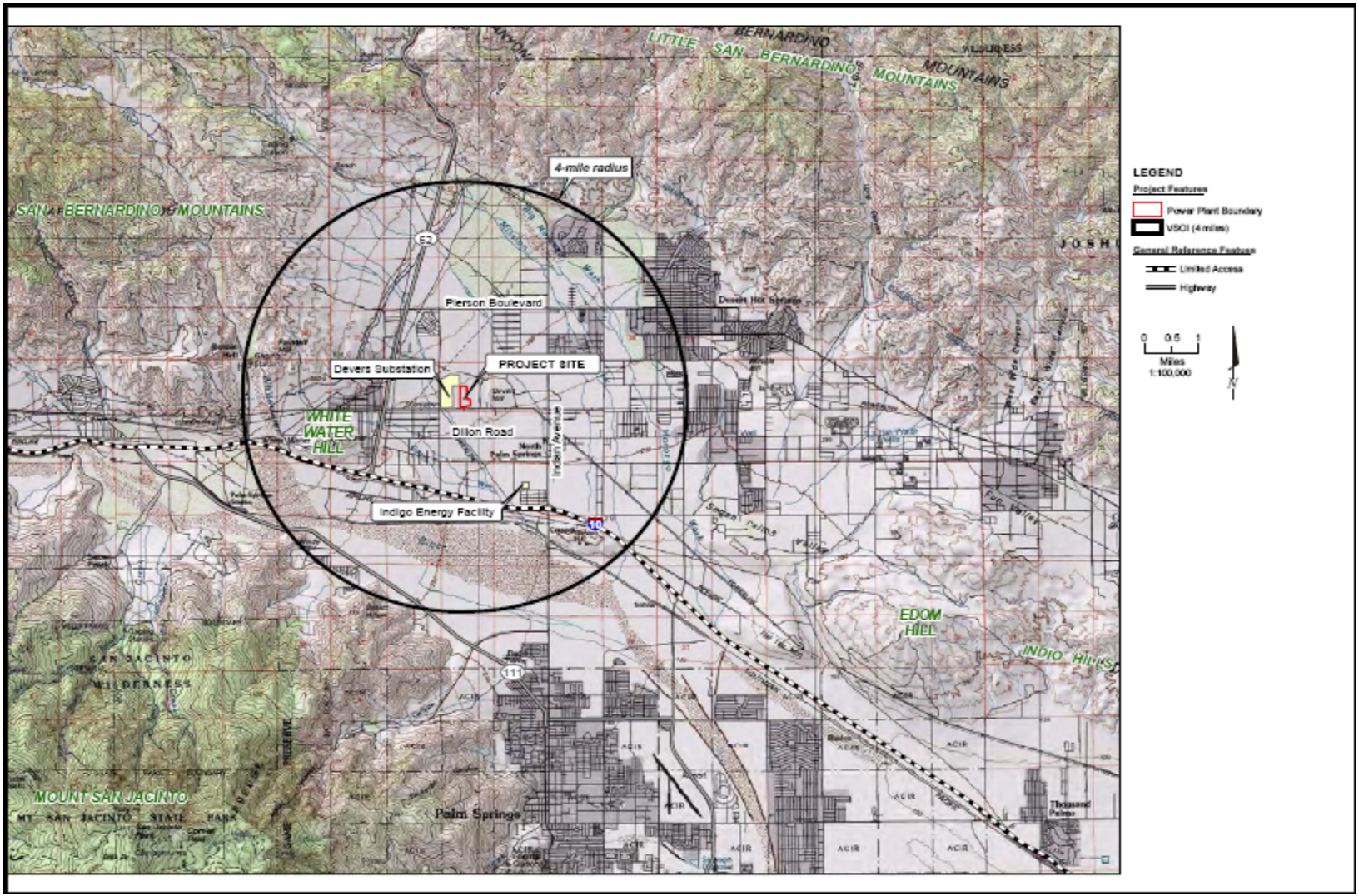
If the CPM determines that the plan requires revision, the project owner shall provide to the CPM and simultaneously to Riverside County a revised plan for review and approval by the CPM.

The planting must occur during the first optimal planting season following site mobilization. The project owner shall simultaneously notify the CPM and Riverside County 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.

VISUAL RESOURCES FIGURE 6

Key Observation Point (KOP) Locations - Source: Ex. 200



Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Exhibit List*

Appendix C: *Proof of Service List*

APPENDICES

AIR QUALITY

Applicable LORS	*Description*
Federal	
40 Code of Federal Regulations (CFR) 52	Nonattainment New Source Review (NSR) requires a permit and requires Best Available Control Technology (BACT) and Offsets. Permitting and enforcement delegated to SCAQMD. Prevention of Significant Deterioration (PSD) requires major sources to obtain permits for attainment pollutants. A major source for a simple-cycle combustion turbine is defined as any one pollutant exceeding 250 tons per year. Since the emissions from the CPV Sentinel project are not expected to exceed 250 tons per year, PSD does not apply.
40 CFR 60 Subpart KKKK	New Source Performance Standard for gas turbines: 15 parts per million (ppm) NOx at 15% O_2 and fuel sulfur limit of 0.060 lb SOx per million Btu heat input. BACT will be more restrictive. Enforcement delegated to SCAQMD.
40 CFR Part 70	Title V: Federal permit assuring compliance with all applicable Clean Air Act requirements. Title V permit application required within one year of start of operation. Permitting and enforcement delegated to SCAQMD.
40 CFR Part 72	Acid Rain Program. Requires permit and obtaining sulfur oxides credits. Permitting and enforcement delegated to SCAQMD.
State	
Health and Safety Code (HSC) Section 40910-40930	Permitting of source needs to be consistent with approved Clean Air Plan.
HSC Section 41700	Restricts emissions that would cause nuisance or injury.
Local – South Coast Air Quality Management District (SCAQMD)	
Regulation II: Permits	This regulation sets forth the regulatory framework of the application for issuance of construction and operation permits for new, altered and existing equipment.

Regulation IV: Prohibitions	This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events.
Regulation VII: Emergencies	Establishes the procedures for reporting emergencies and emergency variances.
Regulation IX: Standards of Performance for New Stationary Sources	Regulation IX incorporates provisions of 40 CFR Part 60, Chapter I, and is applicable to all new, modified, or reconstructed sources of air pollution. Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary combustion turbines (Subpart KKKK). These subparts establish limits of PM10, SO_2, and NO_2 emissions from the facility as well as monitoring and test method requirements.
Regulation XI: Source Specific Standards	Specifies the performance standards for stationary engines larger than 50 brake horse power (bhp).
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. However, this regulation does not apply to NOx or SOx emissions from certain sources, which are addressed by Regulation XX (RECLAIM).
Regulation XVII: Prevention of Significant Deterioration	This regulation sets forth the pre-construction requirement for stationary sources to ensure that the air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth.
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.

Regulation XXX: Title V Permits	The Title V federal program is the air pollution control permit system required by the federal 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. Regulation XXX also integrates the Title V permit with the RECLAIM program such that a project cannot proceed without the other.
Regulation XXXI Acid Rain Permits	Title IV of the federal Clean Air Act provides for the issuance of acid rain permits for qualifying facilities. Regulation XXXI integrates the Title V program with the RECLAIM program. Regulation XXXI requires a subject facility to obtain emission allowances for SOx emissions as well as monitoring SOx, NOx, and carbon dioxide (CO_2) emissions from the facility.

ALTERNATIVES

California Environmental Quality Act Criteria

Title 14, California Code of Regulations, section 15126.6(a), provides direction by requiring an evaluation of the comparative merits of “a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project.” In addition, the analysis must address the “No Project” alternative. [Cal. Code Regs., tit. 14, § 15126.6(e).]

The range of alternatives is governed by the “rule of reason” which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative where the effect cannot be reasonably ascertained and whose implementation is remote and speculative. (Cal. Code Regs., tit. 14, § 15126.6(f)(3).]

BIOLOGICAL RESOURCES

Applicable LORS	*Administering Agency*	*Description*
Federal		
Federal Endangered Species Act (FESA) (Title 16, United States Code, section 1531 *et seq.*, and Title 50, Code of Federal Regulations, part 17.1 *et seq*.)	USFWS and National Marine Fisheries Service (NMFS)	Designates and provides for protection of threatened and endangered plant and animal species, and their critical habitat.
Migratory Bird Treaty (Title 16, United States Code, sections 703 through 711)	USFWS	Makes it unlawful to take or possess any migratory nongame bird (or any part of such migratory nongame bird, e.g. eggs) as designated in the Migratory Bird Treaty Act.
Bald and Golden Eagle Protection Act (Title 16, United States Code section 668)	USFWS	This law provides for the protection of the bald eagle and the golden eagle by prohibiting, except under certain specified conditions, the take, possession, and commerce of such birds. The 1972 amendments increased penalties for violating provisions of the Act or regulations issued pursuant thereto and strengthened other enforcement measures. Rewards are provided for information leading to arrest and conviction for violation of the Act.
Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26))	U.S. Army Corps of Engineers (Corps)	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 (Corps) 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 (RWQCB) for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity which may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and

Applicable LORS	*Administering Agency*	*Description*
		federal water quality standards.
Section 401 of the Clean Water Act of 1977	Regional Water Control Board (RWQCB)	Requires applicant to conduct water quality impact analysis for the project when using 404 permits and for discharge to waterways.
Section 10(a)(1)(A) of the Endangered Species Act (ESA)	USFWS	Requires a permit to "take" threatened or endangered species during lawful project activities. If there is no federal nexus for the project, a Habitat Conservation Plan (HCP) may be required.
State		
California Endangered Species Act (CESA) of 1984 (Fish and Game Code, sections 2050 through 2098)	CDFG	Protects California's rare, threatened, and endangered species.
Natural Communities Conservation Planning (NCCP) Act of 2002 (Fish and Game Code, sections 2800 through 2835)	CDFG	Established the NCCP program, which is a cooperative effort between public and private partners that uses a broad-based ecosystem approach to protecting multiple habitats and species.
California Code of Regulations (Title 14, sections 670.2 and 670.5)	CDFG	Lists the plants and animals of California that are declared rare, threatened, or endangered.
Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515)	CDFG	Designates certain species as fully protected and prohibits the take of such species or their habitat unless for scientific purposes (see also California Code of Regulations Title 14, section 670.7).
Nest or Eggs (Fish and Game Code section 3503)	CDFG	Protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.
Migratory Birds (Fish and Game Code section 3513)	CDFG	Protects California's migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame birds.
Significant Natural Areas (Fish and Game Code section 1930 *et seq.*)	CDFG	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.

Applicable LORS	***Administering Agency***	***Description***
Native Plant Protection Act of 1977 (Fish and Game Code section 1900 *et seq.*)	CDFG	Designates state rare, threatened, and endangered plants.
Streambed Alteration Agreement (Fish and Game Code sections 1600 *et seq.*)	CDFG	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 CDFG 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.
CDFG Policies and Guidelines, Wetlands Resources Policy	CDFG	Provides for the protection, preservation, restoration, enhancement, and expansion of wetland habitats in California, including vernal pools
Public Resources Code, sections 25500 & 25527	CDFG, USFWS	Prohibits siting of facilities in certain areas of critical concern for biological resource, such as ecological preserves, refuges, etc.
Title 20 CCR section 1702 (q) and (v)	CDFG, USFWS	Protects “areas of critical concern” and “species of special concern” identified by local, state, or federal resource agencies within the project area, including the CNPS.
Title 14 CCR section 15000 *et seq.*	CDFG, USFWS	Describes the types and extent of information required to evaluate the effects of a proposed project on the biological resources of a project site.
California Desert Native Plant Act, Food and Agriculture Code sections 80001 through 80006	California Agricultural Commission	Protects California desert native plants from unlawful harvesting on both privately and public owned lands
Local		
Coachella Valley Multi-Species Habitat Conservation Plan (CVMSHCP)	Coachella Valley Association of Governments (CVAG)	Addresses current and potential future State and federal ESA issues within the plan area. Satisfies the legal requirements for the issuance of permits that will allow the take of species covered by the Plan.

Applicable LORS	***Administering Agency***	***Description***
County of Riverside General Plan	Riverside County	The Riverside County General Plan (Riverside County 1993) has a tiered structure: the General Plan itself covers unincorporated areas, and its supplemental plans such as Western Coachella Valley Area Plan and San Gorgonio Wind Policy Area Specific Plan, which include more detailed information. These plans include policies pertaining to conservation of biological resources in their Multipurpose Open Space Elements. The policies focus on sensitive species and habitats, habitat linkages, and common native species such as oak trees.
City of Palm Springs General Plan	City of Palm Springs	Provides guidance on the types of development activity and allowable uses for those areas within the city limits.

CULTURAL RESOURCES

Applicable LORS	*Description*
State	
California Health and Safety Code, section 7050.5	This code makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
Riverside County General Plan (Riverside County 2003)	The proposed CPV Sentinel project power plant, transmission lines, and portions of the natural gas pipeline are situated in unincorporated Riverside County. The Multipurpose Open Space Element of the Riverside County General Plan contains policies to review all proposed development for the possibility of archaeological sensitivity; employ procedures to protect the confidentiality and prevent inappropriate public exposure of sensitive archaeological resources when soliciting the assistance of public and volunteer organizations; and consult with Native American tribes as part of the environmental review process on development projects with identified prehistoric cultural resources. Policies that pertain to historical-period resources include evaluation of significant development proposals by the History Division of the Riverside County Regional Park and Open-Space District for projects that could result in the destruction and/or preservation of potential historical sites.
City of Palm Springs General Plan (Palms Springs 2007)	The proposed CPV Sentinel project power plant site is adjacent to the Palm Springs city limits. Portions of the lay down area and gas line would be located within City boundaries. The Recreation, Open Space & Conservation Element of the city's General Plan has preservation of significant archaeological and historical resources as a goal and contains policies and actions to promote protection and preservation of significant cultural resources, consult with the Agua Caliente Tribal Historic Preservation Office and Palms Springs Historic Society, and require professional site assessment for projects that could contain archaeological or historical resources.
City of Desert Hot Springs Comprehen-sive General Plan (Desert Hot Springs 2000)	The proposed CPV Sentinel project area, although not within the city limits of Desert Hot Springs, is within its General Plan planning area. The Archaeological and Historic Resources Element of the General Plan has the goal to preserve and maintain cultural resources and policies to require survey and evaluation of cultural resources that could be affected by development or land use proposals.

FACILITY DESIGN

Applicable LORS	*Description*
Federal	
	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards
State	
	2007 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
Local	
	Riverside County Code of Building Regulations
General	
	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

GEOLOGY AND PALEONTOLOGY

Applicable LORS	***Description***
Federal	
	The proposed CPV Sentinel project site is not located on federal land. There are no federal LORS for geologic hazards and resources for this site.
State	
California Building Code (2007)	The CBC (2007) includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control). The CBC has adopted provisions in the International Building Code (IBC, 2006).
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), section 2621–2630	Mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. The power plant site is not located within a designated Alquist-Priolo Fault Zone, although the temporary lay down area and several project linears cross Earthquake Fault Zones.
The Seismic Hazards Mapping Act, PRC section 2690–2699	Areas are identified that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches.
PRC, Chapter 1.7, sections 5097.5 and 30244	Regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.
Society for Vertebrate Paleontology (SVP), 1995	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. The measures were adopted in October 1995 by the SVP, a national organization of professional scientists.

Applicable LORS	***Description***
Local	
County of Riverside General Plan, 2003	Will adopt building specifications in the CBC (2007), which is based on the IBC (2006), and UPC (2006) in January, 2008. Requires geotechnical/soils report for grading activities and compliance with the Alquist-Priolo Earthquake Fault Zoning Act. The county has also compiled a Paleontological Resources Sensitivity Map, and addresses monitoring and collection of discovered resources.
County of Riverside Flood Control & Water Conservation	Provides design specifications for site grading and drainage.
City of Palm Springs (COPS) Planning Department	Portions of the temporary lay down area and gas transmission line would cross COPS land, and are subject to the CBC (2007) and California Plumbing Code (CPC, 2007) as of January, 2008.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	***Description***
Federal	
The Superfund Amendments and Reauthorization Act of 1986 (42 United States Code [USC] § 9601 et seq.)	Contains the Emergency Planning and Community Right to Know Act (also known as SARA Title III).
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.
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.
49 Code of Federal Regulations (CFR) 172.800	Requires that suppliers of hazardous materials prepare and implement security plans, per the U.S. Department of Transportation (DOT).
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.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent 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.
Title 49, Code of Federal Regulations, Part 190	Provides U.S. Department of Transportation regulations regarding construction, maintenance, and operation of natural gas pipelines.
Title 49, Code of Federal Regulations, Part 191	Addresses in annual reports, incident reports, and safety-related condition reports, the transportation of natural and other gas by pipeline. Requires operators of pipeline systems to notify the DOT of any reportable incident by telephone and then submit a written report within 30 days.

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.
Federal Register (6 CFR Part 27) interim final rule	Presents the regulation of the U.S. Department of Homeland Security that 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.
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.
Title 8, California Code of Regulations, section 458 and sections 500 to 515	Sets forth requirements for the design, construction, and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1, and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.
California Health and Safety Code, sections 25531 to 25543.4	The California Accidental Release Program (CalARP) requires the preparation of a Risk Management Plan (RMP) and off-site consequence analysis (OCA) and submittal to the local Certified Unified Program Agency for approval.
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.”

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.
California Public Utilities Commission General Order 112-E and 58-A	Contains standards for gas piping construction, inspection, maintenance, and operation.
Local	
Ordinance 651.2	Sets forth Riverside County's hazardous materials disclosure ordinance requiring all facilities that handle hazardous materials to prepare a Hazardous Materials Business Plan. This is then enforced by the Riverside County Department of Environmental Health which is the Certified Unified Program Agency.
	The Certified Unified Program Agency (CUPA) with the responsibility to review Risk Management Plans (RMPs) and Hazardous Materials Business Plans (HMBPs) is the Riverside County Department of Environmental Health. With regard to seismic safety issues, the site is located in Seismic Risk Zone 4. Construction and design of buildings and vessels storing hazardous materials will meet the seismic requirements of California Code of Regulations (CCR) Title 24 and 2007 California Building Code (CPVS 2007a).

LAND USE

Applicable LORS	*Description*
Federal	None
State	
Subdivision Map Act (Public Resources Code Section 66410-66499.58)	This section of the California Public Resources Code provides procedures and requirements regulating land division (subdivisions) and parcel legality. Regulation and control of the design and improvement of subdivisions have been vested in the legislative bodies of local agencies.
Local	
Riverside County Integrated Project - Comprehensive General Plan (Riverside County 2003)	Riverside County (county) is the fourth-largest county in the State, stretching nearly 200 miles across and comprising over 7,200 square miles of fertile river valleys, low deserts, mountains, foothills and rolling plains. Riverside County shares borders with Los Angeles, Imperial, Orange, San Diego, and San Bernardino Counties. The Riverside County Comprehensive General Plan was adopted in 2003 and provides direction for the county's development, land use, economic base, transportation system and preservation of natural and cultural resources. The county General Plan outlines policies, standards, and programs to guide appropriate choices for the future of Riverside County. The Land Use Element of the General Plan contains policies that guide the future of development in the county. These policies designate and discuss the patterns and distribution of development. This element captures and communicates the county's intentions for future use and development within the county (Riverside County 2003).
Western Coachella Valley Area Plan (Riverside County 2003)	There are several area plans that are an extension of the Riverside Comprehensive General Plan and Vision Statement. The area plans detail the specific physical, environmental, and economic characteristics for areas within the Riverside County 2003 Comprehensive General Plan area. Using the Riverside County 2003 Comprehensive General Plan as the primary foundation, the area plans establish policies for development and conservation within the identified area. The land use plan "focuses on preserving the unique features in the Western Coachella Valley area and guides the accommodation of future growth." The land use plan for this specific area has the same land use designations as the county's General Plan. The area plans do not include specific policies for the development of utility corridors.

Applicable LORS	***Description***
Riverside County Zoning Ordinance (Ordinance 348) (Riverside County 2008a)	The Riverside County Zoning Ordinance consists of all of the regulatory and penal ordinances of Riverside County. Ordinance 348 is the county's Land Use Ordinance, which provides the land use planning and zoning regulations and related functions for development in the county. Zoning classifies the immediate, permissible uses of land and is one of the primary means of implementing the General Plan. The Zoning Ordinance specifies what uses are permitted, conditionally permitted, or prohibited within each zone.
City of Palm Springs General Plan (Palm Springs 2007a)	The General Plan provides a vision of the future, contains an evaluation of existing conditions, and provides long-term goals and policies to guide growth and development for the next 20 years. The Palm Springs General Plan is implemented by the city through its zoning, subdivision ordinances, specific plans, growth management policies, planned development districts, development agreements, development review, code enforcement, land use database, capital improvement programs, environmental review procedures, building and housing codes, and redevelopment plans (Palm Springs 2007). The Land Use Element of the General Plan contains policies that guide the future of development in the city. This element illustrates the city's vision of future development and land use.
City of Palm Springs Zoning Ordinance (Palm Springs 2007b)	The city's Municipal Code and Zoning Ordinance are the primary tools used to implement the goals and policies of the General Plan. The Zoning Ordinance provides more detailed direction related to development standards; permitted, conditionally permitted, and prohibited uses; and other regulations such as parking standands and sign regulations. The land uses specified in the Zoning Ordinance are based upon and should be consistent with the land use policies set forth in this element.
City of Desert Hot Springs General Plan (Desert Hot Springs 2000a)	The Desert Hot Springs Comprehensive General Plan and associated Environmental Impact Report (EIR) have been developed to serve as a framework for decision-making regarding the appropriate types and intensities of land use, and conditions by which development is to be permitted in the city. The proposed project is not within the jurisdictional boundaries of the City of Desert Hot Springs, but is located in the city's Sphere-of-Influence (SOI). (SOI is defined as the "…probable physical boundaries and service area…of an agency." (Gov't Code § 56076.) An SOI includes territory not within the corporate limits of the agency but which is expected

	to be annexed at some time in the future. There may be communities or territory closely connected with a proposed incorporation area which are not ready to be included in the new city but need to be acknowledged for future planning. SOI in unincorporated Riverside County. The city's SOI includes county managed lands over which the city has an advisory role. Unincorporated city SOI lands are primarily located south of the incorporated city limits, with important and developable SOI lands also located to the east.
City of Desert Hot Springs Zoning Ordinance (Desert Hot Springs 2000b)	This Zoning Ordinance is the primary tool for implementing the goals, policies and programs of the Desert Hot Springs General Plan, pursuant to the mandated provisions of the State Planning and Zoning Law (Government Code Section 65000 et seq.), State Subdivision Map Act (Government Code Section 64410 et seq.) and California Environmental Quality Act (Public Resources Code 21000 et seq.), and other applicable State and local requirements. All development within the unincorporated area of the city's Sphere of Influence should be consistent and compatible with the Desert Hot Springs General Plan.
Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan	The Coachella Valley Multiple Species Habitat Conservation Plan and Natural Community Conservation Plan (MSHCP/NCP) is a comprehensive, multi-jurisdictional plan focusing on the conservation of federal and State-listed species, other rare and sensitive species, and their habitats. The plan balances environmental protection and economic development objectives in the plan area and simplifies compliance with endangered species related laws. The MSHCP/NCP satisfies the legal requirements for the issuance of permits that will allow the take of species covered by the plan in the course of otherwise lawful activities. The plan, to the maximum extent practicable, provides measures to minimize and mitigate the impacts of the taking and provides for conservation of Covered Species. The MSHCP/NCP is regulated by the Coachella Valley Association of Governments in cooperation and coordination with the U.S. Fish and Wildlife Service (USFWS).

NOISE AND VIBRATION

Applicable LORS	***Description***
Federal	
Occupational Safety and Health Act (OSHA): 29 U.S.C. § 651 et seq.	Protects workers from the effects of occupational noise exposure.
State	
(Cal/OSHA): Cal. Code Regs., tit. 8, §§ 5095–5099	Protects workers from the effects of occupational noise exposure.
Local	
Riverside County General Plan Noise Element	Establishes residential noise exposure levels of 60 dBA L_{dn} or CNEL as normally acceptable and 65 dBA L_{dn} or CNEL as conditionally acceptable.
Riverside County Code, §§ 9.52.020H, 9.52.020I	Limits residential noise exposure to 65 dBA L_{eq} daytime, 45 dBA L_{eq} nighttime. Limits the hours of construction within one-quarter mile of any inhabited dwelling.
Riverside County Code, § 9.52.040	Limits noise at property lines of occupied property to 65 dB L_{max} daytime, 45 dB L_{max} nighttime.

POWER PLANT EFFICIENCY

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

POWER PLANT RELIABILITY

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

PUBLIC HEALTH

Applicable LORS	*Description*
Federal	
Clean Air Act section 112 (42 U.S. Code section 7412)	Requires new sources which emit more than 10 tons per year of any specified hazardous air pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).
State	
California Health and Safety Code sections 39650 et seq.	These sections mandate the California Air Resources Board (CARB) and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies (BACT). They also require that the new source review rule for each air pollution control district include regulations that require new or modified procedures for controlling the emission of toxic air contaminants.
California Health and Safety Code section 41700	This section states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
California Code of Regulations, Title 22, section 60306	Requires that whenever a cooling system uses recycled water in conjunction with an air conditioning facility and a cooling tower that creates a mist that could come into contact with employees or members of the public, a drift eliminator shall be used, and chlorine, or other biocides shall be used to treat the cooling system re-circulating water to minimize the growth of Legionella and other micro-organisms.
Local	
South Coast Air Quality Management (SCAQMD) District Rules 212 and 1401.	Requires safe exposure limits for Toxic Air Pollutants (TACs), use of best available control technology and new source review (NSR).

SOCIOECONOMICS

Applicable LORS	***Description***
State	
California Education Code, section 17620	Authorizes the governing board of any school district to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, sections 65996–65997	Provides for school district levies against development projects. As amended by SB 50 (Green, Chapter 407, section 23, Statutes of 1998), these sections state that public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.
Local	
Riverside County Ordinance No. 659 (Development Impact Fee)	Requires the payment of an impact mitigation fee prior to the final inspection by Building & Safety of any commercial and industrial developments and any residential dwellings.
Riverside County Ordinance 673 (Transportation Uniform Mitigation Fee)	Funds engineering, purchasing of right-of-way, and construction of transportation improvements required by the year 2010 in the Coachella Valley. Transportation Uniform Mitigation Fee (TUMF) fee amounts are based on an equation involving the number of average weekday trips generated by a particular development.

SOIL & WATER RESOURCES

Applicable LORS	***Description***
Federal	
Clean Water Act (33 U.S.C. Section 1251 et seq.)	The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality, which includes regulation of stormwater and wastewater discharges during construction and operation of a facility. California established its regulations to comply with the Clean Water Act under the Porter-Cologne Water Quality Control Act of 1967. The Clean Water Act also establishes protection of navigable waters through Section 401. Section 401 certification through the Army Corps of Engineers and Regional Water Quality Control Board (RWQCB) is required if there are potential impacts to surface waters of the State and/or Waters of the United States, such as perennial and ephemeral drainages, streams, washes, ponds, pools, and wetlands. Section 401 requires impacts to these waters to be quantified and mitigated.
Resource Conservation and Recovery Act	The Resource Conservation Recovery Act (RCRA) of 1976 (40 CFR Part 260 et seq.) seeks to prevent surface and groundwater contamination, sets guidelines for determining hazardous wastes, and identifies proper methods for handling and disposing of those wastes.
State	
California Constitution, Article X, Section 2	This section requires that the water resources of the State be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use or unreasonable method of use of water is prohibited.
California Water Code Section 13551	Requires the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such water is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare.
California Water Code Section 13552.6	Specifically identifies the use of potable domestic water for cooling towers as a waste or unreasonable use of fresh water, if suitable recycled water is available. The availability of recycled water is determined based on criteria listed in Section 13550 by the State Water Resources Control Board (SWRCB).

Applicable LORS	***Description***
Public Resources Code Section 21151.9	Public Resources Code section 21151.9 requires cities and counties to comply with Part 2.10 of Division 6 (beginning with section 10910) of the Water Code (Part 2.10) when preparing an Environmental Impact Report (EIR) for projects that meet or exceed a specified threshold of water use. The Energy Commission's licensing process is exempt from the requirement to prepare an EIR (Pub. Resources Codes § 21080.5; Cal. Code Regs., tit. 14, § 15251(j)), but the Energy Commission staff addresses the issues identified in Part 2.10 for projects that meet or exceed the specified threshold as part of its staff assessment.
SWRCB WQO 99-08	The SWRCB regulates stormwater discharges associated with construction projects affecting areas greater than or equal to 1 acre to protect state waters. Under Order 99-08, the SWRCB has issued a National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction activity for which applicants can qualify if they meet the criteria and upon preparing and implementing an acceptable SWPPP and notifying the SWRCB with a Notice of Intent.
California Code of Regulations, Title 17	Title 17, Division 1, Chapter 5, addresses the requirements for backflow prevention and cross connections of potable and non-potable water lines.
California Code of Regulations, Title 22	Title 22, Division 4, Chapter 15 specifies Primary and Secondary Drinking Water Standards in terms of Maximum Contaminant Levels (MCLs). These MCLs include total dissolved solids (TDS) ranging from a recommended level of 500 milligrams per liter (mg/l), an upper level of 1,000 mg/l and a short term level of 1,500 mg/l. Other water quality MCLs are also specified, in addition to MCLS specified for heavy metals and chemical compounds.
California Code of Regulations, Title 23	Title 23, Division 3, Chapter 15, requires the Regional Board issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
California Water Code Section 13260	Requires filing with the appropriate Regional Board a report of waste discharge that could affect the water quality of the state, unless the requirement is waived pursuant to Water Code section 13269.

Applicable LORS	***Description***
California Water Code Section 13751	The licensed well driller (C-57 license) of any well in the State of California is required to complete and submit a Well Completion Report which describes the well location, well driller's name and address, well owner, and well construction details. A well completion report must submitted within 60 days of well installation to the Department of Water Resources.
Local	
Riverside County Public Use Permit 897	This permit identifies the county planning department's preliminary conditions of approval for the proposed project.
Riverside County General Plan	Address issues such as drainage, erosion control, hazardous material spill control, facility siting in flood zones, and stormwater discharge.
Riverside County Ordinance 458.12	Regulates development within flood hazard zones in Riverside County.
Riverside County Ordinances 457, 592.1, and 650.	Regulates the permitting, construction, and operation of onsite sewer systems.
Riverside County Ordinance 682	Regulates the construction, reconstruction, abandonment, and destruction of wells.
Riverside County Ordinance 754.2	Regulates storm water discharges.
State	
The Porter-Cologne Water Quality Control Act of 1967, Water Code Sec 13000 et seq.	Requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect state waters. Those regulations require that the RWQCBs issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
State Water Resources Control Board (SWRCB) Res. 77-1	State Water Resources Control Board Resolution 77-1 encourages and promotes recycled water use for non-potable purposes.

Applicable LORS	***Description***
SWRCB Resolutions 75-58	The principal policy of the SWRCB that addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1976, by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound.
Recycling Act of 1991 (Water Code 13575 et. seq)	States that retail water suppliers, recycled water producers, and wholesalers should promote the substitution of recycled water for potable and imported water in order to maximize the appropriate cost-effective use of recycled water.
California Water Code (CWC) Section 13146	Requires that state offices, departments and boards in carrying out activities, which affect water quality, shall comply with state policy for water quality control unless otherwise directed or authorized by statute, in which case they shall indicate to the State Water Resources Control Board in writing their authority for not complying with such policy.
CWC Section 13523	Requires that a Regional Board, shall prescribe water reuse requirements for water, which is to be used or proposed to be used as recycled water after consultation with and upon receipt of recommendations from the State Department of Health Services, and if it determines such action to be necessary to protect the public health, safety, or welfare.
CWC Section 13550	Requires the use of recycled water for industrial purposes subject to recycled water being available and upon a number of criteria including: provisions that the quality and quantity of the recycled water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and the use will not impact downstream users or biological resources.
CWC Section 13552.8	States that any public agency may require the use of recycled water in cooling towers if recycled water is available, meets the requirements set forth in Section 13550, that there would be no adverse impacts to any existing water right and that if public exposure to cooling tower mist is possible, appropriate mitigation or control is provided.

Applicable LORS	***Description***
The California Safe Drinking Water and Toxic Enforcement Act	The California Health & Safety Code Section 25249.5 et seq. prohibits actions contaminating drinking water with chemicals known to cause cancer or possessing reproductive toxicity. The RWQCB administers the requirements of the Act.
Integrated Energy Policy Report (Public Resources Code, Div. 15, Section 25300 et seq)	In the 2003 Integrated Energy Policy Report (IEPR), consistent with SWRCB Policy 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating they will approve the use of fresh water for cooling purposes by power plants only where alternative water supply sources and alternative cooling technologies are shown to be “environmentally undesirable” or “economically unsound.”

TRAFFIC AND TRANSPORTATION

Applicable LORS	***Description***
Federal	
Code of Federal Regulations (CFR), Title 14, Chapter 1, Part 77	Includes standards for determining obstructions in navigable airspace. Sets forth requirements for notice to the Federal Aviation Administration of certain proposed construction or alteration. Also, provides for aeronautical studies of obstructions to air navigation to determine their effect on the safe and efficient use of airspace.
CFR, Title 49, Subtitle B	Includes procedures and regulations pertaining to interstate and intrastate transport (includes hazardous materials program procedures), and provides safety measures for motor carriers and motor vehicles who operate on public highways.
State	
California Code of Regulations (CCR), Title 24, Part 9, Chapter 5, Section 503.1	Title 24 is a compilation of building standards contained in national model codes adopted by state agencies, and building standards authorized by the California legislature. Part 9 contains fire safety-related building standards. Section 503.1 includes fire apparatus ingress/egress access for development projects.
California Vehicle Code, Division 2, Chapter. 2.5, Div. 6, Chap. 7, Div. 13, Chap. 5, Div. 14.1, Chap. 1 & 2, Div. 14.8, Div. 15	Includes licensing and regulations pertaining to size, weight and load upon vehicles operated on highways, safe operation of vehicles, and the transportation of hazardous materials.
California Streets and Highway Code, Division 1 & 2, Chapter 3 & Chapter 5.5	Includes regulations for the care and protection of state and county highways, and provisions for the issuance of written permits.
Local	
County of Riverside General Plan , Circulation Element - Policies C 2.1, C 2.4, C 3.6, C 3.13, C 3.15 (August 2003)	The Circulation Element provides direction and guidance relating to the transportation network that serves the county. It identifies the circulation system and describes policies, design elements, operating characteristics and obstacles.

Applicable LORS	***Description***
Riverside County Code – Title 10 Vehicles and Traffic, and Title 12 Streets, Sidewalks and Public Places	Title 10 includes standards for vehicle and traffic operations, parking, and oversized and overweight vehicles, and transportation demand management program measures for development projects. Title 12 provides provisions implementing sections 941(d) and 948 of the state's Streets and Highways Code pertaining to a county maintained road system, and the recording of conveyances to the county of real property interests for road uses and purposes. Includes permit requirements for work in a county public right-of-way, includes encroachment, excavation, utility maintenance and relocation.
Riverside County Zoning Ordinance – Section 18.12 Off-Street Vehicle Parking	This section provides for off-street parking and loading spaces for all land uses in the unincorporated area of the county of Riverside and to assure the provision and maintenance of safe, adequate and well-designed off-street parking facilities. It is the intent of this section that the number of required parking and loading spaces will meet the needs created by the particular use.
Riverside County Ordinance No. 461 - Standard No. 136 - Collector Rural Road	Provides road improvement standards and specifications, includes collector rural road serving ½ acre gross minimum lot size.
Riverside County Ordinance 499.11 - Encroachments In County Highways	States that no person, including firm, corporation, public utility company, public agency or district, or political subdivision, shall make any excavation or backfill in, or construct, install, or maintain any improvement, structure, or encroachment in, on, over, or under, any county highway or the right-of-way thereof without first obtaining from the County Transportation Director a permit.
Riverside County Ordinance No. 673 - Transportation Uniform Mitigation Fee Program within the Coachella Valley	Established a Transportation Uniform Mitigation Fee, where the proceeds are placed in a trust fund established by the Coachella Valley Association of Governments and used to construct the transportation improvements needed by the year 2030 to accommodate traffic generated by the development of land in the County and in the entire Coachella Valley.
City of Palm Springs Municipal Code – Chapter 14.16 Encroachments	Chapter 14.16 includes permit requirements for work in the city public right-of-way, includes encroachment, excavation, utility maintenance and relocation.

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable LORS	***Description***
Aviation Safety	
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards.
FAA Advisory Circular No. 70/7460-1G, " Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard.
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	
Local	
Riverside County General Plan, Noise Element	**References the County's Ordinance Code for noise limits.**
Hazardous and Nuisance Shocks	
State	
CPUC GO-95, "Rules for Overhead Electric Line Construction"	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.

Applicable LORS	*Description*
Title 8, California Code of Regulations (CCR) 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.
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
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.
Electric and Magnetic Fields	
State	
GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93-11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.
Industry Standards	
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line.
Fire Hazards	
State	
14 CCR 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.

TRANSMISSION SYSTEM ENGINEERING

Applicable LORS	***Description***
Federal	
California Public Utilities Commission (CPUC) General Order 95 (GO-95)	"Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this 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.
California Public Utilities Commission (CPUC) General Order 128 (GO-128)	"Rules for Construction of Underground Electric Supply and Communications Systems," 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.
The National Electric Safety Code, 1999	Provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
NERC/WECC Planning Standards	The Western Electricity Coordinating Council (WECC) Planning Standards are merged with the North American Electric Reliability Council (NERC) Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. These standards require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. Certain aspects of the NERC/WECC standards are either more stringent or more specific than the NERC standards alone. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section

	I.A of the standards, “NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table” and on Section I.D, “NERC and WECC Standards for Voltage Support and Reactive Power”. These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines along a common right of way, and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WECC 2006).
North American Reliability Council (NERC) Reliability Standards for the Bulk Electric Systems of North America	Provides national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system. The NERC Reliability Standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Reliability Standards are similar to NERC/WECC Standards, certain aspects of the NERC/WECC Standards are either more stringent or more specific than the NERC Standards for Transmission System Contingency Performance. The NERC Reliability Standards apply not only to interconnected system operation but also to individual service areas (NERC 2006).
State	
	2007 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
California ISO Planning Standards	Provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The California ISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. With regard to power flow and stability simulations, these Planning Standards

	are similar to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The California ISO Standards apply to all participating transmission owners interconnecting to the California ISO controlled grid. They also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the California ISO (California ISO 2002a).
California ISO/FERC Electric Tariff	Provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the “Need” for the proposed project where it will promote economic efficiency or maintain system reliability. The California ISO also determines 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 (California ISO 2007a).
Local	
	Riverside County Code of Building Regulations
General	
	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

VISUAL RESOURCES

Applicable LORS	***Description***
Federal	
	There are no federal lands within the effective view shed of the project, nor are there any recognized National Scenic Byways, or All American Roads.
State	
California Streets and Highways Code, sections 260 through 263 – Scenic Highways: “establish the State's responsibility for the protection and enhancement of California's natural scenic beauty by identifying those portions of the State highway system which, together with adjacent scenic corridors, require special conservation treatment." (Scenic corridors consist of land that is visible from, adjacent to, and outside the highway right-of-way, and is comprised primarily of scenic and natural features. Topography, vegetation, viewing distance, and/or jurisdictional lines determine the corridor boundaries.)	State Route 62 has been an officially designated state scenic highway since 1972. The 9.2 mile route extends from Interstate 10 in Riverside County, north to the San Bernardino County line (Caltrans, 2007). There are no other state-eligible or state-designated scenic highways within the effective view shed of the project.
Local	
County of Riverside General Plan, Chapter 3, Land Use Element, Project Design (2003): ***Policy LU 4.1*** Require that new developments be located and designed to visually enhance, not degrade the character of the surrounding area through consideration of the following concepts: a. Compliance with the design standards of the appropriate area plan land use category. c. Require that an appropriate landscape plan be submitted and implemented for development projects	“The project design policies are intended to address the importance of detail at the parcel and project level in achieving the vision for Riverside County. The individual project is the immediate manifestation of the desires to incorporate quality and innovative design techniques that help enhance the character of the County and contribute to the distinctiveness of the community.” (Riverside County General Plan 2003)

subject to discretionary review. d. Require that new development utilize drought tolerant landscaping and incorporate adequate drought-conscious irrigation systems.	
County of Riverside General Plan, Chapter 3, Land Use Element, Scenic Corridors: ***Policy LU 13.1***: Preserve and protect outstanding scenic vistas and visual features for the enjoyment of the traveling public. ***Policy LU 13.3:*** Ensure that the design and appearance of new landscaping, structures, equipment, signs, or grading within Designated and Eligible State and County scenic highway corridors are compatible with the surrounding scenic setting or environment. ***LU 13.4*:** Maintain at least a 50-foot setback from the edge of the right-of-way for new development adjacent to Designated and Eligible State and County Scenic Highways. ***Policy LU 13.5:*** Require new or relocated electric or communication distribution lines, which would be visible from Designated and Eligible State and County Scenic Highways, to be placed underground. ***Policy LU 13.6:*** Prohibit offsite outdoor advertising displays that are visible from Designated and Eligible State and County Scenic Highways. ***Policy LU 13.8:*** Avoid the blocking of public views by solid walls.	**"**The intent of these policies is to conserve significant scenic resources along designated scenic highways for future generations and to manage development along scenic highways and corridors so as not to detract from the area's scenic quality." (Riverside County General Plan 2003).
County of Riverside General Plan, Chapter 3, Land Use Element, Public Facilities: ***Policy LU 25.3***: Require that new public facilities protect sensitive uses,	"The Public Facilities area plan land use designation provides for the development of various public, quasi-public, and private uses with similar characteristics, such as governmental facilities, utility facilities including public and private electric generating stations and corridors, landfills, airports,

such as schools and residences, from the impacts of noise, light, fumes, odors, vehicular traffic, parking, and operational hazards. ***Policy LU 25.5***: Require that public facilities be designed to consider their surroundings and visually enhance, not degrade, the character of the surrounding area. ***County of Riverside General Plan, Chapter 4, Circulation Element, Scenic Corridors:*** ***Policy C 13.8***: Avoid the blocking of public views by solid walls.	"Many corridors in Riverside County traverse its scenic resources. Enhancing aesthetic experiences for residents and visitors to the County has a significant role in promoting tourism, which is important to the County's overall economic future. Due to the visual significance of some of these areas, several roadways have been officially recognized as either State or County designated or eligible scenic highways. Enhancement and preservation of the County's scenic resources will require careful application of scenic highway standards along Official Scenic Routes. "(Riverside County General Plan 2003)
County of Riverside General Plan, Chapter 5: Multipurpose Open Space Element, Scenic Resources: ***Policy OS 21.1:*** Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	"Scenic resources are an important quality of life component for residents of the County. In general, scenic resources include areas that are visible to the general public and considered visually attractive. …scenic resources include natural landmarks and prominent or unusual features of the landscape. Scenic backdrops include hillsides and ridges that rise above urban or rural areas or highways. Scenic vistas are points, accessible to the general public, that provide a view of the countryside." (Riverside County General Plan 2003).
County of Riverside General Plan, Chapter 5: Multipurpose Open Space Element, Scenic Corridors: ***Policy OS 22.1:*** Identify and conserve the skylines, view corridors, and outstanding scenic vistas within Riverside County.	"Many roadway corridors in Riverside County traverse its scenic resources. Enhancing aesthetic experiences for residents and visitors to the County promotes tourism, which is important to the County's overall economic future. Enhancement and preservation of the County's scenic resources will require careful application of scenic highway standards along Official Scenic

	Routes." (Riverside County General Plan 2003).
County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Industrial Uses: ***Policy WCVAP 12.2:*** Ensure that industrial buildings do not exceed fifty feet in height. ***Policy WCVAP 12.4:*** Require the screening and/or landscaping of outdoor storage areas, such as contractor storage yards and similar uses.	"The Land Use Plan for Western Coachella Valley designates over 4,500 acres of land for industrial development. Several of these areas are located along the Interstate 10 corridor, with some nearby areas designated for residential uses. Preserving the visual qualities of the Valley and ensuring compatibility with adjacent uses are the focus of these policies." (Riverside County General Plan 2003)
County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Light Pollution: ***Policy WCVAP 15.1:*** Where outdoor lighting is proposed, require the inclusion of outdoor lighting features that would minimize the effects on the nighttime sky and wildlife habitat areas. ***Policy WCVAP 15.2:*** Adhere to the lighting requirements of the County Ordinance Regulating Light Pollution for standards that are intended to limit light leakage and spillage that may interfere with the operations of the Palomar Observatory.	"The continued growth of urban activities throughout the Valley has many consequences. One of the attractions for residents is the brilliance of the nighttime sky on clear nights, unencumbered by lighting scattered over a large urban area. Wildlife habitat areas can also be negatively impacted by artificial lighting. As development continues to encroach from established urban cores into both rural and open space areas, the effect of nighttime lighting on star-gazing and open space areas will become more pronounced." (Riverside County General Plan 2003) "…... the Mount Palomar Observatory, located in San Diego County, requires darkness so that the night sky can be viewed clearly. The presence of the observatory necessitates unique nighttime lighting standards in several areas of Riverside County." (Riverside County General Plan 2003) The project is in Zone B (within 45 miles) of the Mount Palomar Nighttime Lighting Policy Area.

County of Riverside, General Plan, Western Coachella Valley Area Plan (WCVAP), Scenic Highways: ***Policy WCVAP 18.1:*** Protect the scenic highways in the Western Coachella Valley from change that would diminish the aesthetic value of adjacent properties in accordance with policies in the Scenic Corridors sections of the Land Use, Multipurpose Open Space, and Circulation Elements.	See discussion of scenic highways above.

WASTE MANAGEMENT

Applicable LORS	*Description*
Federal	
Title 42, United States Code (U.S.C.), §§6901, et seq. Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al).	The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) 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 (USEPA) or other authorized 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 USEPA and its ten regional offices. The Pacific Southwest regional office (Region 9) implements USEPA programs in California, Nevada, Arizona, and Hawaii.
Title 42, U.S.C., §§ 9601, et seq. Comprehensive Environmental Response, Compensation and Liability Act	The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things, the statute addresses: • Reporting requirements for releases of hazardous substances; • Requirements for remedial action at closed or abandoned hazardous waste sites, and brownfields; • Liability of persons responsible for releases of hazardous substances or waste; and • Requirements for property owners/potential buyers to conduct “all appropriate inquiries” into previous ownership and uses of the property to 1) determine if hazardous substances have been or may have been released at the site, and 2) establish that the

	owner/buyer did not cause or contribute to the release. A Phase I Environmental Site Assessment is commonly used to satisfy CERCLA "all appropriate inquiries" requirements.
Title 49, CFR, Parts 172 and 173. Hazardous Materials Regulations	These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.
Title 29, CFR, Part 1910.120 Occupational Safety and Health Standards for Hazardous Waste Operations and Emergency Response	This section sets forth the Occupational Safety and Health Standards (OSHA) hazardous waste operations and emergency response safety and communication requirements for facilities and employees working with toxic or hazardous materials. Among the requirements are a safety and health program, site characterization and analysis, site control, training, and medical surveillance and monitoring.
State	
California Health and Safety Code (HSC), Chapter 6.5, §25100, et seq. Hazardous Waste Control Act of 1972, as amended.	This California law 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 Program Agencies (CUPAs) implement some elements of the law at the local level.
California Water Code Section 13260	Requires filing with the appropriate Regional Water Quality Control Board (RWQCB) a report of waste discharge that could affect the water quality of the state, unless the requirement is waived pursuant to Water Code section 13269.
Public Resources Code, Division 30, §40000, et seq. California Integrated Waste Management Act of 1989.	The California Integrated Waste Management Act of 1989 (as amended) establishes mandates and standards for management of solid waste. Among other things, the law includes provisions addressing solid waste source reduction and recycling, standards for design and construction of municipal landfills, and programs for county waste management plans and local implementation of solid waste requirements.
Title 14, CCR, Division 7, §17200, et seq. California Integrated Waste Management Board	These regulations further implement 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
Title 22, California Code of Regulations (CCR), Division 4.5. Environmental Health Standards for the Management of Hazardous Waste	These regulations establish 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. Additionally, while not a federal requirement, California requires that hazardous waste 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 Generator of Hazardous Waste (Chapter 12, §66262.10, et seq.) • 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.
HSC, 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 six environmental and emergency response programs listed below. • Aboveground Storage Tank Program • Business Plan Program • California Accidental Release Prevention (CalARP) Program • Hazardous Material Management Plan / Hazardous Material Inventory Statement Program • Hazardous Waste Generator / Tiered Permitting Program • 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 CUPAs. The Riverside County Environmental Health Department is the CUPA for the CPV Sentinel project. 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 and/or Worker Health and Safety analysis sections.
HSC, 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).	This law was enacted to expand the State's hazardous waste source reduction activities. Among other things, 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 4 year cycle, with a summary progress report due to DTSC every fourth year.
Title 22, CCR, §67100.1 et seq. Hazardous Waste Source Reduction and Management Review.	These regulations further 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.
Title 14, CCR Division 2, Chapter 4 Development, Regulation, and Conservation of Oil and Gas Resources	These regulations, promulgated under the authority of the Public Resources Code, Division 3 Oil and Gas, Chapter 1, apply statewide to drilling, production, and injection operations, and include specific procedures for proper abandonment of an oil or gas well.
Local	
Riverside County Ordinance 615	Permit requirements for generators of hazardous waste.
California Building Code and California Fire Code	Enforced by the local CUPA and Fire Department. Includes a requirement that businesses obtain permits for the use and storage of specified hazardous materials. This permit must be obtained before storing regulated hazardous wastes at the project site.
Policy	
The Porter-Cologne Water Quality Control Act of 1967, Water Code Sec 13000 et seq.	Requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. Those regulations require that the RWQCBs issue Waste Discharge Requirements specifying conditions for protection of water quality as applicable.
Colorado River Region, Water Quality Control Plan	The CPV Sentinel project is in the Mission Creek Groundwater Sub-basin of the Coachella Valley Groundwater Basin, under the jurisdiction of the Colorado River RWQCB. In compliance with the

	Porter-Cologne Water Quality Control Act, the Colorado River RWQCB is responsible for developing and implementing the Basin Plan for the Colorado River Region. This Basin Plan sets numerical and narrative water quality standards for controlling discharge of wastes within the Colorado River Region, including the standards that govern the CPV Sentinel project activity.
Riverside County, Countywide Integrated Waste Management Plan	This document sets forth the county's goals, policies, and programs for reducing dependence on landfilling solid wastes and increasing source reduction, recycling, and reuse of products and waste, in compliance with the California Integrated Waste Management Act. The plan also addresses the siting and development of recycling and disposal facilities and programs within the county.

WORKER SAFETY AND FIRE PROTECTION

Applicable LORS	*Description*
Federal	
Title 29 U.S. Code section 651 et seq. (Occupational Safety and Health Act of 1970)	This act 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).
Title 29 Code of Federal Regulations (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections 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.
29 CFR sections 1952.170 to 1952.175	These sections provide federal approval of California's plan for enforcement of its own safety and health requirements, in lieu of most of the federal requirements found in 29 CFR sections1910.1 to 1910.1500.
State	
Title 8 California Code of Regulations (CCR) all applicable sections (Cal/OSHA regulations)	These sections require that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operation of power plants, as well as safety around electrical components; fire safety; and hazardous materials use, storage, and handling.
24 CCR section 3, et seq.	This section incorporates the current addition of the Uniform Building Code.
Health and Safety Code section 25500, et seq.	This section includes Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	These sections require a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.
Title 24, California Code of Regulations (CCR) sections 3 et seq.	The 2007 edition of the California Building Code is enforced by the City of Palm Desert and is comprised of 11 parts containing building design and construction requirements as they relate to fire, life, and structural safety. It incorporates the current edition of the 2006 International Building Code.
2007 Edition of California Fire Code (24 CCR Part 9)	The California Fire Code is based upon the standards of the 2006 International Fire Code. The fire code contains general provisions for fire safety, including: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The 2007 edition is enforced by the Palm Springs Fire Department.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE
CPV SENTINEL ENERGY PROJECT

Docket No. 07-AFC-3

EXHIBIT LIST

APPLICANT'S EXHIBITS

EXHIBIT 1 Application for Certification, Section 1.0, Introduction and Project Description, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 10:18-19.)

EXHIBIT 2 Application for Certification, Section 2.0, Facility Description and Location, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 10:18-19.)

EXHIBIT 3 Application for Certification, Section 3.0, Facility Closure, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 15:16-21.)

EXHIBIT 4 Application for Certification, Section 4.0, Transmission Facilities, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:22-23.)

EXHIBIT 5 Application for Certification, Section 5.0, Natural Gas Supply, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 6 Application for Certification, Section 6.0, Water Supply dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 7 Application for Certification, Section 7.1, Air Quality, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010**.**

EXHIBIT 8 Application for Certification, Section 7.2, Biological Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 26:15-16.)

EXHIBIT 9 Application for Certification, Section 7.3, Cultural Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 10 Application for Certification, Section 7.4, Land Use, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 19:10-11.)

EXHIBIT 11 Application for Certification, Section 7.5, Noise, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 12 Application for Certification, Section 7.6, Public Health, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:7-9.)

EXHIBIT 13 Application for Certification, Section 7.7, Worker Safety and Health, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 18:23-24.)

EXHIBIT 14 Application for Certification, Section 7.8, Socioeconomics, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:20-21.)

EXHIBIT 15 Application for Certification, Section 7.9, Soils, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT22:20-24.)

EXHIBIT 16 Application for Certification, Section 7.10, Traffic and Transportation, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 17 Application for Certification, Section 7.11, Visual Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 18:10-11.)

EXHIBIT 18 Application for Certification, Section 7.12, Hazardous Material Handling, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:20-21.)

EXHIBIT 19 Application for Certification, Section 7.13, Waste Management, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:9-10.)

EXHIBIT 20 Application for Certification, Section 7.14, Water Resources, Soil and Water Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 21 Application for Certification, Section 7.15, Geologic Hazards and Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/03/08 RT 14:11-13.)

EXHIBIT 22 Application for Certification, Section 7.16, Paleontological Resources, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/03/08 RT 14:11-13.)

EXHIBIT 23 Application for Certification, Section 8.00, Alternatives, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 24 Application for Certification, Data Adequacy Worksheets, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 25 Application for Certification, Appendix A – Parcels Within Specified Distances of Project Site and Linear Features, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 10:18-19.)

EXHIBIT 26 Application for Certification, AFC Appendix B – Civil Engineering Design Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 27 Application for Certification, Appendix C – Structural Engineering Design Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 28 Application for Certification, Appendix D – Mechanical Engineering Design Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 29 Application for Certification, Appendix E – Control Systems Engineering Design Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 30 Application for Certification, Appendix F – Electrical Engineering Design Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 31 Application for Certification, Appendix G – Draft Storm water Pollution Prevention Plan, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 32 Application for Certification, Appendix H – System Impact Study, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:22-23.)

EXHIBIT 33 Application for Certification, C Appendix I-1 – Seasonal Wind Roses, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 34 Application for Certification, Appendix I-2 – Construction Emissions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 35 Application for Certification, Appendix I-3 – Operating Emissions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 36 Application for Certification, Appendix I-4 – Greenhouse Emissions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 37 Application for Certification, Appendix I-5 – Modeling Protocol, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 38 Application for Certification, Appendix I-6 – VISCREEN and PLUVUE 2 Modeling Inputs, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 39 Application for Certification, Appendix I-7 – BACT Analysis, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 40 Application for Certification, Appendix J – Biological Resources Survey and Résumés, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 26:15-16.)

EXHIBIT 41 Application for Certification, Appendix K – Archaeological Inventory Report for the Sentinel Energy Project (Confidential), dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 42 Application for Certification, Appendix L – Discretionary Reviews Performed within the Past 18 Months (Riverside County, City of Palm Springs; City of Desert Hot Springs), dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 43 Application for Certification, Appendix M – 1 Field Equipment List and Calibration Certifications, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 44 Application for Certification, Appendix M – 2 Field Measurement Data Sheets, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 45 Application for Certification, Appendix M – 3 Photographic Log, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 46 Application for Certification, Appendix M – 4 Equipment Sound Power Levels, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 47 Application for Certification, Appendix N – Public Health Data, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:7-9.)

EXHIBIT 48 Application for Certification, Appendix O-1 – Traffic Counts, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 49 Application for Certification, Appendix O-2 – Peak Hour Intersection Capacity Worksheet – Existing Conditions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 50 Application for Certification, Appendix O-3 – Peak Hour Intersection Capacity Worksheet – Year 2009 No Project Conditions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 51 Application for Certification, Appendix O-4 – Peak Hour Intersection Capacity Worksheet – Year 2009 Project Construction Conditions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 52 Application for Certification, Appendix O-5 – Peak Hour Intersection Capacity Worksheet – Year 2010 No Project Conditions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 53 Application for Certification, Appendix O-6 – Peak Hour Intersection Capacity Worksheet – Year 2010 Project Operations Conditions, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 54 Application for Certification, Appendix P – Off Site Consequence Analysis Modeling Outputs, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:20-21.)

EXHIBIT 55 Application for Certification, Appendix Q – Phase I and Phase II Investigations, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 56 Application for Certification, Appendix R-1 – Groundwater Modeling, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 57 Application for Certification, Appendix R-2 – Hydrology Report, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 58 Application for Certification, Appendix S – Geologic and Foundation Criteria, dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/03/08 RT 14:11-13.)

EXHIBIT 59 Application for Certification, Appendix T – Paleontological Resources Impact Assessment [Confidential], dated June 25, 2007, (CEC Log No. 41166). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 14:11-13.)

EXHIBIT 60 CPV Sentinel Application for Certification - Air Quality and Public Health Modeling Files, dated June 25, 2007, (CEC Log No. 41167). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:7-9.)

EXHIBIT 61 Email from Carol Roberts, Fish and Wildlife Office, to Bill Pfanner re endangered species issues, dated July 30, 2007, (CEC Log No. 41716). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 26:15-16.)

EXHIBIT 62 Permit to Construct /Permit to Operate Application for the CPV Sentinel Energy Project, dated July 31, 2007, (CEC Log No. 41768). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 63 CD Copy of Air Dispersion Model Input and Output in Response to Data Request 3, dated November 5, 2007 (CEC Log No. 43226). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 64 Responses to Data Requests dated October 4, 2007, dated November 5, 2007, (CEC Log No. 43227). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 65 Public Use Permit Application, dated November 26, 2007, (CEC Log No. 43491). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 19:10-11.)

EXHIBIT 66 CPV Sentinel Energy Project Response to Data Request 41, dated December 3, 2007, (CEC Log No. 43584). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 67 CPV Sentinel Energy Project Response to Data Request 36 - Draft DESCP with POS, dated January 4, 2008, (CEC Log No. 43987). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 68 Response to Data Requests 35, 38, 43, 50, 60; 62 through 65, dated January 22, 2008, (CEC Log No. 44688). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 69 Letter from Dale Shileikis to the CEC regarding Appendix C and associated replacement pages to Applicant's responses to CEC Data Requests 35, 38, 43, 50, 60; 62 through 65, dated January 24, 2008, (CEC Log No. 44850). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 70 AFC Supplement: Revised Water Supply Plan, dated February 19, 2008, (CEC Log No. 45406). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 71 Application for Confidential Designation - Cultural Records Search Data, dated February 19, 2008, (CEC Log No. 45450). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 72 CPVS Groundwater Flow Model & MSWD Psomas Model, dated March 10, 2008, (CEC Log No. 45611). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 73 Intentionally Omitted

EXHIBIT 74 Applicant's Responses to Data Requests 66-97, dated April 11, 2008 (CEC Log No. 45889). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:9-10.)

EXHIBIT 75 Intentionally Omitted

EXHIBIT 76 Application for Confidential Designation re Cultural Records Map, dated March 31, 2008 (CEC Log No. 45900). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 77 Letter from Mark Turner to Bill Pfanner re Revised Water Supply Plan, dated May 5, 2008(CEC Log No. 46210). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 78 Applicant's Responses to Groundwater Workshop Data Requests, dated June 30, 2008(CEC Log No. 46848). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 79 Applicant's Responses to Groundwater Workshop - Additional July 3, 2008 Data Requests, dated July 9, 2008 (CEC Log No. 46963). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 80 Letter from M. Turner Regarding the June 24, 2008 Letter from MSWD, dated July 9, 2008 (CEC Log No. 46971). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 81 Letter re Preliminary Analysis of Alternative Water Supply Plans, dated August 15, 2008 (CEC Log No. 47585). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 82 Comments for Preliminary Staff Assessment, dated August 22, 2008 (CEC Log No. 47682). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 83 Proposed Water Supply Plan for CPV Sentinel Energy Project, dated August 22, 2008 (CEC Log No. 47709). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 84 2007 Geological / Seismic Hazards Evaluation for Proposed CPV Sentinel Energy Project, August 22, 2008 (CEC Log No. 47710). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 14:11-13.)

EXHIBIT 85 Applicants Comments on the Preliminary Staff Assessment (additional table), dated August 27, 2008 (CEC Log No. 47799). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 86 Analysis of CEC Staff Alternative Waters Supply Plans, dated August 27, 2008 (CEC Log No. 47826). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 87 FDOC for CPV Sentinel Proposed 850 Megawatt Power Plant Project, dated August 29, 2008 (CEC Log No. 47861). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 88 Comments on the Preliminary Staff Assessment 2, dated September 17, 2008 (CEC Log No. 48058). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 89 Letter to John Kessler re Supplemental Noise Monitoring Data, dated September 25, 2008 (CEC Log No. 48191). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 90 Letter from Desert Water Agency to John Kessler re extraction fee and water supply, dated September 26, 2008, (CEC Log No. 48411). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 91 Applicant's Statement RE GW Recharge Lead Time, dated September 23, 2008 (CEC Log No. 48152). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 92 CPV Sentinel Construction Emissions, dated October 3, 2008 (CEC Log No. 48424). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 93 Letter from Robert Krieger to John Kessler, re Mission Creek Ground Water Subbasin, dated October 7, 2008 (CEC Log No. 48442). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 94 Letter to MWDSC from Desert Water Agency re Delivery and Exchange Agreement, dated September 23, 2008 (CEC Log No. 48516). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 95 Memo from URS regarding Recharge, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 96 Response to Data Response 24. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:22-23.)

EXHIBIT 97 Intentionally Omitted

EXHIBIT 98 Intentionally Omitted

EXHIBIT 99 Intentionally Omitted

EXHIBIT 100 Intentionally Omitted

EXHIBIT 101 Declaration of J. Seidler regarding Facility Design, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:22-24.)

EXHIBIT 102 Declaration of J. Lague regarding Air Quality, dated October 16, 2008. Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 103 Declaration of D. Kisner regarding Biological Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 26:15-16.)

EXHIBIT 104 Declaration of B. Hatoff regarding Archaeological Cultural Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 105 Declaration of R. Herbert regarding Historic Architectural Cultural Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:7-8.)

EXHIBIT 106 Declaration of S. Hussain regarding Hazardous Materials, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 11:20-21.)

EXHIBIT 107 Declaration of T. Dorje regarding Land Use and Soil, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 19:10-11.)

EXHIBIT 108 Declaration of R. Reeves regarding Noise, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 17:7-8.)

EXHIBIT 109 Declaration of J. Mitchell regarding Public Health, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:7-9.)

EXHIBIT 110 Declaration of M. Feeney regarding Socioeconomic Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 16:20-21.)

EXHIBIT 111 Declaration of G. Molinario regarding Environmental Site Investigations, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 112 Declaration of G. Muehleck regarding Groundwater, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 113 Intentionally Omitted. (11/3/08 RT 22:12-15)

EXHIBIT 114 Declaration of A. Connell regarding Soil and Water Resources dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 115 Declaration of K. Helm regarding Soil and Water Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 116 Withdrawn by Applicant on October 21, 2008.(11/3/08 RT 22:12-15.)

EXHIBIT 117 Declaration of N. Casil regarding Traffic and Transportation, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:7-9.)

EXHIBIT 118 Declaration of J. Kritikson regarding Transmission Facilities, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:22-23.)

EXHIBIT 119 Declaration of R. Stuhan regarding Visual Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 18:10-11.)

EXHIBIT 120 Declaration of E. Skov regarding Waste Management, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 13:9-10.)

EXHIBIT 121 Declaration of L. Griggs regarding Worker Safety, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 18:23-24.)

EXHIBIT 122 Declaration of B. O'Braitis regarding Geologic Hazards, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 14:11-13.)

EXHIBIT 123 Declaration of R. Rice regarding Geologic Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 14:11-13.)

EXHIBIT 124 Declaration of L. Fisk regarding Paleontology, 6, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 14:11-13.)

EXHIBIT 125 Declaration of M. Turner regarding Introduction, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 10:18-19.)

EXHIBIT 126 Declaration of K. Rushmore regarding Alternatives, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 127 Declaration of D. Shileikis, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 128 Declaration of B. Hren regarding Soil and Water Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 129 Declaration of R. Krieger regarding Water Resources, dated October 16, 2008. Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 130 Applicant's Proposed Revisions to Conditions of Certification for Transmission System Engineering and Transmission Line Safety and Nuisance, dated October 23, 2008 (CEC Log No. 48673). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 12:22-23.)

EXHIBIT 131 Applicant's response to CEC Data Adequacy Review, dated July 2007 (CEC Log No. 42100). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 27:16-18.)

EXHIBIT 132 Supplemental Declaration of Mark Turner filed on October 29, 2008 (CEC Log No. 48828). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 10:18-19.)

EXHIBIT 133 Cover Memo for Applicant's Additional Testimony of October 29, 2008 (CEC Log No. 48828). Sponsored by Applicant; received into evidence on November 3, 2008. (11/3/08 RT 25:23-25.)

EXHIBIT 134 Applicant's Project Design Refinements dated November 19, 2008 (CEC Log No. 49063). Sponsored by Applicant; received into evidence on December 5, 2008. (California Energy Commission, AFC CPV Sentinel Committee "Order Granting Motion to Supplement the Evidentiary Record", December 5, 2008.)

EXHIBIT 135 Applicant's Responses to Southern California Edison's (SCE) Comments of October 14, 2008, dated November 21, 2008, (CEC Log No. 49095). Sponsored by Applicant; received into evidence on December 3, 2008. (California Energy Commission, AFC CPV Sentinel Committee "Order Granting Motion to Supplement the Evidentiary Record", December 5, 2008.)

EXHIBIT 136 Applicant's Additional Testimony and Declaration of Mark Turner dated October 29, 2008, (CEC Log no. 49280). Sponsored by Applicant; received into evidence on December 5, 2008. (California Energy Commission, AFC CPV Sentinel Committee "Order Granting Motion to Supplement the Evidentiary Record", December 5, 2008.)

EXHIBIT 137 Intentionally Omitted.

EXHIBIT 138 Applicant's Air Permit Application Amendment to SCAQMD, dated 10/30/09. (Docket Log #54001). Sponsored by Applicant; received into evidence on July 19, 2010**.**

EXHIBIT 139 Air Dispersion Modeling Data related to the Amended Application for the Permit To Construct/Permit to Operate. Dated 12/11/09. (Docket Log #54430). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 140 SCAQMD's Preliminary Determination of Compliance, dated 5/7/08. (Docket Log #46187. Sponsored by Applicant; received into evidence on July 19, 2010**.**

EXHIBIT 141 SCAQMD Addendum to Determination of Compliance and POC, dated 3/2/10. (Docket Log #55739). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 142 CPUC Decision: Opinion Granting Application Of Southern California Edison Company For Approval Of Contract, dated 4/20/10. (Docket Log #56330). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 143 Declaration of John Lague regarding Air Quality, dated 12/19/09. (Docket Log # 56361). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 144 Declaration of Mark Turner regarding Air Quality, dated 12/19/09. (Docket Log #56361. Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 145 Intentionally Omitted.

EXHIBIT 146 Final Coachella Valley PM10 Redesignation Request and Maintenance Plan, dated 4/29/10. (Docket Log # 56479). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 147 Applicant’s Comments on the Final Staff Assessment Air Quality Addendum, dated 5/3/10. (Docket Log # 56521). Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 148 Supplemental Declaration of John Lague regarding Air Quality, dated 5/6/10. Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 149 Revisions to the SCAQMD Addendum to Determination of Compliance and POC, dated 5/12/10. Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 150 Minor Corrections filed on 7/15/10 in a letter from the SCAQMD Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 151 June 10, 2010 SCAWMD's Responses to the California Public Records Act Requirement. CD. Sponsored by Applicant; received into evidence on July 19, 2010.

EXHIBIT 152 June 30, 2010 Applicants Rebuttal to declaration of Michael Harris. Sponsored by Applicant; received into evidence on July 19, 2010.

ENERGY COMMISSION STAFF'S EXHIBITS

EXHIBIT 200 Final Staff Assessment, dated October 10, 2008; docketed on October 10, 2008. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 201 Staff's Supplemental Testimony - Executive Summary – John Kessler- Staff's correction regarding the transmission line route. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 22:20-24.)

EXHIBIT 202 Staff's Supplemental Testimony - Project Description – John Kessler- Staff's correction regarding the project's sources of potable water. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 203 Staff's Supplemental Testimony - Biological Resources – Heather Blair- Staff is providing testimony accepting the change to Biological Resources Condition of Certification BIO-11 identified in the Applicant's Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 204 Staff's Supplemental Testimony - Hazardous Materials – Rick Tyler-Staff is providing additional testimony accepting the corrections identified in the applicant's Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 205 Staff's Supplemental Testimony - Land Use– Negar Vahidi- Staff's additional testimony responding to the concern expressed by the Committee at the Prehearing Conference regarding the conditions that would be required were the City of Palm Springs to issue a Conditional Use Permit for a portion of the construction laydown area; addressing the height variance issue from Riverside County. In addition, staff's testimony concurs with the comment in the applicant's Prehearing Conference Statement that the reference in the Final Staff Assessment for Condition of Certification BIO-13 should be deleted. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 206 Staff's Supplemental Testimony- Soil and Water Resources – John Fio, Christopher Dennis, John Kessler. Staff's additional testimony in response to Exhibit 95, submitted by the Applicant on October 16, 2008. In addition, Staff will identify changes in response to the Conditions of Certification contained in the Final Staff Assessment to reflect discussions held between the Applicant and staff at the conclusion of the Prehearing Conference on October 21, 2008.Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 207 Staff's Supplemental Testimony- Visual Resources – Martha Goodavish. Staff is providing additional testimony in response to the Committee's question about the status of State Route 62 as a scenic corridor; if so, staff's conclusions as to whether the project would have a significant adverse impact to this scenic corridor. Sponsored by Staff; received into evidence on November 3, 2008. 11/3/08 RT 31:4-5.)

EXHIBIT 208 Staff's Supplemental Testimony- Waste Management – Christopher Dennis. Staff's additional testimony accepting some of the changes to Conditions of Certification WASTE-6 and -8 as proposed by applicant in its Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 209 Staff's Supplemental Testimony - Transmission System Engineering – Mark Hesters and Ajoy Guha - Staff is providing a response and additional testimony addressing the points raised by the applicant in its Comments on the PSA, dated August 21, 2008 and in its Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 210 Staff's Supplemental Testimony - Transmission Line Safety and Nuisance – Obed Odoemelan. Staff is providing additional testimony consisting of a general description of qualifications necessary for the individual who would be used to measure electric and magnetic fields of transmission lines as would be required under Condition of Certification TLSN-3. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 211 Staff's Supplemental Testimony - Traffic & Transportation – Mark Hamblin -Staff is providing additional testimony pertaining to Condition of Certification **TRANS-5** in response to the applicant's comments in their Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 212 Staff's Supplemental Testimony - Worker Safety & Fire Protection – Rick Tyler. Staff is providing a response and additional testimony addressing the points raised by the applicant in its Prehearing Conference Statement. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 213 Staff's Supplemental Testimony - Soil & Water – John Kessler – Staff's additional testimony pertaining to the estimate of infiltration travel time contributing to overall recharge time needed to protect mesquite hummocks. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 214 Final Staff Assessment, dated April 15, 2010. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 31:4-5.)

EXHIBIT 215 Errata to the Final Staff Assessement, dated 5/6/10. Sponsored by Staff; received into evidence on November 3, 2008.

EXHIBIT 216 Errata to the Final Staff Assessment Air Quality Addendum, dated May 19, 2010. Sponsored by Staff; received into evidence on November 3, 2008.

EXHIBIT 217 **"**Rebuttal Testimony Regarding Air Quality, Emission Reduction Offsets," by Steve Radias, dated 6/30/10, in Air Quality. Sponsored by Staff; received into evidence on November 3, 2008. (7/19/10 RT 31:4-5.)

EXHIBIT 218 Declaration of Mohsen Nazemi re: Offset credits, dated 6/30/10. Sponsored by Staff; received into evidence on July 19, 2010. (7/19/10 RT 31:4-5.)

EXHIBIT 219 Legal Argument of the SCAQMD, dated 6/30/10. Sponsored by Staff; received into evidence on November 3, 2008. (11/3/08 RT 49:3-5.)

INTERVENOR CALIFORNIA COMMUNITIES AGAINST TOXIC'S

EXHIBIT 300 Expert Testimony of Michael Harris**.** Sponsored by CCAT; received into evidence on July 19, 2010.

INTERVENOR COMMUNITIES FOR A BETTER ENVIRONMENT

Exhibits 400 Attachments of J. May to expert testimony: 1) Analysis by Perrin Quarrles Assoc. re: EPA Acid Rain data; 2) EPA AP42 Chapter 2.1 Refuse Combustion; 3) Documents produced by AQMD in response to CCAT PRA (individually identifying the facility at issue), dated: *various.* Sponsored by Communities for a Better Environment; received into evidence on June 30, 2010.

EXHIBIT 401 Expert declaration of Julia May re: Emission reduction credits documentation offered by South Coast Air Quality Management District, dated June 15, 2010. Sponsored by Communities for a Better Environment; received into evidence on June 30, 2010.

EXHIBIT 402 Attachments of J. May, (Julia May) to expert testimony: 1) AP42 Abrasive Blasting 2) SCAQMD Guidance re: PM from Aggregate 3) Application of Certification 5.1 Oakley Power Plant 4) O'Brien Cogeneration Offset Calculations, dated June 30, 2010. Sponsored by Communities for a Better Environment; received into evidence on June 30, 2010.

EXHIBIT 403 Supplemental expert declaration of Julia May re: Emission reduction credits documentation offered by South Coast Air Quality Management District, dated June 30, 2010. Sponsored by Communities for a Better Environment; received into evidence on June 30, 2010.

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
1516 NINTH STREET, SACRAMENTO, CA 95814
1-800-822-6228 – WWW.ENERGY.CA.GOV

APPLICATION FOR CERTIFICATION FOR THE
CPV SENTINEL ENERGY PROJECT
BY THE CPV SENTINEL, L.L.C

DOCKET NO. 07-AFC-3

PROOF OF SERVICE

APPLICANT

CPV Sentinel, LLC
Mark O. Turner, Director
Competitive Power Ventures, Inc.
55 2nd Street, Suite 525
San Francisco, CA 94105
mturner@cpv.com

APPLICANT'S CONSULTANT

Dale Shileikis - URS Corporation
221 Main Street, Suite 600
San Francisco, CA 94105-1916
dale_shileikis@urscorp.com

COUNSEL FOR APPLICANT

Michael J. Carroll
LATHAM & WATKINS LLP
650 Town Center Drive, 20th Floor
Costa Mesa, CA 92626-1925
michael.carroll@lw.com

INTERESTED AGENCIES

California ISO
e-recipient@caiso.com

Mohsen Nazemi, PE
South Coast AQMD
21865 Copley Drive
Diamond Bar, CA 91765-4178
mnazemi@aqmd.gov

INTERVENORS

Angela Johnson Meszaros
CA Communities Against Toxics
1107 Fair Oaks Avenue, #246
South Pasadena, CA 91030
Angela@CleanAirMatters.net

Communities for a Better Environment
c/o Shana Lazerow
1904 Franklin Street, Suite 600
Oakland, California 94612
slazerow@cbecal.org

ENERGY COMMISSION

JAMES D. BOYD
Vice Chair and Presiding Member
jboyd@energy.state.ca.us

Kenneth Celli, Hearing Officer
kcelli@energy.state.ca.us

John Kessler, Project Manager
jkessler@energy.state.ca.us

Tim Olson
Advisor to Commissioner Boyd
tolson@energy.state.ca.us

Caryn Holmes, Staff Counsel
cholmes@energy.state.ca.us

Dick Ratliff, Staff Counsel
dratliff@energy.state.ca.us

Jennifer Jennings
Public Adviser
E-mail preferred
publicadviser@energy.state.ca.us

DECLARATION OF SERVICE

I, _____, declare that on_____, 2010, I served and a filed copies of the attached _____dated_____. The original documents, filed with the Docket Unit, are accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/sentinel/index.html]

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

_____ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

FOR FILING WITH THE ENERGY COMMISSION:

_____ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (*preferred method*);

OR

_____ depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 07-AFC-3
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

_____
Signature
Hearing Adviser's Office