CALIFORNIA
ENERGY
COMMISSION

PANOCHE ENERGY CENTER

Application For Certification (06-AFC-5)
Fresno County

FINAL COMMISSION DECISION

DECEMBER 2007
(06-AFC-5)
CEC-800-2007-004-CMF

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CALIFORNIA ENERGY COMMISSION

1516 9th Street
Sacramento, CA 95814
www.energy.ca.gov/sitingcases/panoche/index.html

JEFFREY D. BYRON
Presiding Committee Member

JAMES D. BOYD
Associate Committee Member

PAUL KRAMER
Hearing Officer

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Commissioner

JOHN L. GEESMAN
Commissioner

JEFFREY D. BYRON
Commissioner

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA

APPLICATION FOR CERTIFICATION FOR THE PANOCHE ENERGY CENTER PROJECT	**DOCKET NO. 06-AFC-5** **ORDER NO. 07-1219-3**

COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the Panoche Energy Center Project. It incorporates the Presiding Member's Proposed Decision (PMPD) in the above-captioned matter and the Committee Errata issued December 17, 2007. The Commission Decision is based upon the evidentiary record of these proceedings (Docket No. 06-AFC-5) and considers the comments received at the December 19, 2007, business meeting. The text of the attached Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and Conditions imposed.

This **ORDER** adopts by reference the text, Conditions of Certification, Compliance Verifications, and Appendices contained in the Commission Decision. It also adopts specific requirements contained in the Commission Decision which ensure that the proposed facility will be designed, sited, and operated in a manner to protect environmental quality, to assure public health and safety, and to operate in a safe and reliable manner.

FINDINGS

The Commission hereby adopts the following findings in addition to those contained in the accompanying text:

1. The **PANOCHE ENERGY CENTER**, sponsored by Panoche Energy Center, LLC, will provide a degree of economic benefits and electricity reliability to the local area.

2. The Conditions of Certification contained in the accompanying text, if implemented by the project owner, ensure that the project will be designed, sited, and operated in conformity with applicable local, regional, state, and federal laws, ordinances, regulations, and standards, including applicable public health and safety standards, and air and water quality standards.

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and

assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative environmental impacts.

4. Existing governmental land use restrictions are sufficient to adequately control population density in the area surrounding the facility and may be reasonably expected to ensure public health and safety.

5. The project is subject to Fish and Game Code section 711.4 and the project owner must therefore pay an eight hundred fifty dollar ($850) fee to the California Department of Fish and Game.

6. Construction and operation of the project, as mitigated, will not create any significant adverse environmental impacts. No feasible alternatives to the project, as described during these proceedings, exist which would reduce or eliminate any significant environmental impacts of the mitigated project.

7. No environmentally superior alternative site has been identified.

8. An environmental justice screening analysis was conducted and the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.

9. The Decision contains a discussion of the public benefits of the project as required by Public Resources Code section 25523(h).

10. The Decision contains measures to ensure that the planned, temporary, or unexpected closure of the project will occur in conformance with applicable laws, ordinances, regulations, and standards.

11. The proceedings leading to this Decision have been conducted in conformity with the applicable provisions of Commission regulations governing the consideration of an Application for Certification and thereby meet the requirements of Public Resources Code sections 21000 et seq. and 25500 et seq.

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ORDER

Therefore, the Commission **ORDERS** the following:

1. The Application for Certification of the **PANOCHE ENERGY CENTER** as described in this Decision is hereby approved and a certificate to construct and operate the project is hereby granted.

2. The approval of the Application for Certification is subject to the timely performance of the Conditions of Certification and Compliance Verifications enumerated in the accompanying text and Appendices. The Conditions and Compliance Verifications are integrated with this Decision and are not severable therefrom. While the project owner may delegate the performance of a Condition or Verification, the duty to ensure adequate performance of a Condition or Verification may not be delegated.

3. This Decision is adopted, issued, effective, and final on December 19, 2007.

4. Reconsideration of this Decision is governed by Public Resources Code, section 25530.

5. Judicial review of this Decision is governed by Public Resources Code, section 25531.

6. The Commission hereby adopts the Conditions of Certification, Compliance Verifications, and associated dispute resolution procedures as part of this Decision in order to implement the compliance monitoring program required by Public Resources Code section 25532. All conditions in this Decision take effect immediately upon adoption and apply to all construction and site preparation activities including, but not limited to, ground disturbance, site preparation, and permanent structure construction.

7. The project owner shall provide the Executive Director a check in the amount of eight hundred fifty dollars ($850), payable to the California Department of Fish and Game.

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8. The Executive Director of the Commission shall transmit a copy of this Decision and appropriate accompanying documents, including the Department of Fish and Game fee, as provided by Public Resources Code section 25537, California Code of Regulations, title 20, section 1768, and Fish and Game Code section 711.4.

Dated: December 19, 2007, at Sacramento, California.

Original Signed By:

JACKALYNE PFANNENSTIEL
Chairman

Original Signed By:

JAMES D. BOYD
Vice Chair

Original Signed By:

JOHN L. GEESMAN
Commissioner

Original Signed By:

ARTHUR H. ROSENFELD
Commissioner

Original Signed By:

JEFFREY D. BYRON
Commissioner

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INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision contains the Commission's rationale in determining that the proposed Panoche Energy Center (PEC) complies with all applicable laws, ordinances, regulations, and standards, and may therefore be licensed. It is based exclusively upon the 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 PEC is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On August 2, 2006, Panoche Energy Center, LLC ("Applicant"), filed an Application for Certification (AFC) with the California Energy Commission to construct and operate the Panoche Energy Center. The proposed project is a nominal 400-megawatt (MW) peaking power plant facility consisting of four natural-gas-fired turbines and associated equipment. The facility will be located in the unincorporated area of Fresno County near the Panoche Hills. The Energy Commission has exclusive jurisdiction to license this project and considered the proposal under a twelve-month review process established by Public Resources Code section 25540.6.

The PEC is proposed on a site approximately 12 miles southwest of the City of Mendota, 2 miles east of Interstate 5 and next to the existing Pacific Gas & Electric Panoche Substation. The site is currently a producing pomegranate

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[1] The Reporter's Transcript of the October 10, 2007, evidentiary hearing is cited as "RT, p. __." The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix A** of this Decision.

orchard and is subject to a Williamson Act Contract. The project will permanently occupy 12.8 acres of a 128-acre parcel and temporarily occupy an additional 8 acres as a construction laydown area.

The project consists of four General Electric LMS100 simple cycle natural-gas-fired turbines and associated equipment such as emission control systems necessary to meet the Applicant's proposed emission limits. Oxides of nitrogen (NOx) emissions will be controlled by ultra low NOx combustors in the turbines and selective catalytic reduction systems using aqueous ammonia. An oxidation catalyst will limit exhaust stack carbon monoxide (CO) emissions.

Each LMS100 turbine uses an integral intercooler to increase efficiency, which requires a source of cooling water and cooling towers. Two new groundwater wells will draw water from a confined aquifer for the cooling towers and other uses. Potable water will be supplied by a bottled water service. Process wastewater will be disposed of via a deep well injection system. Sanitary wastes will be directed to a septic system and leach field.

The project will connect to the existing PG&E Panoche Substation via a 300-foot 230-kilovolt transmission line. Natural gas to fuel the turbines will come from a 2,400-foot lateral pipeline connecting to a PG&E high-pressure gas trunk line located east of the electrical substation.

Construction of the PEC, from site preparation and grading to commercial operation, is expected to take approximately 17 months. Commercial operation is anticipated to begin in late 2009. During the peak construction period, the project will provide a maximum of 364 construction jobs with an average of 178 workers present per month. About 12 workers will be needed to maintain and operate the project. The Applicant estimates capital costs associated with the project to be approximately $250 million to $300 million.

Agencies, including the Fresno County's Planning Department and Public Works Staffs, the cities of Mendota and Firebaugh, California Independent System Operator (CAISO), San Joaquin Valley Air Pollution Control District, California Air Resources Board, Central Valley Regional Water Quality Control Board, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the California Department of Fish and Game, U.S. Army Corp of Engineers, Native American tribes and other interested parties, all cooperated with the California Energy Commission staff in completing the review process.

B. SITE CERTIFICATION PROCESS

The PEC and its related facilities are subject to Commission licensing jurisdiction. (Pub. Resources Code, § 25500 et seq.) During licensing proceedings, the Commission acts as lead state agency under the California Environmental Quality Act. (Pub. Resources 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. Resources Code, § 21080.5.) The process is designed to complete the review within a specified time period; 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 the proposed power plant project. During this process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications. Section 25523(h) of the Public Resources Code also requires a discussion of the project's benefits. We address this issue in the **Socioeconomics** section of this Decision.

Public participation is a valued part of the licensing process. The Commission's public outreach program is primarily facilitated by the Public Adviser's Office (PAO). This is an ongoing process that encourages public participation so that members of the public may become involved either informally or, on a more formal level, as Intervenors with an opportunity to present evidence and cross-examine witnesses. The only formal Intervenor was CURE, represented by Gloria D. Smith and Marc D. Joseph, Adams Broadwell Joseph & Cardozo.[2]

The process begins when an Applicant submits an Application for Certification (AFC). Commission staff reviews the data submitted as part of the AFC and recommends to the Commission whether the AFC contains adequate information to begin the review. Once the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such technical information as is necessary. During this time, the Commission staff sponsors numerous 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 a project in a document called the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the PSA and its complete analyses are then 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

[2] CURE did not file a Prehearing Conference Statement or participate in the October 10, 2007 evidentiary hearing.

a Hearing Order and schedules formal Evidentiary Hearings. At these hearings, all entities that have formally intervened as parties may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public who have not intervened may present public comments. Evidence adduced during these hearings provides the basis for the Presiding Member's Proposed Decision (PMPD). In the PMPD, the Committee evaluates the evidence presented, determines a project's conformity with applicable laws, ordinances, regulations, and standards, and provides recommendations to the full Commission.

The PMPD 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, this 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 and with equal legal status. An "ex parte" rule prohibits parties 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 inform members of the public concerning the certification proceedings and to assist those interested in participating.

C. PROCEDURAL HISTORY

The Public Resources Code (§ 25500 et seq.) and Commission regulations (Cal. Code of Regs., tit. 20, § 1701, et seq.) mandate a public process and specify the

occurrence of certain necessary events. The key procedural events that occurred in the present case are summarized below.

The Energy Commission determined that the PEC AFC was data adequate on November 8, 2006. Commissioner Jeffrey D. Byron was appointed Presiding Member and Vice-Chairman James D. Boyd Associate Member of the committee assigned to the matter.

On November 21, 2006, the Committee issued a notice of "Informational Hearing and Site Visit." The notice was mailed to 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 PEC. The notice was also published in The Fresno Bee, a local general circulation newspaper.

The Committee conducted this event in the City of Mendota, on Tuesday, December 12, 2006. The Committee, the parties, and other participants discussed the proposal for developing the PEC, described the Commission's review process, and explained opportunities for public participation. The participants also viewed the site where the PEC would be situated.

As part of the review process, Staff conducted public workshops on January 31, 2007, and April 13, 2007, to discuss issues of concern with the Applicant, governmental agencies, and interested members of the public. Staff issued its Preliminary Staff Assessment on July 2, 2007, and its Final Staff Assessment on September 19, 2007.

The Committee then held a Prehearing Conference on October 2, 2007, the purpose of which was to thoroughly discuss the process and procedures to be utilized during the Evidentiary Hearings. The Committee conducted its Evidentiary Hearing in Sacramento on October 10, 2007. At this publicly noticed hearing, all parties were afforded the opportunity to present evidence, cross

examine witnesses, and rebut the testimony of other parties, thereby creating an evidentiary basis for this Commission Decision. The hearing also allowed all parties to argue their positions on disputed matters and provided a forum for the Committee to receive comments from the public and other governmental agencies. There were no matters in dispute among the parties at the evidentiary hearing[3] and no comments were received from members of the public.

After reviewing the evidentiary record and exhibits, the Committee published the PMPD on November 14, 2007, and conducted a Committee Conference on December 12, 2007 to receive and discuss comments submitted by the parties and public. During the Conference, the evidentiary record was reopened to accept several relevant documents that were necessary to complete the record. The 30-day comment period on the PMPD ended on December 14, 2007. The Commission considered the PMPD at a Business Meeting held on December 19, 2007.

[3] During the course of responding to a Committee question about the safety of the natural gas pipeline, a difference of assumptions surfaced between the parties about who—the Applicant or PG&E—would construct, own, and operate the natural gas pipeline. The evidentiary record was held open past the hearing to receive an additional condition and testimony from the Staff, as well as the Applicant's response. During the course of that exchange the parties resolved their differences. See the **Hazardous Materials** section for more details regarding this issue.

I. PROJECT DESCRIPTION AND PURPOSE

The PEC would be constructed next to the Pacific Gas and Electric Company (PG&E) Panoche Electric Substation on West Panoche Road in Fresno County. It would consist of four General Electric LMS100 natural gas-fired combustion turbine generators (CTGs) generating approximately 400 MW in simple cycle configuration. Panoche Energy Center, LLC will own and operate the project.[4]

The PEC is designed as a peaking facility to meet electrical generation loads during periods of high demand, which generally occur during the daytime hours, and more frequently during the summer than other times of the year. The project is expected to have an annual capacity factor of no higher than 57%, depending on weather and customer demand, load growth, hydroelectric supplies, generation retirements and replacements, the level of generating unit and transmission outages, and other factors.

The project's objectives are derived from a Power Purchase Agreement (PPA) with PG&E. The agreement's provisions include:

- Power supply contract term of 20 years.
- Construction of the PEC on a parcel of land adjacent to the Panoche Substation.
- The use of four LMS100 natural gas-fired CTGs.
- Each CTG will generate 100 MW net at summer design ambient conditions.
- The entire PEC will be on-line and available for PG&E to dispatch into the grid on or before August 1, 2009.

[4] Although Staff describes Energy Investors Fund, LLC as the Applicant (see, e.g., Ex. 100, p. 3-1), the Application for Certification indicates that Panoche Energy Center, LLC, filed the Application and will own and operate the project. (Ex 1, p. 1-4.)

- As an intermediate load and peaking facility, the plant is estimated to operate no more than 5,000 hours per year. The plant will be dispatched by PG&E in accordance with its economic dispatch procedures.

  (Ex. 1, p. 2-2.)

The project site is located in an unincorporated area of western Fresno County, adjacent to the Panoche Hills. The site is approximately 12 miles southwest of the city of Mendota, 16 miles south-southwest of the city of Firebaugh and approximately 2 miles east of Interstate 5, adjacent to the existing PG&E Panoche Substation. The site and substation are located south of West Panoche Road. The site is more specifically described as the Southwest Quarter of Section 5, Township 15 South, Range 13 East, on the United States Geological Survey (USGS) Quadrangle map. The assessor's parcel number (APN) is 027-060-78S.

The facility site will be located on a 12.8-acre leased portion of a 128-acre parcel. The construction laydown area, including laydown and parking, consists of an additional 8-acre portion of the 128-acre parcel immediately south of the 12.8-acre plant site. The plant site and construction laydown area are leased by the Applicant. The 128-acre parcel is currently in agricultural production with pomegranate trees and is subject to a Williamson Act Contract. The landowner has obtained Fresno County's approval for partial cancellation of the Williamson Act Contract over the project site. (Ex. 8.)

A new 400-foot paved, 24-foot wide access road will extend north from the project site to West Panoche Road.

Two existing facilities—the CalPeak Panoche and Wellhead peaking power plants—are located nearby to the east of the substation. Another proposed power plant project currently under review by the Energy Commission, the Starwood Power Project (06-AFC-10), is proposed for construction immediately

east of the Panoche Substation. The land surrounding these existing and proposed electric facilities is agricultural. (Ex. 100, pp. 3.1 – 3.2.)

Project Description Figures 1 and 2 show the regional setting and local settings of the proposed project.

Equipment and Linear Facilities. The PEC is a nominal 400 MW simple-cycle power plant consisting of four General Electric LMS100 natural gas-fired combustion turbine generators and associated equipment. It is designed as a peaking facility to meet electric generation load during periods of high demand. The project is expected to have an annual capacity factor of approximately 57% (5,000 hours per year).

Auxiliary equipment includes inlet air foggers with evaporative coolers, a step up transformer, compressed air system, control enclosures, aqueous ammonia storage tank, natural gas fuel system, water treatment system, water storage tanks, wastewater system, and site stormwater drainage system.

Emission control systems using best available control technology will be installed to meet the applicable air quality emission limits. Stack emission Nitrogen oxide (NOx) in normal operation will be controlled to 2.5 parts per million, volumetric dry (ppmvd) corrected to 15% oxygen through a combination of water injection in the combustors and operation of a selective catalytic reduction (SCR) system with 19% aqueous ammonia to further reduce NOx emissions, and an oxidation catalyst to reduce the emission of carbon monoxide (CO) and volatile organic compounds (VOCs).

Project Description Figure 3 depicts the general arrangement and layout of the proposed facility. **Project Description Figure 4** provides an architectural rendering of the proposed facility.

The PEC will connect to the PG&E electrical transmission system at the adjacent Panoche Substation. The connection will require approximately 300 feet of new 230 kilovolt (kV) transmission line located within the plant site and PG&E's

substation. PG&E plans to expand the substation by approximately 2.2 acres on the substation's southern boundary.

Natural gas will be delivered to the site via a new 2,400-foot high-pressure, lateral pipeline that would connect to a PG&E high-pressure gas trunk line located east of PG&E's electrical substation. This pipeline would connect with the project on the eastern side of the site at a new gas metering station. At the plant site, the natural gas will pass through a flow-metering station, gas scrubber/filtering equipment, gas pressure control station, electric-driven booster compressors (when required), and a fuel gas heater prior to entering the combustion turbines.

Process water for the cooling towers and other non-potable water uses is proposed to be supplied to the PEC from two new groundwater wells drilled onsite into the Westside Sub-basin of the San Joaquin Valley Groundwater Basin. These wells would also, with proper treatment, supply facility showers, sinks, toilets, and safety showers. As necessary, signs would be posted to alert personnel that water drawn from these wells is not for human consumption. Potable water would be supplied by a bottled water service.

Process wastewater will be disposed of using a deep well injection system. The construction phase will have portable toilets with weekly servicing. During the operational phase, sanitary wastes will be directed to a septic system and leach field designed to treat the sanitary flow from the administration and control building and restrooms.

Construction Schedule. The Applicant proposes to initiate construction of the PEC in Winter 2007-2008. The major construction schedule milestones are shown below:

Activity	***Date***
Begin Construction	January 2008
Start up and Test	June 2009
Commercial Operation	August 2009

There will be an average monthly and peak monthly workforce of approximately 178 and 364, respectively, construction craft people, supervisory, support, and construction management personnel onsite during construction.

Construction will take place between the hours of 6 a.m. and 6 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities. During some construction periods and during the startup phase of the project, some activities will continue 24 hours per day, seven days per week.

The peak construction site workforce level is expected to last from Months 7 through 11 of the construction period.

Facility Closure. Facility closure can be either temporary or permanent. Facility closure can result from two circumstances: 1) the facility is closed suddenly and/or unexpectedly due to unforeseen circumstances, such as a natural disaster or other unexpected event (e.g., a temporary shortage of facility fuel); or 2) the facility is closed in a planned, orderly manner, such as at the end of its useful economic or mechanical life or due to gradual obsolescence.

For a short term unplanned closure, where there is no facility damage resulting in a hazardous substance release, the facility would be kept "as is," ready to resume operating when the triggering event is rectified. If a hazardous substance release is possible, the project owner will notify the CEC compliance unit and follow emergency plans. Depending upon the expected duration of the shutdown, chemicals may be drained from the storage tanks and other equipment. All waste (hazardous and non-hazardous) will be disposed of according to laws and standards in effect at the time of the closure. Facility security will be maintained during the shutdown period. No decommissioning plan will be submitted for a temporary closure.

The anticipated life of the generation facility is 30 years but could continue to operate for a much longer period of time if it remains economically and

mechanically viable. One year prior to a planned closure, the project owner will submit to the CEC a specific decommissioning plan that would include the following:

1. Identification, discussion, and scheduling of the proposed decommissioning activities to include the power plant, applicable transmission lines, and other pertinent facilities constructed as part of the project.

2. Description of the measures to be taken that will ensure the safe shutdown and decommissioning of all equipment, including the draining and cleaning of all tanks, and the removal of any hazardous waste.

3. Identification of all applicable LORS in effect at the time, and how the specific decommissioning will be accomplished in accordance with the LORS.

4. Notification of state and local agencies, including the CEC.

Once land is used for industrial or commercial purposes, it rarely reverts back to its natural state. Reuse of the land will be encouraged in this case, as opposed to taking additional land for future industrial or commercial purposes. If the plant site is to return to its natural state, the specific decommissioning plan will include the removal of all aboveground and underground objects and material, and an erosion control plan that is consistent with sound land management practices. (Ex. 100, pp. 3.1-2 – 3.1-5.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. Panoche Energy Center, LLC, will own and operate the PEC project.

2. The PEC project involves the construction and operation of a nominal 400 MW natural gas-fired, simple-cycle electrical generating facility in western Fresno County, California.

3. The PEC will be used as a peaking facility, operating up to a maximum of 5,000 hours per year.

4. The project includes associated transmission, gas supply, and water supply lines.

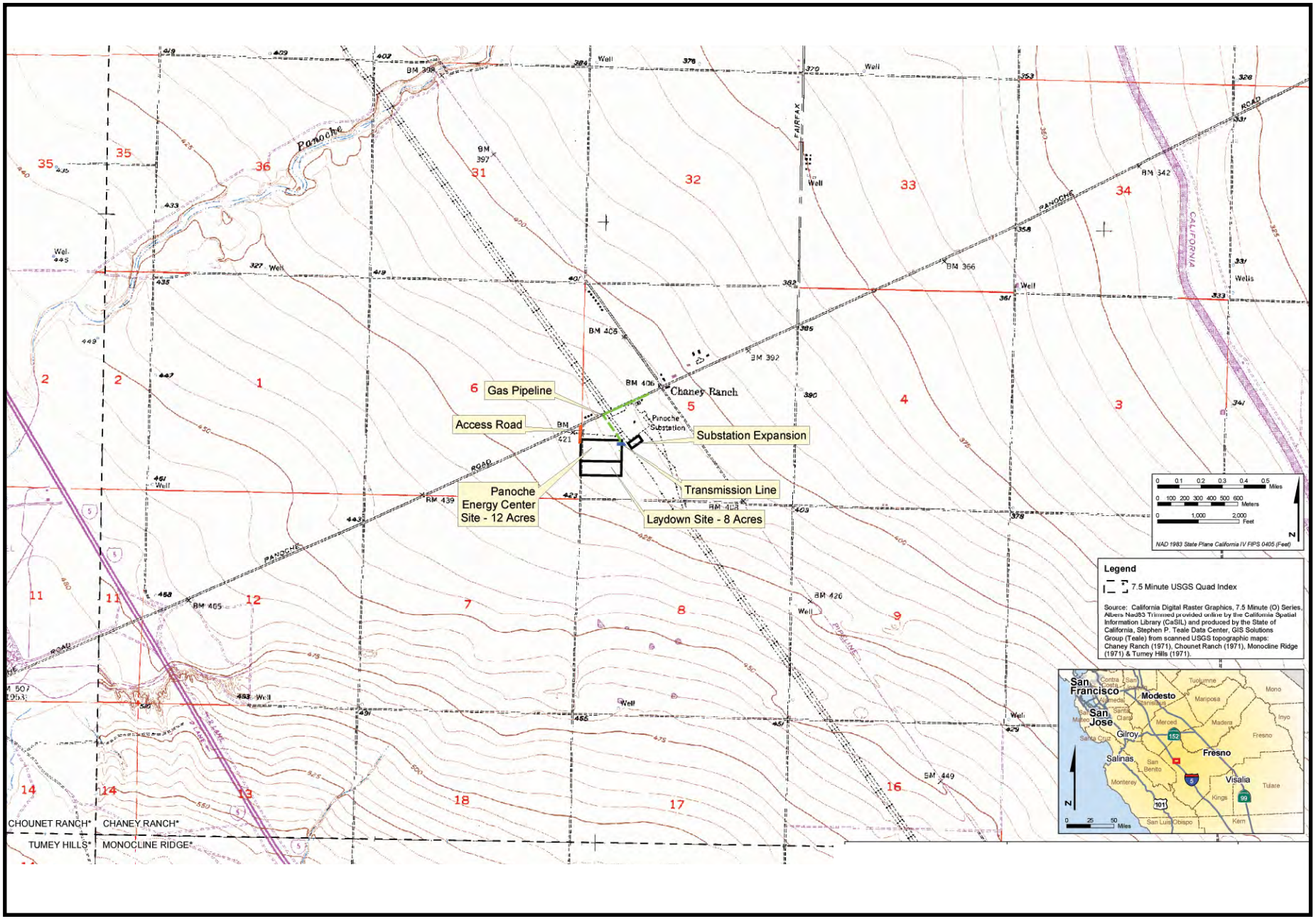
5. The project and its objectives are adequately described by the relevant documents contained in the record.

6. The project will permanently occupy approximately 12.8 acres of leased land.

We therefore conclude that the PEC 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.

PROJECT DESCRIPTION - FIGURE 1

Panoche Energy Center Project - Regional Setting of Project

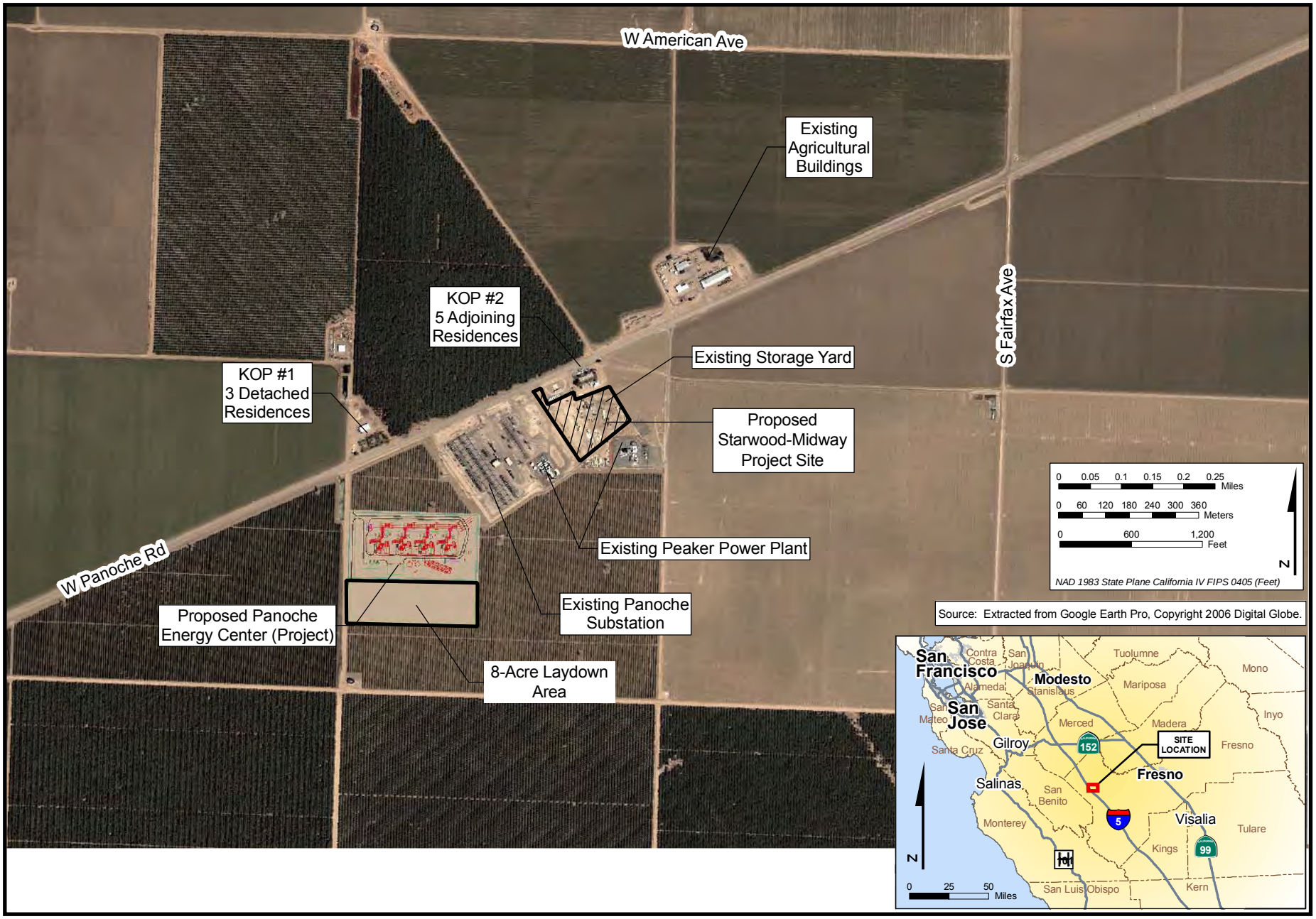


CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

PROJECT DESCRIPTION - FIGURE 2

Panoche Energy Center Project - Local Setting of Project

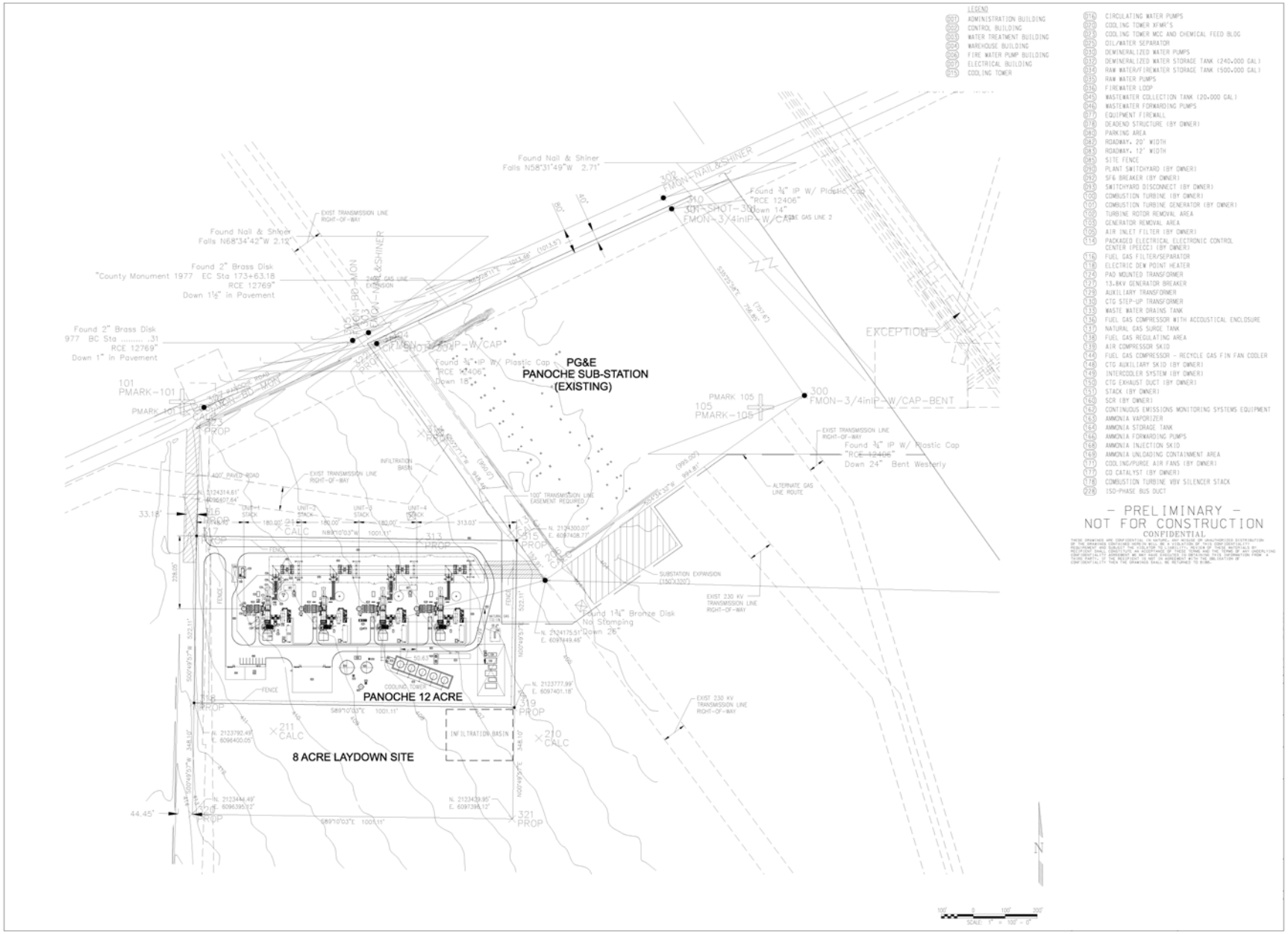


CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

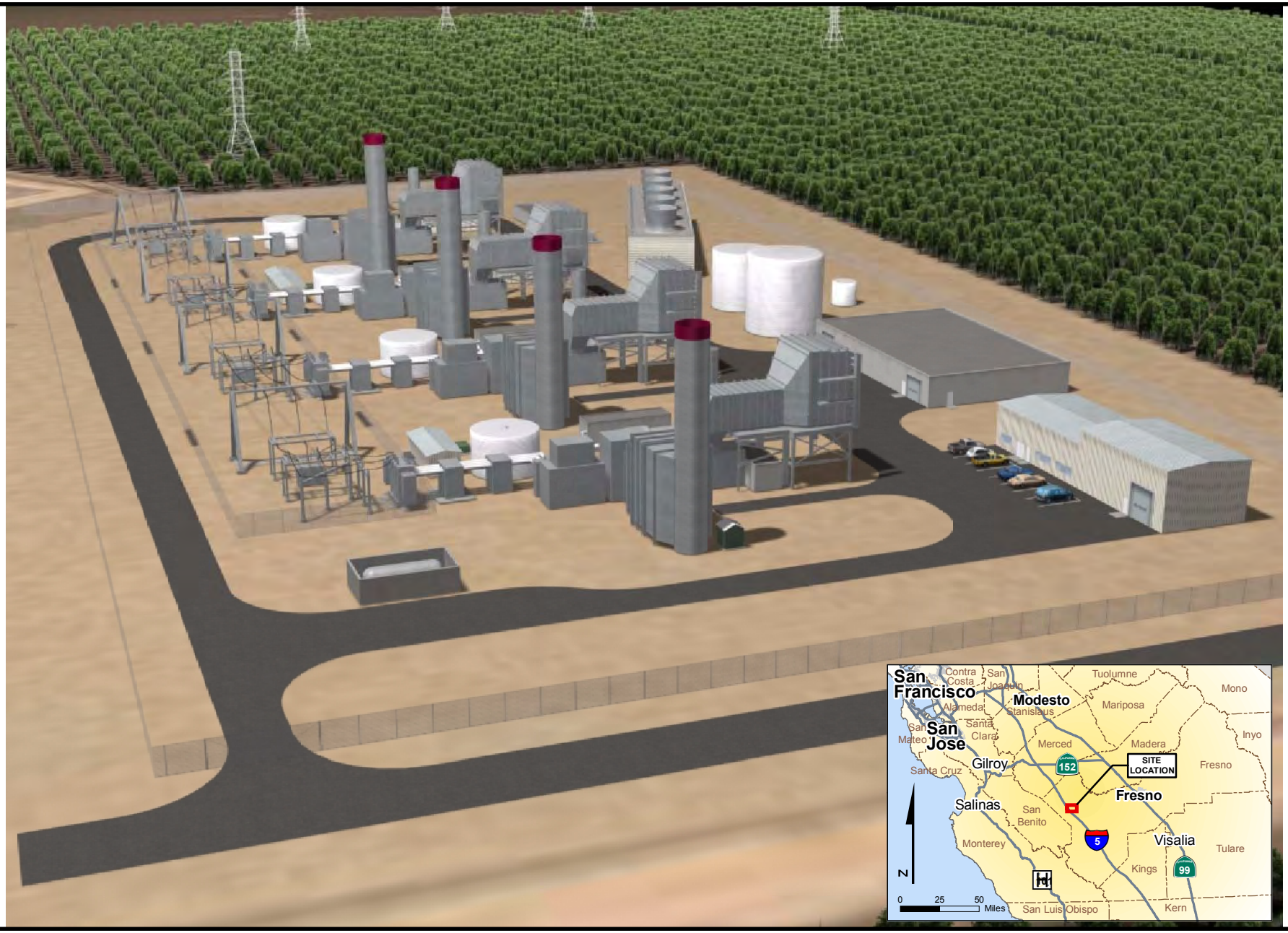
PROJECT DESCRIPTION - FIGURE 3

Panoche Energy Center Project - General Arrangement and Layout of Facility


LEGEND
001 ADMINISTRATION BUILDING
002 CONTROL BUILDING
003 WATER TREATMENT BUILDING
004 WAREHOUSE BUILDING
006 FIRE WATER PUMP BUILDING
007 ELECTRICAL BUILDING
015 COOLING TOWER
016 CIRCULATING WATER PUMPS
020 COOLING TOWER XFMR'S
023 COOLING TOWER MCC AND CHEMICAL FEED BLDG
025 OIL/WATER SEPARATOR
030 DEMINERALIZED WATER PUMPS
032 DEMINERALIZED WATER STORAGE TANK (240,000 GAL)
034 RAW WATER/FIREWATER STORAGE TANK (500,000 GAL)
035 RAW WATER PUMPS
036 FIREWATER LOOP
045 WASTEWATER COLLECTION TANK (20,000 GAL)
046 WASTEWATER FORWARDING PUMPS
047 EQUIPMENT FIREWALL
048 DEADEND STRUCTURE (BY OWNER)
080 PARKING AREA
082 ROADWAY, 20' WIDTH
083 ROADWAY, 12' WIDTH
085 SITE FENCE
090 PLANT SWITCHYARD (BY OWNER)
092 SF6 BREAKER (BY OWNER)
093 SWITCHYARD DISCONNECT (BY OWNER)
100 COMBUSTION TURBINE (BY OWNER)
101 COMBUSTION TURBINE GENERATOR (BY OWNER)
102 TURBINE ROTOR REMOVAL AREA
103 GENERATOR REMOVAL AREA
105 AIR INLET FILTER (BY OWNER)
114 PACKAGED ELECTRICAL ELECTRONIC CONTROL CENTER (PEECC) (BY OWNER)
116 FUEL GAS FILTER/SEPARATOR
118 ELECTRIC DEW POINT HEATER
124 PAD MOUNTED TRANSFORMER
127 13.8KV GENERATOR BREAKER
129 AUXILIARY TRANSFORMER
130 CTG STEP-UP TRANSFORMER
133 WASTE WATER DRAINS TANK
136 FUEL GAS COMPRESSOR WITH ACCOUSTICAL ENCLOSURE
137 NATURAL GAS SURGE TANK
138 FUEL GAS REGULATING AREA
139 AIR COMPRESSOR SKID
144 FUEL GAS COMPRESSOR - RECYCLE GAS FIN FAN COOLER
146 CTG AUXILIARY SKID (BY OWNER)
149 INTERCOOLER SYSTEM (BY OWNER)
150 CTG EXHAUST DUCT (BY OWNER)
151 STACK (BY OWNER)
160 SCR (BY OWNER)
162 CONTINUOUS EMISSIONS MONITORING SYSTEMS EQUIPMENT
163 AMMONIA VAPORIZER
164 AMMONIA STORAGE TANK
166 AMMONIA FORWARDING PUMPS
168 AMMONIA INJECTION SKID
169 AMMONIA UNLOADING CONTAINMENT AREA
171 COOLING/PURGE AIR FANS (BY OWNER)
177 CO CATALYST (BY OWNER)
178 COMBUSTION TURBINE VBV SILENCER STACK
228 15D-PHASE BUS DUCT
- PRELIMINARY -
NOT FOR CONSTRUCTION
CONFIDENTIAL
PG&E
PANOCHE SUB-STATION
(EXISTING)
PANOCHE 12 ACRE
8 ACRE LAYDOWN SITE
EXCEPTION
Found Nail & Shiner
Falls N58°31'49"W 2.71'
Found Nail & Shiner
Falls N68°34'42"W 2.12'
Found 2" Brass Disk
"County Monument 1977 EC Sta 173+63.18
RCE 12769"
Down 1½" in Pavement
Found 2" Brass Disk
977 BC Sta ..... .31
RCE 12769"
Down 1" in Pavement
Found ¾" IP W/ Plastic Cap
"RCE 12406"
Down 14"
Found ¾" IP W/ Plastic Cap
"RCE 12406"
Down 18"
Found ¾" IP W/ Plastic Cap
"RCE 12406"
Down 24" Bent Westerly
Found 1¾" Bronze Disk
No Stamping
Down 26"
EXIST TRANSMISSION LINE
RIGHT-OF-WAY
24" GAS LINE
EXPANSION
100' TRANSMISSION LINE
EASEMENT REQUIRED
INFILTRATION
BASIN
400' PAVED ROAD
ALTERNATE GAS
LINE ROUTE
SUBSTATION EXPANSION
(150'X320')
EXIST 230 KV
TRANSMISSION LINE
RIGHT-OF-WAY
COOLING TOWER
FENCE
101
PMARK-101
105
PMARK-105
300
FMON-3/4inIP-W/CAP-BENT
302
FMON-NAIL&SHINER
310
301-SHOT-3
FMON-3/4inIP-W/CAP
UNIT-1 STACK
UNIT-2 STACK
UNIT-3 STACK
UNIT-4 STACK
180.00'
313.03'
33.18'
44.45'
276.05'
N89°10'03"W 1001.11'
S89°10'03"E 1001.11'
N. 2124314.61'
E. 6096607.64'
N. 2124300.03'
E. 6097408.77'
N. 2124175.51'
E. 6097449.46'
N. 2123777.99'
E. 6097401.18'
N. 2123792.49'
E. 6096400.05'
N. 2123444.49'
E. 6096395.12'
N. 2123439.95'
E. 6097398.12'
N. 2123439.95'
E. 6097398.12'
S00°49'53"W 502.11'
S00°49'53"W 348.10'
S00°49'53"W 1000.00'
S00°49'53"W 1000.00'
S00°49'53"W 1000.00

PROJECT DESCRIPTION - FIGURE 4

Panoche Energy Center Project - Artist Rendering of Proposed Facility



CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

II. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which achieve the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts. [Cal. Code of 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" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code of Regs., tit. 14, § 15126.6(f).] Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project." [Cal. Code of Regs., tit. 14, § 15126.6(f).]

The Applicant provided an 'alternatives analysis' in the AFC and related data responses (Ex. 1, § 4.1), describing the site selection process and project configuration in light of project objectives. Staff included a similar analysis in the FSA. (Ex. 100, p. 6.1 — 6.12.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Objectives

PEC's basic objectives are:

- Development of a project to meet the contractual terms of the PG&E Power Purchase agreement dated March 28, 2006.
- Meet various vendor requirements necessary for power generation and environmental control equipment guarantees.
- A project that could obtain all required permits due to a lack of significant environmental impacts.

- A site that is located near an existing substation and transmission line.
- A project that will provide a fair return on the project investment.
- A project that will be sufficiently attractive to the investment community so that the required construction funds can be obtained at reasonable rates.

  (Ex. 100, p. 6-3)

2. Alternative Sites

Four sites were selected to be reviewed as alternatives, two identified by the Applicant and two selected by Staff based on prior knowledge of the area. Of these four alternative sites, three are near or adjacent to the PG&E Los Banos Control Station, and one adjacent to the PG&E Gates Substation. The Applicant had initially considered a Los Banos site and the Gates site. All were environmentally inferior to the proposed site due to potential significant impacts to state and federal Endangered Species Act listed species. The three Los Banos sites are all identified as San Joaquin Kit Fox primary habitat versus the foraging areas at the Panoche proposed site and Gates Substation. These Los Banos sites also support other endangered species (see **Alternatives Table 1** below) and populations of state or federally listed burrowing owls, Tule elk, kangaroo rats, and golden eagles. Therefore the biological environmental impacts at the alternative sites were more significant.

Alternatives Table 1

Comparison of the Alternative Sites

Sites	Panoche Energy Center	Los Banos-1	Los Banos-2	Los Banos-3	Gates
Size (1)	128 Acres	306 Acres	150 Acres	300 Acres	82.64 Acres
Zoning	Exclusive Agriculture (AE-20)	Exclusive Agriculture (A-2)	Exclusive Agriculture (A-2)	Exclusive Agriculture (A-2)	Exclusive Agriculture (AE-20)
DOC Farmland Designation	Prime Farmland	Grazing Land	Grazing Land	Grazing Land	Prime Farmland

Current Use	Agriculture	Open space and agricultural use adjacent to substation fence line,	Wind Farm, agricultural use adjacent to substation fence line	Wind Farm agricultural use adjacent to substation fence line	Agriculture
Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant
Biological Resources	San Joaquin Kit Fox Foraging Area	Primary Habitat for: San Joaquin Kit Fox Burrowing Owls Tule Elk Kangaroo Rat Golden Eagles	Primary Habitat for: San Joaquin Kit Fox Burrowing Owls Tule Elk Kangaroo Rat Golden Eagles	Primary Habitat for: San Joaquin Kit Fox Burrowing Owls Tule Elk Kangaroo Rat Golden Eagles	San Joaquin Kit Fox Foraging Area
Impacts	Significant	Significant	Significant	Significant	Significant
Water Resources	Applicant proposes use of fresh water Non-potable water is available	Non-potable available	Non-potable available	Non-potable available	Non-potable available
Impacts	Less than Significant	Less than Significant	Less than Significant	Less than Significant	Less than Significant

(1) The project would require permanent use of 12.8 acres plus 8 acres of temporary use for laydown.
(2) The California Department of Conservation (DOC) classifies crop and grazing lands on Important Farmland Inventory maps for each county with agricultural activity.

In addition to the alternative sites shown above, the possibility of locating the proposed project adjacent to the 230 kilovolt line that runs from the Gates Substation to the Los Banos Control Center was explored. It was discovered during interviews of the Los Banos Control Station Supervisor and Operating Engineer that PG&E requires a plant of that size to either tie-in to a substation bus or reconductor the line to handle the power. In addition, placing the proposed project adjacent to the 230 kV power line at any alternative site would require reconducturing of between 40 and 80 miles of transmission lines causing additional significant impacts. Under these circumstances, a detailed analysis of

additional alternative sites such as those that may exist along the Los Banos-Gates 230-kV Line, need not be performed.

Developing a similar project at an alternative site is possible, but would not minimize environmental impacts, which is one of the major objectives of the project. Locating the project at an alternative site would not substantially lessen any identified potential impacts of the proposed project and might instead increase their magnitude. (Ex. 100, pp. 6-6 – 6-7.)

3. Conservation Alternative

One alternative to meeting California's electricity demand with new generation is to reduce that 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.

Even with this 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 much more aggressive demand side programs could accomplish this at the economic and population growth rates of the last ten 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 in order to maintain adequate supplies.

4. No Project Alternative

CEQA requires an evaluation of the No Project alternative "… to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." [14 Cal. Code Regs., §

15126.6(e)(1).] The No Project analysis assumes: (a) that baseline environmental conditions would not change because the proposed project would not be installed; and (b) that the events or actions reasonably expected to occur in the foreseeable future would occur if the project were not approved. While no project-related impacts would be created under the No Project scenario, all potential project-related impacts are mitigated to insignificant levels under the PEC proposal.

The evidentiary record indicates that no potentially significant impacts that could not be avoided or mitigated have been identified. If this project is not built, the same market conditions that encouraged it to be proposed will encourage other similar projects. A substantial amount of additional generating capacity could be proposed even in the absence of this project. The Commission can reasonably expect California's need for new electric power plants to be filled with or without the proposed project and there is no reason to assume that the total amount of capacity actually built would differ with or without this project.

The extent to which nuclear and older fossil generation resources will be replaced by new resources can be expected to be the same with or without this project. The extent to which generation from existing power plants would consume fuel and emit pollutants would be likely the same with or without this project.

The "no project" alternative would eliminate the expected economic benefits that the proposed project would bring to Fresno County, including increased property taxes, employment, sales taxes, and sales of services, manufactured goods, and equipment.

The "no project" alternative is environmentally superior to the project as originally proposed because the original proposal could have had significant environmental impacts on local and regional air quality, the San Joaquin Kit Fox, and the agricultural lands if not mitigated. Not constructing and operating an

(unmitigated) power plant would avoid these impacts. However, the use of the mitigation described in the various sections will reduce any impacts to less than significant levels and economic benefits will be derived from the project. Therefore, the Commission concludes that the “no project” alternative is not the preferred alternative.

The evidentiary record further indicates that the preferable alternative is the proposed project using the confined aquifer brackish water for the project water supply, and other suggested mitigation. Further energy efficiency measures and alternative technologies (geothermal, solar, wind, and hydroelectric) are not feasible alternatives to the proposed project.

The “no project” alternative is not the preferred alternative to the proposed project because it would neither facilitate the possible closure of older, less efficient, existing generation or, more importantly, provide enhanced reliability. (Ex. 100 , pp. 6-10 – 6-11.)

5. Alternative Fuels and Technologies

Staff compared various alternative technologies with the proposed project, scaled to meet the project’s objectives. Technologies examined were those principal electricity generation technologies which do not burn fossil fuels such as natural gas—solar, wind, geothermal, and biomass. Both solar and wind generation can be credited with an absence or reduction in air pollutant emissions and need for related controls, and visible plumes. In the case of biomass, however, emissions can be substantially greater. In addition, the water consumption for both wind and photovoltaics are substantially less than for a natural gas fired plant because there is no thermal cooling requirement.

However, solar and wind resources require large land areas in order to generate 400 MWs of electricity. Specifically, central receiver solar thermal projects require

approximately eight acres per MW; 400 MWs would require approximately 3,200 acres, or over 250 times the amount of land area taken by the proposed PEC site and linear facilities. Parabolic trough solar thermal technology requires similar acreage per MW. Solar thermal technologies can also potentially use large quantities of water for cooling, steam make-up, and mirror washing.

Wind generation “farms” generally require about 4.5 acres per MW, with 400 MW requiring 1800 acres, nearly 150 times the amount of space taken by the proposed plant site and linear facilities. The Panoche Hills wind resource area is approximately four miles due west of the proposed site, but does not have the necessary infrastructure nearby to support a project of this size. Projects with greater land requirements in the western San Joaquin Valley have the potential for significant biological impacts on sensitive species and habitat areas. The need for extensive acreage would also add the complexities of local (Fresno County) discretionary actions for land use modifications. While there would not be visible plumes, other visual impacts of the large solar arrays and windfarm generators must be considered in an area that has many broad views of the Sierra Nevada, Panoche Hills, and the Coast Range mountains from Interstate 5.

For biomass generation, a fuel source such as wood chips (the preferred source) or agricultural waste is necessary. Agricultural waste is available in large quantities close to the PEC plant. However, biomass plants are typically under 50 MW, which is substantially smaller than the expected capacity of the 400 MW PEC project. Additionally, biomass plants are typically co-generation configurations with steam turbines, so they demand as much or more water as would the proposed simple-cycle project.

Currently, there are no geothermal or hydroelectric resources in this western section of the southern San Joaquin Valley. Looking outside the San Joaquin Valley, the development uncertainties, and the potential for impacts at remote resource areas are significant constraints.

Because of the typically lower efficiencies of alternative generation technologies, they do not fulfill a basic objective of this plant which is to provide power from a peaking facility to meet the growing demands for reliable power in Northern California. Geothermal, hydroelectric, solar, wind or biomass technologies do not present feasible alternatives to the proposed project. (Ex. 100, pp. 6-7 – 6-9.)

Therefore, the evidence shows that none of the alternative fuels or technologies is a feasible option.

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find and conclude as follows:

1. The evidence contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.
2. The evidence contains an adequate review of alternative sites, fuels, technologies, and the “no project” alternative.
3. Alternative fuels and technologies are not capable of meeting project objectives.
4. No site alternative better meets the stated project objectives and applicable siting criteria than the proposed site.
5. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been established.
6. The “no project” alternative would not provide electrical system benefits.
7. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the PEC will not create any significant direct, indirect, or cumulative environmental impacts.

We conclude, therefore, that the evidence contains a sufficient analysis of alternatives and complies with the requirements of the California Environmental Quality Act, the Warren-Alquist Act, and their respective regulations. No Conditions of Certification are required for this topic.

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, as well as the specific Conditions of Certification adopted as part of this Decision.

SUMMARY OF THE EVIDENCE

The evidence contains a full explanation of the purposes and intent of the Compliance Plan (Plan). Ex. 100, pp. 7.1 – 7.19 The Plan is the administrative mechanism used to ensure that the PEC 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 various general elements 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;
- Establish procedures for settling disputes and making post-certification changes;
- State the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed conditions; and

- Establish requirements for facility closure.

The Plan also 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 comply with LORS or mitigate potentially adverse impacts associated with construction, operation, and closure of the project to insignificant levels. 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 read in conjunction with any additional requirements contained in the individual Conditions of Certification.

FINDINGS AND CONCLUSIONS

The evidence establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Panoche Energy Center 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 read 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
INCLUDING
COMPLIANCE MONITORING AND CLOSURE PLAN

DEFINITIONS

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

PRE-CONSTRUCTION SITE MOBILIZATION

Site mobilization is limited preconstruction activities at the site to allow for the installation of 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 site mobilization. Fencing for the site is also considered part of site mobilization. Walking, driving or parking a passenger vehicle, pickup truck and light vehicles is allowable during site mobilization.

CONSTRUCTION GROUND DISTURBANCE

Construction-related ground disturbance refers to activities that result in the removal of top soil or vegetation at the site and for access roads and linear facilities.

CONSTRUCTION GRADING, BORING, AND TRENCHING

Construction-related 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.

CONSTRUCTION

[From section 25105 of the Warren-Alquist Act.] Onsite work to install permanent equipment or structures for any facility. 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, where the power plant has reached reliable

steady-state production of electricity at the rated capacity. For example, 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 CPM will oversee the compliance monitoring and shall be 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, and ownership or operational control;

4. documenting and tracking compliance filings; and

5. ensuring that the compliance files are maintained and accessible.

The CPM is the contact person for the Energy Commission and will consult with appropriate responsible agencies and the Energy Commission 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.

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 will be to assemble both the Energy Commission's and the 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 to confirm that they 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 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; and

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 of the 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 delegate 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 onsite 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, all documents submitted as verification for conditions, and all other project-related documents.

Energy Commission staff and delegate agencies shall, upon request to the project owner, be given unrestricted access to the files.

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, and in most cases without full Energy Commission approval.

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

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

2. providing 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 (e.g., 90, 60 and 30-days) 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 involved condition(s) of certification by condition number and include 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.

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 submittals shall be addressed as follows:

Compliance Project Manager
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

If the project owner desires Energy Commission staff action by a specific date, it shall so request in its submittal cover letter and include a detailed explanation of the effects on the project if this 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 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 (e.g., 30, 60, 90 days) 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 starting 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. This is important if the required lead-time for a required compliance event extends beyond the date anticipated for start of construction. It is also important that the project owner 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; and
7. the compliance status of each condition, e.g., "not started," "in progress" or "completed" (include the date).

Satisfied conditions do not need to be included in the compliance matrix after they have been identified as satisfied in at least one monthly or annual compliance report.

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 an initial list of dates for each of the events identified on the **Key Events List. The Key Events List Form is found at the end of this section.**

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and eight copies 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, 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.

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 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, 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 fee of seventeen thousand six hundred seventy-six dollars ($17,676), which will be adjusted annually on July 1. The initial payment is due on the date the Energy Commission adopts the final decision. 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. 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. Laws, Ordinances, Regulations and Standards (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 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 that 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 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. 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, 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. This process takes approximately two to three months to complete, and possibly longer for complex project modifications.

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 takes approximately one month to complete, and requires public notice and approval by the full Commission.

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 takes less than one month 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.

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. This process usually takes less than five working days to complete.

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 its 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 Procedure

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 this procedure for resolving a dispute. Disputes may pertain to actions or decisions made by any party, including the Energy Commission's delegate agents.

This procedure 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 procedure 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 process. The procedure for informal dispute resolution is as follows:

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 and 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 provide an initial report, within 48 hours, followed by a written report filed within seven days.

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 conclusions 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.
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.

CONDITION NUMBER	SUBJECT	DESCRIPTION
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 engineering assessment conducted for the PEC consisted of separate analyses that examined the design, engineering, efficiency, and reliability of the project. These analyses included the on-site power generating equipment and project-related facilities (natural gas supply pipeline, water supply pipelines, and transmission interconnection).

A. FACILITY DESIGN

The review of facility design covers several technical disciplines, including the civil, electrical, mechanical, and structural engineering elements related to project design, construction, and operation.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The AFC describes the preliminary facility design. (Ex. 1.) In considering the adequacy of the design plans, Staff reviewed 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 included 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.

We adopt Conditions of Certification that establish a design review and construction inspection process to verify compliance with applicable standards and requirements.[5] In addition, the Conditions of Certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee

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[5] Conditions of Certification **GEN-1** through **GEN-8, CIVIL-1** through **CIVIL-4, STRUC-1** through **STRUC-4, MECH-1** through **MECH-3,** and **ELEC-1.**.

project design and construction. They require approval by the Chief Building Official (CBO) after appropriate inspections by qualified engineers, and no element of construction subject to CBO review may proceed without the CBO's approval. (Ex. 100, p. 5.1-4.)

The project will be designed and constructed in conformance with the latest edition of the California Building Code (currently the 2007 CBC) 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. During the time that the Application For Certification was under review, California adopted the 2007 California Building Code, which replaces the 2001 edition, effective in January, 2008. Because the Applicant had pre-ordered the General Electric combustion turbines before the 2007 code was approved, they were built and certified to the 2001 code's standards. The Applicant requested, and the Staff agreed that it was appropriate, that the 2001 CBC apply to the combustion turbines. The other project structures and features, including the supporting structures upon which the turbines are mounted, will be designed and constructed to the 2007 CBC. Staff witness Steve Baker testified that it was unnecessary to apply the 2007 code to the turbines; he was confident that no changes to the turbines would be required to meet the 2007 code. General Electric would, however, charge the Applicant "thousands of dollars" for new paperwork to certify compliance with the 2007 code, an unnecessary expenditure for these turbines. (RT, p. 43 – 46.)

Potential geological hazards were also considered, and the evidence contains a review of preliminary project design, site preparation and development, major project structures, systems and equipment, mechanical systems, electrical systems, and related facilities.

The project will implement site preparation and development criteria consistent with accepted industry standards. This includes design practices and

construction methods for grading, flood protection, erosion control, site drainage, and site access. (Ex. 100, p. 5.1-2.) Condition **CIVIL-1** ensures 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 as well as facilities used for storage of hazardous or toxic materials. Condition **GEN-2** includes a list of the major structures and equipment included in the initial engineering design for the project.

The power plant site is located in Seismic Zone 4. (Ex. 100, p. 5.1-2.) The 2007 CBC requires specific "lateral force" procedures for different types of structures to determine their seismic design. To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1** requires the project owner to submit its proposed procedures to the CBO for review and approval prior to the start of construction. (Ex. 100, p. 5.1-3.)

Conditions **MECH**-1 through **MECH**-3 ensure the project's mechanical systems will comply with appropriate standards. Condition **ELEC-1** ensures that design and construction of major electrical features will comply with applicable LORS.

Finally, the evidence also addresses project closure. (Ex. 100, p. 5.1-5.) To ensure that decommissioning of the facility will conform with applicable LORS to protect the environment and public health and safety, the project owner shall submit a decommissioning plan. This plan is described in the general closure provisions of the Compliance Monitoring and Closure Plan contained in Part III of this Decision.

FINDINGS AND CONCLUSIONS

Based on the evidence, the Commission makes the following findings and conclusions:

1. The PEC is currently in the preliminary design stage.
2. The evidence contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards. This will occur through the use of design review, plan checking, and field inspections.
3. The Conditions of Certification below and the provisions of the Compliance Plan contained in this Decision set forth requirements to be followed in the event of the planned, the unexpected temporary, or the unexpected permanent closure of the facility.
4. The Conditions of Certification ensure that the project will be designed, constructed, and ultimately closed in a manner that protects environmental quality and public health and safety.

We therefore conclude that with the implementation of the Conditions of Certification listed below, the PEC will be designed and constructed in conformity with applicable laws pertinent to its geologic, as well as to its civil, structural, mechanical, and electrical engineering aspects and will not cause any significant environmental impacts arising from its design or construction.

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 Building Standards Administrative Code, California Electrical Code, California Mechanical Code, California Plumbing Code, California Energy Code, California Fire Code, California Code for Building Conservation, California Reference Standards Code, and all other applicable engineering LORS in effect at the time initial design plans are submitted to the CBO for review and approval, except that the CBSC applicable to the General Electric supplied equipment shall be the 2001 CBSC. (The CBSC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously.) The project owner shall insure that all the provisions of the above applicable codes be enforced during any construction, addition, alteration, moving, demolition, repair, or

maintenance of the completed facility [2007 CBC, Section 101.3, Scope]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **TRANSMISSION SYSTEM ENGINEERING** section of this document.

In the event that the initial engineering designs are submitted to the CBO when a successor to the 2007 CBSC is in effect, the 2007 CBSC provisions identified herein 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 insure that all contracts with contractors, subcontractors and suppliers shall clearly specify that all work performed and materials supplied on this project comply with the codes listed above.

Verification: Within 30 days after receipt of the Certificate of Occupancy, the project owner shall submit to the Compliance Project Manager (CPM) a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [2007 CBC, Section 109 – 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 which may require CBO approval for the purpose of complying with the above stated codes. The CPM will then determine the necessity of CBO approval on the work to be performed.

GEN-2 Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List and a Master Specifications List. 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 when requested.

Verification: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of rough grading, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the

major structures and equipment listed in **Facility Design Table 2** below. Major structures and equipment shall be added to or deleted from the table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Facility Design Table 2
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	4
CT Generator Foundation and Connections	4
SCR Stack Structure, Foundation and Connections	4
CT Exhaust Duct Structure, Foundation and Connections	4
CT Step-up Transformer Foundation and Connections	4
CT Auxiliary Skid Foundation and Connections	4
CT Inter Cooler System Structure, Foundation and Connections	4
CT Inlet Air Filter House Structure, Foundation and Connections	4
Packaged Electrical Electronic Control Center Structure, Foundation and Connections	4
Electrical Dew Point Heater Foundation and Connections	4
Pad Mounted Transformer Foundation and Connections	2
Generator Breaker Foundation and Connections	2
Auxiliary Transformer Foundation and Connections	2
Fuel Gas Compressor with Acoustical Enclosure Structure, Foundation and Connections	1
Natural Gas Surge Tank Structure, Foundation and Connections	1
Fuel Gas Re-circulating Area Foundation and Connections	1
Air Compressor Skid Foundation and Connections	1
Fuel Gas Compressor/Recycle Gas Fin Fan Cooler Foundation and Connections	1
CO Catalyst Structure, Foundation and Connections	4
Combustion Turbine VBV Silencer Stack Structure, Foundation and Connections	4
CEMS Equipment Structure, Foundation and Connections	4
Ammonia Vaporizer Foundation and Connections	4
Ammonia Storage Tank Foundation and Connections	1
Ammonia Forwarding Pump Skid Foundation and Connections	2
Ammonia Injection Skid Foundation and Connections	4
Gas Filter/Separator Skid Foundation and Connections	4
Cooling/Purge Air Fans Foundation and Connections	4
Cooling Tower Structure, Foundation and Connections	1
Cooling Tower Circulating Water Pump Foundation and Connections	2

Equipment/System	Quantity (Plant)
Recycled Water Storage Tank Foundation and Connections	1
Warehouse Building Structure, Foundation and Connections	1
Water Treatment Building Structure, Foundation and Connections	1
Oil/Water Separator Foundation and Connections	1
Fire Water Pump Building Structure Foundation and Connections	1
Raw Water/Fire Water Storage Tank Structure, Foundation and Connections	1
Raw Water Pumps Foundation and Connections	2
Demineralized Water Storage Tank Structure, Foundation and Connections	1
Demineralized Water Pumps Foundation and Connections	2
Wastewater Collection Tank Structure, Foundation and Connections	1
Wastewater Drains Tank Structure, Foundation and Connections	4
Wastewater Forwarding Pumps Foundation and Connections	2
Equipment Firewall Structure, Foundation and Connections	4
Electrical Building Structure, Foundation and Connections	2
Cooling Tower Transformers Foundation and Connections	2
Cooling Tower MCC and Chemical Feed Building Structure, Foundation and Connections	1
Dead End Structure Foundation and Connections	2
Control/Administration Building Structure Foundation and Connections	1
Storm Water Retention Pond	1
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection 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 [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], 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 as otherwise agreed 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 the 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 a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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

The RE shall:

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

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

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

4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) 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 as not conforming to the approved plans and specifications.

The RE shall have the authority to halt construction and to require changes or remedial work, if the work does not conform to applicable requirements.

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

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

If the RE or the delegated engineer(s) are 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-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) a civil engineer; B) a soils engineer, or a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; and C) 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: D) 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; E) a mechanical engineer; and F) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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 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, Section 104.2, Powers and Duties 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 Report, Geotechnical Report or Soils Report 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 design, stamp, and sign all plans, calculations and specifications for proposed site work, civil works and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and

    3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes in 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 Report, Geotechnical Report or Soils Report containing field exploration reports, laboratory tests and engineering analysis detailing the nature and extent of the soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load [2007 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations];

    3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the

requirements set forth in the 2007 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both); and

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

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations [2007 CBC, section 104.2.4, Stop orders].

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare 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 CBC, Appendix Chapter 33; Section 3317, Grading Inspections (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both).

D. The design engineer shall:

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

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

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

4. Evaluate and recommend necessary changes in design; and

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

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

F. The electrical engineer shall:

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

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

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

At least 30 days (or project owner and CBO approved alternative timeframe) 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 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection)]; and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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 RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action [2007 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and

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

Verification: At least 15 days (or project owner and CBO approved alternative timeframe) 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 the corrective action required [2007 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

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

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed

structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project [2007 CBC, Section 106.4.2, Retention of Plans]. Electronic copies of the approved plans, specifications, calculations and marked-up as-builts shall be provided to the CBO for retention by the CPM.

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, in the next Monthly Compliance Report, (a) a written notice that the completed work is ready for final inspection, and (b) a signed statement that the work conforms to the final approved plans. After storing final approved engineering plans, specifications and calculations as described above, the project owner shall submit to the CPM a letter stating that the above documents have been stored and indicate the storage location of such documents.

Within 90 days of the completion of construction, the project owner shall provide to the CBO three sets of electronic copies of the above documents at the project owner's expense. These are to be provided in the form of "read only" adobe .pdf 6.0 files, with restricted printing privileges (i.e. password protected), 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 Report, Geotechnical Report or Foundation Investigations Report required by the 2007 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

Verification: At least 15 days (or project owner and CBO approved alternative timeframe) 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, Section 104.2.4, Stop orders].

Verification: The project owner shall notify the CPM within 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 2007 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. 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, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. 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 [1998 CBC, Section 3318, Completion of Work].

Verification: Within 30 days (or project owner and CBO approved alternative timeframe) 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, with a copy of the transmittal letter to the CPM. The project owner shall submit a copy of the CBO's approval to the CPM in the next Monthly Compliance Report.

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **Facility Design Table 2** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 2**, above):

1. Major project structures;

2. Major foundations, equipment supports and anchorage; and

3. Large field fabricated tanks.

Construction of any structure or component shall not commence 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 (i.e., 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, Section 108.4, 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 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents];

4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [2007 CBC, Section 106.3.4, Architect or Engineer of Record]; and

5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to the applicable LORS [2007 CBC, Section 106.3.4, Architect or Engineer of Record].

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

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

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

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

2. Concrete pour sign-off sheets;

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

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

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2007 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

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, Section 1701.3, Duties and Responsibilities of the Special Inspector]. 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 to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 2007 CBC, Chapter 1, Section 106.3.2, Submittal documents and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give to the CBO prior notice of the intended filing.

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

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

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in **Facility**

Design Table 2, Condition of Certification **GEN-2**, above. 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 said construction [2007 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 2007 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be 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 ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Fresno County code.
- The CBO may deputize inspectors to carry out the functions of the code enforcement agency [2007 CBC, Section 104.2.2, Deputies].

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **Facility Design Table 2**, Condition of Certification **GEN-2** above, the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the 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 the 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 said installation [2007 CBC, Section 108.3, 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 project owner and CBO approved alternative timeframe) 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 said 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, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) 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 and 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 [CBC 2007, Section 106.3.2, 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, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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 project owner and CBO approved alternative timeframe) 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

In accordance with CEQA, the Commission must consider whether the project's consumption of energy in the form of non-renewable fuel will result in adverse environmental impacts on energy resources. [Cal. Code of Regs., tit. 14, § 15126.4(a)(1), Appendix F.] This analysis reviews the efficiency of project design and examines whether the project will incorporate measures that prevent wasteful, inefficient, or unnecessary energy consumption.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Pursuant to CEQA Guidelines, CEC staff analyzed whether the Panoche Energy Center's (PEC) use of natural gas would result in: 1) an adverse effect on local and regional energy supplies and resources; 2) whether any adverse impacts are significant; and 3) whether mitigation measures exist to reduce or eliminate wasteful, inefficient, or unnecessary consumption of fuel or energy. (Ex. 100, p. 5.3-1.)

Under average ambient conditions, the PEC is expected to burn natural gas at a nominal rate of 3,220 million Btu per hour LHV (lower heating value). Electricity will be generated at an overall project fuel efficiency of approximately 40.7 percent LHV with the combustion turbines operating at maximum full load. (Ex. 100, p. 5.3-1.)

Natural gas fuel will be supplied to the project from the existing PG&E Line 2 via a new 16-inch diameter, 2,400 foot-long interconnection. (Ex. 1, §§ 3.2, 3.4.6, 3.11.7.1.) The interconnecting line is adequate to deliver capacity for a project of this size. There is no real likelihood that the PEC will require the development of additional energy supply capacity. (Ex. 100, p. 5.3-3.)

The project objective is to provide flexible peaking and intermediate power and ancillary services during periods of high demand. (Ex. 1, §§ 1.1, 1.2.2, 3.4.1, 3.9.2.1, 3.11.4.) A simple-cycle configuration is consistent with this objective. The PEC will have four simple cycle power plants in parallel, generating electricity by four natural gas-fired turbine generators. (Ex. 1, §§ 1.1, 1.2.2, 3.1, 3.4.1.) This design offers short start-up time and fast ramping capability for peaking power. Further, when reduced output is required, one or more turbine generators can be shut down, allowing the remaining machines to produce a percentage of the full power at optimum efficiency, rather than operating a single, larger machine at a less efficient level of load output. (Ex. 100, p. 5.3-3.)

Modern gas turbines embody the most fuel-efficient electric generating technology available today. The PEC will employ four GE LMS100 gas turbine generators, the newest and most efficient available. GE has taken a novel approach with the LMS100 by combining technology from both aircraft engines and heavy industrial machines. The net result of the design improvements is a doubling of power output, a ten percent improvement in fuel efficiency, and much greater operating flexibility. While the fuel efficiency of other gas turbine generators drops off rapidly when the machine is operated at less than full load, the efficiency of the LMS100 suffers much less at lower output.

The LMS100 can be operated at loads as low as ten percent (10 MW), then ramped up quickly. It can go from a cold start to full load in ten minutes. Such operating flexibility make this the most capable machine available for providing ancillary services such as peaking, load following, spinning and non-spinning reserve, and automatic generation control. Staff testimony demonstrated that the LMS100 has superior operating flexibility and fuel efficiency when compared to available alternative combustion turbines. (Ex. 100, p. 5.3-6.)

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find and conclude as follows:

1. The PEC project will consist of four simple-cycle GE LMS100 power plants in parallel. Under expected project conditions, the facility will operate in peaking duty at an annual capacity factor of up 57 percent and up to a total of 5,000 engine hours per year for each of the four combustion turbines..

2. Existing natural gas resources far exceed the fuel requirements of the project.

3. The PEC will not consume natural gas in a wasteful, inefficient, or unnecessary manner.

4. The project configuration and choice of generating equipment represent an acceptable combination to achieve project objectives.

5. The project will not require additional sources of energy supply.

6. The project will have no significant impacts on energy resources.

The Commission therefore concludes that the Panoche Energy Center Project will not cause any significant direct or indirect impacts on energy resources.

No Conditions of Certification are required for this topic.

C. POWER PLANT RELIABILITY

We must determine whether the project will be designed, sited, and operated to ensure safe and reliable operation. [Pub. Resources Code, § 25520(b); Cal. Code of Regs., tit. 20 § 1752(c)(2).] However, there are currently no laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence indicates that a power plant is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely if the project exhibits reliability at least equal to that of other power plants on the system. Reliable operation is a combination of factors, i.e., the power plant should be available when called upon to operate and it should be expected to operate for extended periods without shutdown for maintenance or repairs. Project safety and reliability are achieved by ensuring equipment availability, plant maintainability with scheduled maintenance outages, fuel and water availability, and adequate resistance to natural hazards. (Ex. 100, pp. 5.4-1 – 5.4-7.)

The project owner will ensure equipment availability by use of quality assurance/quality control programs (QA/QC) typical of the power industry. These include inventory review and equipment inspection, as well as testing on a regular basis during design, procurement, construction, and operation. Qualified vendors of plant equipment and materials will be selected based on past performance and independent testing contracts to ensure that reliable equipment is acquired. To ensure implementation of the QA/QC programs, the **FACILITY DESIGN** portion of this document contains appropriate conditions of certification. (Ex. 100, p. 5.4-3.)

The evidentiary record further indicates that the project's design includes appropriate redundancy of function. The project's four combustion turbine-generators are configured as independent, parallel equipment trains. This provides inherent reliability allowing the facility to continue to operate at reduced output in the event that a non-redundant component in one train should fail. Furthermore, all plant ancillary systems are also designed with adequate redundancy to ensure continued operation in the face of equipment failure. (Ex. 100, p. 5.4-4.) Project maintenance will be typical of the industry, including preventative and predictive techniques. Any necessary maintenance outages will be planned for periods of low electricity demand. (Ex. 1, § 3.9.2.1; Ex.100, p. 5.4-4.)

Reasonable long-term availability of fuel and water is also necessary to ensure project reliability. As discussed in the section on **POWER PLANT EFFICIENCY**, the project will be supplied natural gas through a new 16-inch diameter 2,400 foot-long interconnection from the existing PG&E line 2 north of the project site. (Ex. 1, §§ 1.2.4, 3.1, 3.4.7, 3.11.7.2.) The record indicates that this natural gas system offers adequate supply and pipeline capacity to meet project needs.

The PEC will use water from on-site wells for cooling tower makeup, evaporative inlet air cooler makeup, turbine combustor water injection, fire and service water and safety and sanitary water. Potable water for drinking will be provided by a bottled water supplier (Ex. 1, §§ 1.2.4, 3.1, 3.4.7, 3.11.7.2; Ex. 100, p. 5.4-4.) Storage tanks for demineralized water and for raw water/fire water storage will allow the plant up to twelve hours operation in case of an interruption in water supply. (Ex. 1, §§ 3.5.5, 3.11.5.4, 3.11.5.5; Table 3.4-1; Ex. 100, p. 5.4-4.)

The site is located in Seismic Zone 4. (Ex. 1, § 3.3.2.2.) The PEC will be designed and constructed to comply with current applicable LORS for seismic design. These standards improve seismic stability compared with older power plants, and ensure that the project will perform at least as well as existing plants

in the electrical system. (Ex. 100, p. 5.4-5.) The Conditions of Certification in the **FACILITY DESIGN** section of this Decision ensure that the project will conform with seismic design LORS.

Applicant predicts the project will have an annual availability factor of 95 to 99 percent. Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council (NERC), show an equivalent availability factor of 90.82 percent for gas turbine units of all sizes. (Ex. 100, p. 5.4-5.) The project's predicted availability factor appears reasonable compared to the NERC figure for similar plants in North America. (Ex. 100, p. 5.4-6.) The four parallel gas turbine generating trains will allow maintenance to be scheduled when full plant output is not required. Finally, the evidence shows that the procedures for design, procurement, and construction are in keeping with industry norms and will likely result in an adequately reliable plant. (Ex. 100, p. 5.4-3.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings:

1. Implementation of Quality Assurance/Quality Control 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.

2. Adequate fuel and water capacity are available for project operations.

3. The Panoche Energy Center consists of four combustion turbine generators operating in parallel as independent equipment trains. This configuration provides inherent reliability.

4. The project's estimated 95 to 99 percent availability factor is consistent with industry norms for power plant reliability.

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

We therefore conclude that the project will be constructed and operated in accordance with typical power industry norms for reliable electricity generation. No Conditions of Certification are required for this topic. To ensure implementation of the QA/QC programs and conformance with seismic design criteria as described above, appropriate Conditions of Certification are included in the **FACILITY DESIGN** portion of this Decision.

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. Resources 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. In addition, the Commission 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 not licensed by the Commission. The record indicates that the parties in this case accurately identified all necessary interconnection facilities, including facilities affected by the project beyond the first point of interconnect to the grid.

The California Independent System Operator (CAISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. The Commission works in conjunction with the CAISO in assessing a project's potential impacts of connecting to the electricity grid. The California ISO reviews a utility System Impact Study (SIS), provide its analysis, conclusions and recommendations, and issues a preliminary approval or concurrence letter to PG&E, the local system utility.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Description

Each of the PEC's generators would be connected to a dedicated 75/100/125 MVA generator step up (13.8/230 kV) transformer. Two Generation Units (numbers One and Three) would interconnect to the transformers through circuit breakers and the remaining two units (numbers Two and Four) would directly tie

into the low side of the generator dedicated step up transformers. The high voltage side of each transformer would be connected to the PEC switchyard. The auxiliary power would be provided through a back-fed transformer which is connected to Generators Unit One and Three.

The PEC switchyard would consist of a 230-kV single strain bus with disconnect switches on each side of the circuit breaker. The switchyard would be connected to the PG&E's Panoche Substation via a new three phase 230-kV overhead transmission line. Power would be distributed to the grid via transmission lines from the Panoche Substation. (Ex. 100, p. 5.5-4.)

The new 300-foot long, 795 kcmil ACSS transmission line would require two dead-end take off support structures to interconnect the PEC to the existing Panoche Substation. The Panoche Substation would require extension on the south side for about 320 feet by 300 feet for two new 230-kV bays and for the relocation of the Gates-Panoche Line #1 and Line #2. The PEC generation-tie line would be interconnected to a location vacated by these lines. New bus sectionalizing breakers and a new bus parallel breaker would be installed to accommodate the addition of PEC. (Ex. 1, §§ 1, 3, 3.4.5, 3.6; Ex. 5.)

2. Study Results

PG&E performed the SIS for the Applicant to identify the transmission system impacts caused by the PEC project on PG&E's 230 kV system. The SIS included a Power Flow Study, Short Circuit Study, and Dynamic Stability Analyses (Ex. 100, p. 5.5-5.) Because of discrepancies between the SIS and a later Interconnection System Impact Re-study (ISIR), the CAISO directed PG&E to conduct another study, the Interconnection Facilities Re-study (IFAR). The IFAR describes the extent and costs for the facilities needed to connect the project to the CAISO Controlled Grid. (Ex. 47, p. 1.)

Staff testimony summarized the results of the Power Flow Study and identified the various system overloads attributable to the PEC. Staff also summarized the mitigation measures for overloads which would be the responsibility of projects that are ahead of the PEC in the California ISO's generation interconnection queue. (Ex. 100, pp. 5.5-6 to 5.5-8.) Included in the mitigation measures is the requirement to reconductor the one-mile long Wilson–Gregg 230 kV transmission line with conductors capable of handling 850 Amps or higher. The work would be done using helicopters and ground vehicles in developed orchards or on existing dirt access roads. No soil excavation, grading, soil disturbance, or vegetation removal is required. (Ex. 5, RECON-2, RECON-13.) No special status plant or wildlife species were observed during a survey of the potentially affected area. (Ex. 5, Data Response 61 Rev, RECON-7.) No cultural resources were discovered during records searches and a field survey of the area. (Ex. 5, Data Response 65 Rev.)

Short circuit studies were performed to determine the degree to which the addition of the PEC project increases fault duties at PG&E's substations, adjacent utility substations, and the other 115 kV and 230 kV busses within the study area. The Short Circuit Study indicates that the addition of the PEC would increase the fault currents of the three circuit breakers at the Panoche Substation. The mitigation would require a replacement of one 115 kV and two 230 kV circuit breakers within the fence line of the Panoche Substation. The remaining breakers of the substations are adequate enough to withstand the post project incremental fault currents anticipated by the Short Circuit Study.

Dynamic Stability studies for PEC were conducted using 2010 summer peak full loop base case to determine if the PEC would create any adverse impact on the stable operation of the transmission grid following selected N-1 and N-2 outages. The results indicate there are no adverse impacts on the stable operation of the transmission system following the disturbances assumed in the study. (Ex. 100, p. 5.5-8.)

Based on its review of the various studies, Staff determined that the project interconnection would comply with NERC/WECC planning standards and California ISO reliability criteria. The applicant will design, build and operate the proposed 230 kV overhead transmission line. The proposed modifications to the Panoche Substation would be made by PG&E.

FINDINGS AND CONCLUSIONS

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

1. The record includes a System Impact Study (SIS) which analyzes potential reliability and congestion impacts that would occur when the PEC interconnects to the grid.

2. The SIS identified pre-project overloads in the transmission system which the addition of the PEC will exacerbate.

3. The SIS indicates that one mile of the Wilson-Gregg 230-kV line requires reconductoring.

4. The SIS was revised by the IFAR prepared by PG&E under the direction of the CAISO. The IFAR provides mitigation measures for the overloaded circuits along with their estimated cost. The IFAR also provides an option to employ Special Protection System (SPS) as a means to mitigate overloads.

5. The record contains a general analysis of the reconductoring, sufficient to address CEQA requirements for indirect project impacts.

6. Other adverse transmission system impacts can be mitigated by installation of Special Protection Schemes (SPS), operating procedures, disconnect switches, and replacement of breakers.

7. Dynamic Stability studies conducted for PEC indicated that the project will have no adverse impacts on the stable operation of the transmission system.

8. A Short Circuit Study demonstrated that the PEC would increase the fault currents of three circuit breakers at the Panoche Substation. Condition of Certification **TSE-5** mitigates this impact.

9. Necessary modifications to the Panoche Substation will be carried out by PG&E.

10. The SIS indicates that the project interconnection will comply with NERC/WECC planning standards and California ISO reliability criteria.

11. The proposed interconnecting facilities between the new Combustion Turbine Generators and the PG&E Panoche Substation meet applicable LORS.

12. The Conditions of Certification below are adequate to ensure the PEC does not adversely impact the transmission grid.

13. The CAISO has approved the PEC to interconnect to the CAISO Controlled Grid after making the required system upgrades.

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 Panoche Energy Center 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 furnish to the Compliance Project Manager (CPM) and to the Chief Building Official (CBO) a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

Verification: 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 of the

transmission and interconnection facilities, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major equipment in **Table 1: Major Equipment List** below). Additions and deletions shall be made to the table only with CPM and CBO approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

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

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following 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. (Business and Professions Code Sections 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 submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

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

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action. (2007 California Building Code, Appendix Chapter 1, Section 109.6, Approval Required; Chapter 17, Section 1704.1.2, Report Requirement. The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval and shall reference this Condition of Certification.

Verification: The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, 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 not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

1. receipt or delay of major electrical equipment;

2. testing or energization of major electrical equipment; and

3. the number of electrical drawings approved, submitted for approval, and still to be submitted.

Verification: 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 submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

1. The existing Panoche Substation will require expansion and upgrades to accommodate the addition of the PEC.

    a. The Substation will require expansion for about 300 by 320 feet.

    b. Install a pair of bus sectionalizing breakers to split the busses into two double-bus sections.

    c. Install one 230 kV bus parallel breaker on the north side using the existing spare bay.

    d. Adding two new 230 kV bays for the relocation of the Gates-Panoche #1 and #2 230 kV lines.

    e. Protection requirements will consist of a fully redundant, double-pilot current differential scheme for the generation tie line, four current transformers and protective relays replacement.

2. The PEC would be interconnected to the Panoche Substation via a single 230 kV transmission line approximately 300 feet long with 795 kcmil ACSS conductor or conductor with a higher rating.

3. The power plant outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code 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.

4. Breakers and busses in the power plant switchyard and other switchyards, where applicable, shall be sized to comply with a short-circuit analysis.

5. 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.

6. The project conductors shall be sized to accommodate the full output from the project.

7. Termination facilities shall comply with applicable PG&E interconnection standards.

8. The project owner shall provide to the CPM:

   a. The final Detailed Facility Study (DFS) including a description of facility upgrades, operational mitigation measures, and/or Special Protection System sequencing and timing if applicable,

   b. Executed project owner and California ISO Facility Interconnection Agreement,

9. A request for minor changes to the facilities described in this Condition may be allowed if the project owner informs the CBO and CPM and receives approval for the proposed change. 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.

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 submit to the CBO for approval:

1. Design drawings, specifications, and calculations conforming with 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, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment.

2. For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions[6]" [footnote: Worse-case conditions for the foundations would include for instance, a dead-end or angle pole], and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 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.

3. 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** 1 through 9, above.

4. The final DFS, including a description of facility upgrades, operational mitigation measures, and/or SPS sequencing and timing if applicable, shall be provided concurrently to the CPM.

5. At least 60 days prior to the construction of transmission facilities, the project owner shall inform the CBO and the CPM of any impending changes which may not conform to the facilities described in this Condition and request approval to implement such changes.

TSE-6 The project owner shall provide the following Notice to the California Independent System Operator prior to synchronizing the facility with the California transmission system:

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

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

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

Verification: The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week prior to initial synchronization with the grid. The project owner shall contact the California ISO Outage Coordination Department, Monday through Friday, between the hours of 0700 and 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

TSE-7 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction, and any subsequent CPM and CBO approved changes thereto, to ensure conformance with CPUC 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. In case of non-conformance, the project owner shall inform the CPM and CBO in writing, within 10 days of discovering such non-conformance and describe the corrective actions to be taken.

Verification: Within 60 days after first synchronization of the project, the project owner shall transmit to the CPM and CBO:

1. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC 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. 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".

3. 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 project's transmission lines must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This section summarizes the analysis of potential impacts of the transmission tie-line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electromagnetic field exposure.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The PEC will be interconnected to the PG&E electric transmission grid through a new 300-foot, overhead 230-kV transmission line connecting the facility with the adjacent PG&E Panoche Substation. The site and the tie-line would be located within the PEC site and the PEC property boundaries that are in an agricultural area with no nearby residences within 500 feet.

The specific associated transmission components are:

- An overhead 230-kV line extending approximately 300 feet from the project's 230-kV switchyard to the connection point at PG&E's Panoche Substation immediately to the northeast; and
- The project's on-site 230-kV switchyard from which the conductors would extend to the connection points at the Panoche Substation, which would be expanded to accommodate the added power.

The proposed line's conductors would be standard low-corona 795 aluminum steel reinforced cables erected on H-or A-frame-type support structures, which would allow for a 50-ft clearance from the ground. The applied design and construction would be in keeping with similar PG&E lines.

The line would exit from the northeast corner of the project site and run northeast for approximately 300 feet to the connection points within the Panoche

Substation. There would be no public access to the proposed line or related switchyard since the line would be within the property boundaries of PEC and the and Panoche Substation which connects other area 115 kV and 230 kV lines to the PG&E transmission grid. (Ex. 100, p. 4.11-1 - 4.11-4.)

1. Potential Impacts

Aviation Safety. Any potential hazard to area aircraft would relate to the potential for collision in the navigable airspace. The nearest large public airport is in Fresno, approximately 50 miles away. A small public general aviation airport, in Firebaugh (Firebaugh Airport) is located approximately 24 miles away.[7] Lemoore Naval Air Station is approximately 40 miles southeast of the project. The evidence indicates that the proposed line structures will not pose an obstruction-related aviation hazard to area aircraft as defined using current FAA criteria. Therefore, no FAA "Notice of Construction or Alteration" would be required.

The height of the proposed line support towers would, at 65 feet, be much shorter than the 200 feet regarded by the FAA as triggering a concern about aviation safety. The line would be in an area with several other PG&E lines, some of which are of similar voltage and structural dimensions. (Ex. 100, p. 4.11-4.)

Interference with Radio-Frequency Communication and Audible Noise. Transmission line-related radio-frequency interference is due to the radio noise produced by the action of the electric fields on the surface of the energized conductor. The level of any such interference usually depends on the magnitude

[7] Although not mentioned in Staff's analysis of this topic, Eagle field, a private airport, is approximately 14 miles to the north of the project site. Its flight pattern is not expected to bring aircraft over the project site at altitudes low enough to create any safety concerns. (Ex. 100, p. 4.10-3, 4.10-9.)

of the electric fields involved and the distance from the line. The potential for such impacts is, therefore, minimized by reducing the line electric fields and locating the line away from inhabited areas.

The proposed line will use low-corona designs to reduce surface-field strengths and the related potential for corona effects. The evidence shows that similar existing lines do not currently cause the corona-related complaints along existing routes, so there should not be any corona-related radio-frequency interference or related complaints in the general project area. However, Condition of Certification **TLSN-2** will ensure mitigation as required by the FCC in the unlikely event of complaints. (Ex. 100, p. 4.11-5.)

Fire Hazards. Fire hazards include fires that could be caused by sparks from conductors of overhead lines, or result from direct contact between the line and nearby trees and other combustible objects. Standard fire prevention and suppression measures for similar lines will be implemented for the proposed project line. Condition of Certification **TLSN-4** will ensure compliance with important fire prevention measures. (Ex. 100, p. 4.11-6.)

Hazardous Shocks. Hazardous shocks are those that could result from direct or indirect contact between an individual and the energized line, whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force in the design and operation of transmission and other high-voltage lines. The evidence establishes that compliance with California Public Utilities Commission (CPUC) GO-95, as required by Condition of Certification **TLSN-1**, will satisfactorily mitigate any hazard. (Ex. 100, p. 4.11-6.)

Nuisance Shocks. Nuisance shocks are caused by current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. The potential for nuisance shocks around the proposed line will

be minimized through standard industry grounding practices. Condition of Certification **TLSN-5** will ensure such grounding. (Ex. 100, p. 4.11-6 - 4.11-7.)

Electric and Magnetic Field (EMF) Exposure. The possibility of deleterious health effects from exposure to electric and magnetic fields (EMF) has raised public health concerns about living near high-voltage lines. While the available evidence has not established that such fields pose a significant health hazard to exposed humans, neither does it serve as proof of a definite lack of a hazard.

While there is considerable uncertainty about EMF health effects, the following facts have been established from the available information:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.
- The measures employed for such field reduction can affect line safety, reliability, efficiency, and maintainability, depending on the type and extent of such measures.

Field intensities are estimated or measured for a height of one meter above the ground, in units of kilovolts per meter (kV/m) for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the support structures, degree of cancellation from nearby conductors, distance between conductors, and in the case of magnetic fields, amount of current in the line.

Specific field strength-reducing measures are incorporated into power line designs to ensure the field strength minimization currently required by the CPUC in light of the concern over EMF exposure and health. These reduction measures may include the following:

- 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 of conductor fields.

Since optimum field-reducing measures will be incorporated into the proposed line design, further mitigation will be unnecessary. Under Condition of Certification **TLSN-3,** however, validation of assumed reduction efficiency from the field strength measurements will be required. (Ex. 100, p. 4.11-7 - 4.11-9.)

FINDINGS AND CONCLUSIONS

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

1. The proposed lines and related facilities are not close enough to the nearest airport to pose an aviation hazard according to current FAA criteria.

2. The long-term, mostly residential magnetic exposure from the proposed line would be insignificant as a health concern given the general absence of residences along the proposed route. On-site worker or public exposure would be short term and at levels expected for lines of similar design and current-carrying capacity. Such exposure is well understood and has not been established as posing a significant human health hazard.

3. The potential for nuisance shocks will be minimized through grounding the project's lines and other field-reducing measures required by standard industry practices.

4. Grounding minimizes the potential for audible corona noise and its related interference with radio-frequency communication.

5. The Conditions of Certification reasonably ensure that the project's transmission tie-line will not have significant environmental impacts on public health and safety, nor cause impacts in terms of, radio/TV communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or electromagnetic field exposure.

We therefore conclude that with implementation of the Conditions of Certification the project will conform with all applicable laws, ordinances, regulations, and standards relating to Transmission Line Safety and Nuisance.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission lines 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 thirty days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the condition.

TLSN-2 The project owner shall ensure that every reasonable effort will be made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the 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 plant operation together with the corrective action taken in response to each complaint. All complaints shall be recorded to include notations on the corrective action taken. Complaints not leading to a specific action or for which there was no resolution should be noted and explained. The record shall be signed by the project owner and also the complainant, if possible, to indicate concurrence with the corrective action or agreement with the justification for a lack of action.

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 hire a qualified consultant to measure the strengths of the electric and magnetic fields from the line before and after it is energized. The measurements shall be made according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures at the locations of maximum field strengths along the proposed route. 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 and measurements with the CPM within 60 days after completion of the measurements.

TLSN-4 The project owner shall ensure that the rights-of-way of 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 right-of-way and provide such summaries in the Annual Compliance Report.

TLSN-5 The project owner shall ensure that all permanent metallic objects within the right-of-way of the project-related lines are grounded according to industry standards regardless of ownership. In the event of a 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 ASSESSMENT

Operation of the PEC will create combustion products and utilize certain hazardous materials that could potentially cause adverse health effects to the general public and to the workers at the facility. The following sections describe the regulatory programs, standards, protocols, and analyses that address these issues.

A. AIR QUALITY

This section examines the potential adverse impacts of criteria air pollutant emissions resulting from project construction and operation. In consultation with the local air pollution control district, the 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.

Applicant and Staff reached agreement on all relevant issues, including the Conditions of Certification following this narrative.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Federal Clean Air Act and the California Clean Air Act both require the establishment of standards for ambient concentrations of air pollutants, called ambient air quality standards (AAQS). The state AAQS, established by the California Air Resources Board (CARB), are typically lower (more protective) than the federal AAQS which are established by the U.S. EPA. The state and federal air quality standards are listed in **AIR QUALITY Table 1**.

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O_3)	8 Hour	0.08 ppm (157 μg/m^3)	0.070 ppm (137 μg/m^3)
	1 Hour	—	0.09 ppm (180 μg/m^3)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	0.053 ppm (100 μg/m^3)	— [a]
	1 Hour	—	0.25 ppm (470 μg/m^3) [a]
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	0.030 ppm (80 μg/m^3)	—
	24 Hour	0.14 ppm (365 μg/m^3)	0.04 ppm (105 μg/m^3)
	3 Hour	0.5 ppm (1300 μg/m^3)	—
	1 Hour	—	0.25 ppm (655 μg/m^3)
Respirable Particulate Matter (PM10)	Annual Arithmetic Mean	—	20 μg/m^3
	24 Hour	150 μg/m^3	50 μg/m^3
Fine Particulate Matter (PM2.5)	Annual Arithmetic Mean	15 μg/m^3	12 μg/m^3
	24 Hour	35 μg/m^3	—
Sulfates (SO_4)	24 Hour	—	25 μg/m^3
Lead	30 Day Average	—	1.5 μg/m^3
	Calendar Quarter	1.5 μg/m^3	—
Hydrogen Sulfide (H_2S)	1 Hour	—	0.03 ppm (42 μg/m^3)
Vinyl Chloride (chloroethene)	24 Hour	—	0.01 ppm (26 μg/m^3)
Visibility Reducing Particulates	8 Hour	—	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70%.

Source: Ex. 100, p. 4.1-5.

[a] ARB has approved a revised 1-hour standard for NO_2 (0.18 ppm or 338 ug/m^3) and a new annual standard for NO_2 (0.030 ppm or 56 ug/m^3); however, these standards have not yet been officially approved by the Office of Administrative Law.

In general, an area is designated as attainment if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as non-attainment for an air contaminant if that contaminant standard is violated. Where not enough ambient data are available to support designation as either attainment or non-attainment, the area can be designated as unclassified. An area could be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same air contaminant.

The PEC is located within the San Joaquin Valley Air Basin (SJVAB) and under the jurisdiction of the San Joaquin Valley Air Pollution Control District (District). This area is designated as nonattainment for both the federal and state ozone PM10 and PM2.5 standards. Air Quality Table 2 summarizes federal and state attainment status of criteria pollutants for the SJVAB.

AIR QUALITY Table 2
Federal and State Attainment Status for the San Joaquin Valley Air Basin

Pollutant	Attainment Status	
	Federal	State
Ozone	Serious Nonattainment (8-hr)	Severe Nonattainment (1-hr)
PM10	Serious Nonattainment	Nonattainment
PM2.5	Nonattainment	Nonattainment
CO	Unclassified/Attainment [a]	Attainment
NO_2	Unclassified/Attainment [a]	Attainment
SO_2	Attainment	Attainment

Source: ARB 2007b, U.S. EPA 2007.
[a] Unclassified/Attainment – The attainment status for the subject pollutant is classified as either attainment or unclassified.

The nearest air quality monitoring station with a long-term record of all the criteria pollutants, except SO_2, is the Fresno First Street Station, located at 3425 North First Street, approximately 46 miles northeast of the project site. This station monitors ambient concentrations of lead, ozone, NO_2, CO, PM10, and PM2.5. The Fresno Fremont School Station, approximately 43 miles east northeast of the project site, is the closest station that most recently monitored SO_2. Using

monitoring data from the Fresno stations to characterize conditions at the project site would generally overestimate existing pollutant levels at PEC because of the much lower population and level of development of the project area compared to the urban areas of Fresno.

Air Quality Figure 1 summarizes the historical air quality data for the project location, recorded at Fresno First Street (1990-2006 for ozone, CO, NO_2, PM10; 1999-2006 for PM2.5; 1990-1997 for SO_2), and Fresno Fremont School (2003 for SO_2) air monitoring stations. In **Air Quality Figure 1**, the short term normalized concentrations are provided from 1990 to 2006. Normalized concentrations represent the ratio of the highest measured concentrations in a given year to the most-stringent applicable national or state ambient air quality standard. Therefore, normalized concentrations lower than one indicate that the measured concentrations were lower than the most-stringent ambient air quality standard.

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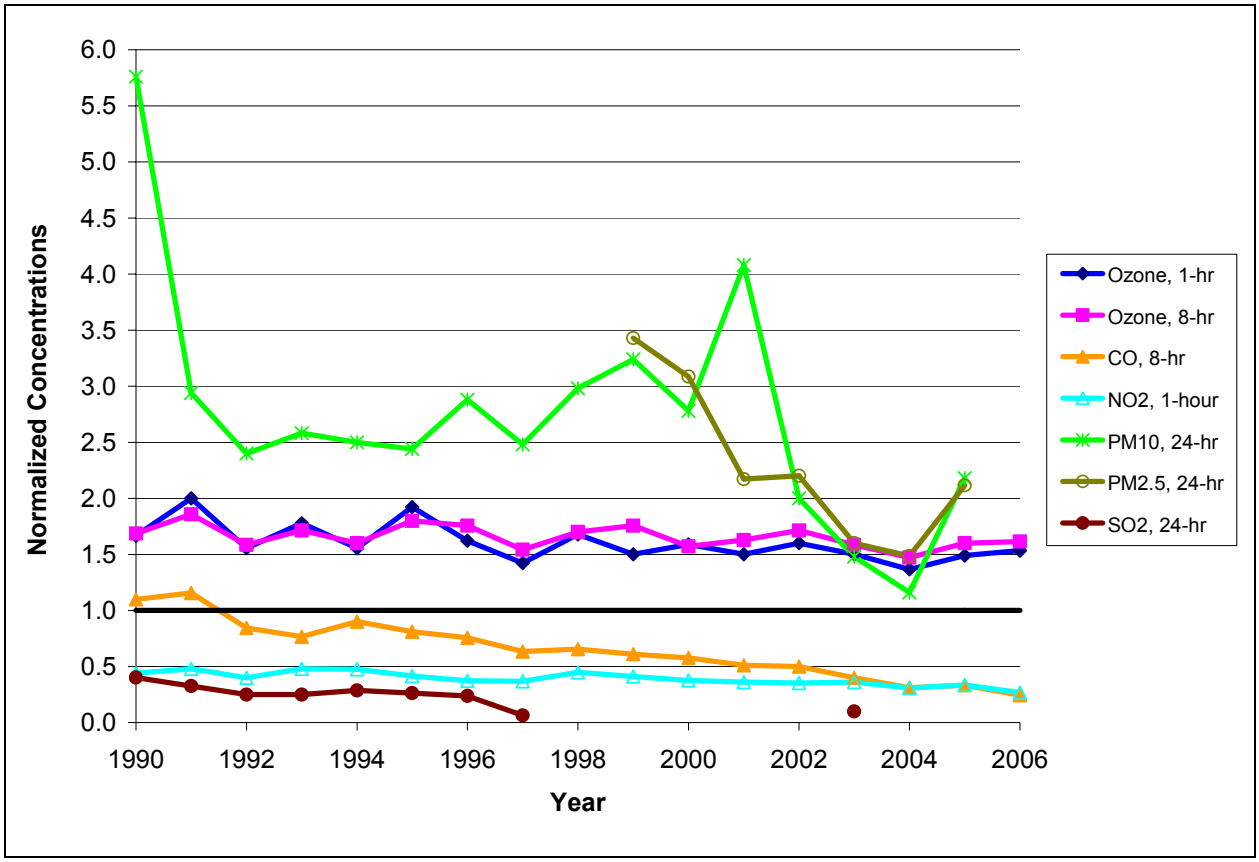
AIR QUALITY Figure 1
Normalized Maximum Short-Term Historical Air Pollutant Concentrations
Fresno First Street (1990-2006), and Fresno Fremont School (2003 - SO_2 only)



Source: Ex. 100, p. 4.1-7

Construction emissions. Construction of the PEC will involve: 1) Injection and production well installation (three months total); 2) clearing and grubbing, removal of pomegranate trees (one month); 3) site grading (2 months); 4) building of facility structures (10 months); 5) gas pipeline construction (one month that overlaps with building of facility structures); and 6) substation improvement (5 months that overlaps for three months with building of facility structures). The construction is expected to take a total of 18 months, based on an 8-hour workday and a 5-day workweek.

Fugitive dust emissions during the construction of the project would result from dust entrained during site preparation and grading/excavation activities, on-site travel on paved and unpaved surfaces, and aggregate and soil loading and unloading operations, as well as wind erosion of areas disturbed during construction activities. The largest fugitive dust emissions are generated during site preparation activities, where work such as clearing, grading, excavation of footings and foundations, and backfilling operations occur. These types of activities require the use of large earth moving equipment, which generate combustion emissions, along with creating fugitive dust emissions. The site has very fine soils that will exacerbate fugitive dust formation potential during site grading activities.

Combustion emissions during the construction of the project result from exhaust sources, including diesel construction equipment, diesel-powered welding machines, electric generators, air compressors, water pumps, diesel trucks used for deliveries, and automobiles and trucks used by workers to commute to and from the construction site.

The Applicant estimates that the maximum short-term emissions for the injection well installation will occur in Month 1 and for the site preparation phase in Months 5 and 6 of the project construction schedule. Maximum emissions from the building of the facility structures are expected to occur between Months 7 and 16. Fugitive dust emissions resulting from onsite soil disturbances, such as bulldozing and grading, and from onsite and offsite traffic were estimated. A dust control efficiency of 85% was assumed to be achieved for these activities based on frequent watering.

Air Quality Table 3, below, shows the construction emissions impacts on short-term ambient standards:

AIR QUALITY Table 3

PEC Construction Impacts, (µg/m^3)

Pollutant	Averaging Period	Project Impact (µg/m^3)	Background (µg/m^3)	Total Impact (µg/m^3)	Limiting Standard (µg/m^3)	Type of Standard	Percent of Standard
NO_2	one-hour	291.2	157.9	449.1	470	CAAQS	96
	annual	8.9	32.1	41	100	NAAQS	41
PM10	24-hour	46.3	109	155.3	50	CAAQS	311
	annual	1.3	35	36.3	20	CAAQS	182
PM2.5	24-hour	19.0	69	88	35	NAAQS	251
	annual	0.66	19.7	20.4	12	CAAQS	170
CO	one-hour	1,114.8	4,715	5,830	23,000	CAAQS	25
	eight-hour	870.2	3,278	4,148	10,000	CAAQS	41
SO_2	one-hour	4.7	23.6	28.3	655	CAAQS	4
	three-hour	2.4	21.2	23.6	1,300	NAAQS	2
	24-hour	0.7	10.5	11.2	105	CAAQS	11
	annual	0.01	5.3	5.3	80	NAAQS	7

Source Ex. 100, p. 4.1-28.

The project, then, has the potential to worsen existing violations of the PM10 and PM2.5 air quality standards during its construction.

Construction emissions will be reduced to the minimum feasible levels by the project owner's compliance with Staff's recommended construction mitigation measures set forth in Conditions of Certification **AQ-SC1 – AQ-SC5**, which require, among other things, employment of an Air Quality Construction Mitigation Manager (**AQ-SC1**), preparation of a Air Quality Construction Mitigation Plan (**AQ-SC2**), construction fugitive dust control measures (**AQ-SC3-4**), and controls on diesel-fueled engines (**AQ-SC5**). Taking into account this mitigation and that these construction impacts are relatively short-term, Staff and the Applicant believe that they do not constitute significant environmental impacts.

Operation emissions. The PEC will use four stationary, natural gas-fired General Electric LMS100 combustion turbines for power production. The CTGs would generate an average of 400 MW (100 MW each) at summer design ambient conditions. Each turbine could operate up to 5,000 hours per year, as required by PG&E, which equates to a maximum annual capacity factor of 57% (Ex. 1, p. 3-54).

The exclusive use of pipeline-quality natural gas, a relatively clean-burning fuel, would limit the formation of VOC, PM10, and SO2 emissions. Water injection to the CTG combustors in conjunction with selective catalytic reduction (SCR) would be used to control NOx concentrations in the exhaust gas. The SCR system would use aqueous ammonia to further reduce NOx emissions to 2.5 parts per million by volume, dry (ppmvd) adjusted to 15% oxygen from the gas turbines/SCR systems. Ammonia slip would be limited to 10 ppmvd at 15% oxygen on a dry basis. An oxidizing catalytic converter would be used to reduce the CO concentration in the exhaust gas emitted to the atmosphere to 6 ppmvd adjusted to 15% oxygen from the CTGs. Particulate emissions would be controlled using natural gas as the sole fuel for the CTG and inlet air filtration (Ex. 1, p. 3-24). These emission controls constitute the Best Available Control Technology (BACT), required under state federal and District regulations. (Ex. 100, pp. 4.1-2 – 4.1-3, 4.1-23.)

Four 90-foot-tall, 14.5-foot diameter stacks would release the CTG exhaust gas into the atmosphere. A continuous emission monitoring (CEM) system would be installed on the CTG stack to monitor NOx and CO concentration levels and percentage of oxygen in the flue gas to assure adherence with the proposed emission limits. The CEM system would also monitor fuel gas flow rates, generate reports of emissions data in accordance with permit requirements, and send alarm signals to the plant's control room when the level of emissions approaches or exceeds pre-selected limits.

Air emissions from the diesel-driven firewater pump will be minimized by the use of a California Air Resources Board compliant low emission diesel engine fueled with ARB compliant diesel fuel. (Ex. 1, p. 4.1-23.)

The District issued its Final Determination of Compliance (Ex. 13), which finds the project in compliance with District rules and regulations and sets the following BACT emission limits for the CTGs:

- NOx: 2.5 ppmvd at 15% O_2 (one-hour average, excluding startup/shutdown) and 8.03 lb/hr
- CO: 6.0 ppmvd at 15% O_2 (3-hr rolling average, excluding startup/shutdown) and 11.81 lb/hr
- VOC: 2.0 ppmvd at 15% O_2 and 2.67 lb/hr
- PM10: 6.00 lb/hr
- SO_2: 2.51lb/hr with fuel sulfur content of 1.0 grains/100 scf
- NH_3 (ammonia slip): 10 ppmvd at 15% O_2 (24-hour rolling average) and 11.90 lb/hr

The cooling tower will control PM10 emissions by having a high efficiency mist eliminator that will control the drift fraction to 0.0005%. The firewater pump engine is proposed to meet ARB/U.S. EPA Tier 2 engine standards (Ex. 100, pp. 4.1-33 – 4.1-34).

Air emissions which remain after the application of the above controls (**Air Quality Table 4**) will be mitigated by the surrender of emission reduction credits (offsets) in the amounts summarized in **Air Quality Table 5**.

AIR QUALITY Table 4

PEC Normal Operating Impacts, (µg/m^3)

Pollutant	Averaging Period	Project Impact (µg/m^3)	Background (µg/m^3)	Total Impact (µg/m^3)	Limiting Standard (µg/m^3)	Type of Standard	Percent of Standard
NO_2	one-hour	136.0	157.9	293.9	470	CAAQS	63
	annual	0.12	32.1	32.2	100	NAAQS	32
PM10	24-hour	2.83	109	111.8	50	CAAQS	224
	annual	0.52	35	35.5	20	CAAQS	178
PM2.5	24-hour	2.83	69	71.8	35	NAAQS	205
	annual	0.52	19.7	20.2	12	CAAQS	169
CO	one-hour	350.72	4,715	5,066	23,000	CAAQS	22
	eight-hour	192.57	3,278	3,471	10,000	CAAQS	35
SO_2	one-hour	2.10	23.6	25.7	655	CAAQS	4
	three-hour	1.57	21.2	22.8	1,300	NAAQS	2
	24-hour	0.57	10.5	11.1	105	CAAQS	11
	annual	0.02	5.3	5.3	80	NAAQS	7

Source: Ex. 100, p. 4.1-31

AIR QUALITY Table 5

PEC District Offset Calculations (lb/year)

Offset Need Determination	NOx	VOC	PM10	SO_2	CO [b]
PEC Emissions [a]	193,860	60,696	121,762	50,200	371,000
Offset Threshold	20,000	20,000	29,200	54,750	200,000
Emissions Above Threshold	173,860	40,696	92,562	---	---
Offsets Triggered?	**Yes**	**Yes**	**Yes**	**No**	**No**
Offset Amount Calculations					
Required Offset Ratio	1.5	1.5	1.5	---	---
PEC ERCs Required	260,790	61,044	138,843	---	---

Source: Ex.100, p. 4.1-34.

[a] PEC annual emissions do not include emergency equipment which is exempt from District Offset requirements.

[b] Emission offsets are not required for CO in attainment areas since the Applicant has demonstrated to the satisfaction of the Air Pollution Control Officer (APCO) that the AAQS are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of the AAQS.

The Applicant has been unable to obtain PM10 credits in a sufficient amount to fully meet its offset obligations for PM10 and has proposed to use SOx credits to make up the remaining amount. SOx is accepted as one of the major precursors of PM10 and PM2.5 through reaction with ammonia to form ammonium sulfates. Reductions in SO2, particularly in areas that are ammonia rich such as the SJVAB, will reduce secondary particulate formation. Therefore, interpollutant offsets of SOx for PM10 can be used to reach the goal of mitigating a project's particulate emissions. The District approved a 1.867:1 SOx for PM10 interpollutant ratio. (Ex. 12, Appendix D, Attachment 2.) When combined with the 1.5:1 distance ratio, the Applicant will provide SOx for PM10 at a 2.8:1 ratio. (Ex. 100, p. 4.1-37, Air Quality Table 25, note b.)

Though not required by District rules, Staff recommended as part of its environmental analysis, and the Applicant has agreed to mitigate its SO_2 emissions by the surrender of additional SO_2 ERCs. (Ex. 100, p. 4.1-38.)

During the Evidentiary Hearing, Errol Villegas of the District certified on behalf of the District pursuant to Public Resources Code Section 25523(d)(2) 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." (RT, p. 16.) The specific ERC Certificates are identified by number in, and required to be surrendered by, Condition of Certification **AQ-81**.

The generation of electricity can produce air emissions known as greenhouse gases in addition to the criteria air pollutants. Greenhouse gases are known to contribute to the warming of the earth's atmosphere. These include primarily carbon dioxide, nitrous oxide (N_20, not NO or NO_2, which are commonly know as NOx or oxides of nitrogen), and methane (unburned natural gas). Also included are sulfur hexafluoride (SF_6), hydrofluorocarbons (HFCs), and perfluorocarbons (PFCs) from transformers and chillers.

Climate change from rising temperatures represents a risk to California's economy, public health, and environment. In 2003, the Energy Commission recommended that the state require reporting of greenhouse gas emissions as a condition of state licensing of new electric generating facilities.

The California Global Warming Solutions Act of 2006 (AB32) requires the ARB to adopt a statewide greenhouse gas emissions limit equivalent to the statewide GHG emissions levels in 1990 to be achieved by 2020. To achieve this, ARB has a mandate to adopt rules and regulations to achieve the maximum technologically feasible and cost-effective GHG emission reductions. By January 1, 2008, ARB is scheduled to adopt regulations requiring mandatory GHG emissions reporting and define the statewide GHG emissions cap for 2020. ARB would adopt a plan by January 1, 2009 that would indicate how emission reductions would be achieved from significant sources of GHGs via regulations, market mechanisms, and other actions. Strategies that the state might pursue for managing GHG emissions in California are identified in the California Climate Action Team's Report to the Governor. Some strategies focus on reducing consumption of petroleum across all areas of the California economy. Improvements in transportation energy efficiency (fuel economy) and land use planning and alternatives to petroleum-based fuels are slated to provide substantial reductions by 2020. (Ex. 100, p. 4.1-47 – 4.1-48.)

We adopt Staff recommended Condition of Certification **AQ-SC8**, which requires the project owner to report the quantities of relevant greenhouse gases emitted. The project will comply with future ARB and other standards relating to greenhouse gases as they become applicable.

Cumulative Impacts. Staff examined the combined effects of the existing Cal Peak Power Panoche and Wellhead Power Panoche peaking power plants along with the PEC and the Starwood Power Plant also under review by the Energy Commission (06-AFC-10). Staff concluded that, with the imposition of

construction and operation mitigation measures such as those adopted below for this project, which are also proposed for Starwood, PEC will not cause significant cumulative impacts. (Ex. 100, p. 4.1-39 – 4.1-45.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. The proposed PEC is located within the jurisdiction of the San Joaquin Valley Air Pollution Control District.

2. The District is classified as non-attainment for the state 1-hour and federal 8-hour ozone, the state 24-hour and annual and federal 24-hour $PM_{10,}$ standards and the state and federal $PM_{2.5}$ standards. The District meets applicable standards for all other criteria pollutants.

3. The project will employ the best available technology (BACT) to control emissions of criteria pollutants.

4. Project nonattainment and nonattainment precursor criteria pollutant emissions will be fully offset.

5. Use of emission reduction credits in this case is appropriate, and is consistent with applicable federal and state emission control strategies.

6. The District issued a Final Determination of Compliance that finds the PEC will comply with all applicable District rules for project operation.

7. The project's construction-related impacts are temporary and short-term in nature. They are mitigated to below a level of significance by measures identified in the Conditions of Certification.

8. The record contains an adequate analysis of the project's contributions to cumulative air quality impacts.

9. The project's offset package complies with Public Resources Code, section 25523(d)(2).

10. Implementation of the Conditions of Certification listed below ensures that the PEC will not result in any significant direct, indirect, or cumulative impacts to air quality.

The Commission therefore concludes that the mitigation measures imposed are sufficient to ensure that the PEC will conform with all applicable laws, ordinances, regulations, and standards relating 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 **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 CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM for approval, the name, resume, qualifications, and contact information for the on-site AQCMM and all AQCMM Delegates. The AQCMM and all Delegates must be approved by the CPM before the start of ground disturbance.

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide an AQCMP, for approval, which details the steps that will be taken and the reporting requirements necessary to ensure compliance with Conditions **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 CPM will notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance.

AQ-SC3 Construction Fugitive Dust Control: The AQCMM shall submit documentation to the CPM in each Monthly Compliance Report (MCR) that demonstrates compliance with the following mitigation measures for the purposes of preventing all fugitive dust plumes from leaving the project site and linear facility routes. Any deviation from the following mitigation measures shall require prior CPM notification and approval.

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered as frequently as necessary to comply with the dust mitigation objectives of AQ-SC4. The frequency of watering may be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 10 miles per hour within the construction site.

c) The construction site entrances shall be posted with visible speed limit signs.

d) All construction equipment vehicle tires shall be inspected and washed as necessary to be cleaned free of dirt prior to entering paved roadways.

e) Gravel ramps of at least 20 feet in length must be provided at the tire washing/cleaning station.

f) All unpaved exits from the construction site shall be graveled or treated to prevent track-out to public roadways.

g) All construction vehicles shall enter the construction site through the treated entrance roadways, unless an alternative route has been submitted to and approved by the CPM.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags or other measures as specified in the Storm Water Pollution Prevention Plan (SWPPP) to prevent run-off to roadways.

i) All paved roads within the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs to prevent the accumulation of dirt and debris.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept at least twice daily (or less during periods of precipitation) on days when construction activity occurs or on any other day when dirt or runoff from the construction site is visible on the public roadways.

k) 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.

l) All vehicles that are used to transport solid bulk material on public roadways and that have the 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.

m) Wind erosion control techniques (such as windbreaks, water, chemical dust suppressants, and/or vegetation) shall be used on all construction areas that may be disturbed. Any windbreaks installed to comply with this Condition shall remain in place until the soil is stabilized or permanently covered with vegetation.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this Condition, (2) copies of any complaints filed with the air district in relation to project construction, and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-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 (1) off the project site or (2) 200 feet beyond the centerline of the construction of linear facilities or (3) within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not resulting in effective mitigation. The AQCMM or Delegate shall implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed:

Step 1: The AQCMM or Delegate shall direct more intensive application of the existing mitigation methods within 15 minutes of making such a determination.

Step 2: The AQCMM or Delegate shall direct implementation of additional methods of dust suppression if Step 1 specified above fails to result in adequate mitigation within 30 minutes of the original determination.

Step 3: The AQCMM or Delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or Delegate is satisfied that appropriate additional mitigation or other site Conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or Delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

Verification: The AQCMP shall include a section detailing how the additional mitigation measures will be accomplished within the time limits specified.

AQ-SC5 Diesel-Fueled Engines Control: The AQCMM shall submit to the CPM, in the MCR, a construction mitigation report that demonstrates compliance with the following mitigation measures for the purposes of controlling diesel construction-related emissions. Any deviation from the

following mitigation measures shall require prior CPM notification and approval.

a) All diesel-fueled engines used in the construction of the facility shall 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, which have a rating of 100 hp or more, shall meet, at a minimum, the Tier 2 California Emission Standards for Off-Road Compression-Ignition Engines as specified in California Code of Regulations, Title 13, section 2423(b)(1) unless certified by the on-site AQCMM that such engine is not available for a particular item of equipment. In the event a Tier 2 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a Tier 1 engine. In the event a Tier 1 engine is not available for any off-road engine larger than 100 hp, that engine shall be equipped with a catalyzed diesel particulate filter (soot filter), 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” if, among other reasons:

   (1) There is no available soot filter that has been certified by either the California Air Resources Board or U.S. Environmental Protection Agency for the engine in question; or

   (2) The construction equipment is intended to be on-site for ten (10) days or less.

   (3) The CPM may grant relief from this requirement if the AQCMM can demonstrate that they have made a good faith effort to comply with this requirement and that compliance is not possible.

d) The use of a soot filter may be terminated immediately if one of the following Conditions exists, provided that the CPM is informed within ten (10) working days of the termination:

   (1) The use of the soot filter is excessively reducing normal availability of the construction equipment due to increased downtime for maintenance, and/or reduced power output due to an excessive increase in backpressure.

   (2) The soot filter is causing or is reasonably expected to cause significant engine damage.

   (3) The soot filter is causing or is reasonably expected to cause a significant risk to workers or the public.

   (4) Any other seriously detrimental cause which has the approval of the CPM prior to the termination being implemented.

e) All heavy earthmoving equipment and heavy duty construction related trucks with engines meeting the requirements of (c) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

f) All diesel heavy construction equipment shall not remain running at idle for more than five minutes, to the extent practical.

Verification: The project owner shall include in the MCR (1) a summary of all actions taken to maintain compliance with this Condition, (2) copies of all diesel fuel purchase records, (3) 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 (4) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

AQ-SC6 The project owner shall submit to the CPM 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 proposed air permit modification to the CPM within five working days of its submittal either by 1) the project owner to an agency, or 2) receipt of proposed modifications from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of receipt.

AQ-SC7 The project owner shall provide emission reduction credits to offset the project's SOx emissions at a ratio of 1:1. These emission reductions in shall be provided in the following quarterly amounts: Q1 – 3,560 lbs; Q2 – 3,560 lbs; Q3 – 5,180 lbs; Q4 – 3,900 lbs. These offsets shall be provided using ERCs N-559-5 and/or N-591-5. Quarterly transfers from quarters one and four to quarters two and three are allowed. The project owner shall surrender these ERCs prior to first turbine fire. This Condition is in addition to the District offset requirements provided in Conditions of Certification **AQ-78** through **AQ-81**.

Verification: The project owner shall submit to the CPM confirmation that the appropriate quantity of SOx ERCs has been surrendered to the District at least 30 days prior to initial startup. If the CPM, in consultation with the District, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project. Quarterly average fuel sulfur data from the most representative gas utility pipeline monitoring station shall be submitted with the Quarterly Operation Reports (**AQ-SC9**) and the Applicant shall demonstrate

that the actual annual SO2 emissions remain below the 8.1 tons of emissions that have been offset by complying with this Condition.

AQ-SC8 Until the California Global Warming Solutions Act of 2006 (AB32) is implemented, the project owner shall either participate in a GHG registry approved by the CPM, or report on a annual basis to the CPM the quantity of greenhouse gases (GHG) emitted as a direct result of facility electricity production.

The project owner shall maintain a record of fuels types and carbon content used on-site for the purpose of power production. These fuels shall include but are not limited to each fuel type burned: (1) in combustion turbines, (2) HRSGs (if applicable) or auxiliary boiler (if applicable), (4) internal combustion engines, (4) flares, and/or (5) for the purpose of startup, shutdown, operation or emission controls.

The project owner may perform annual source tests of CO_2 and CH_4 emissions from the exhaust stacks while firing the facility's primary fuel, using the following test methods or other test methods as approved by the CPM. The project owner shall produce fuel-based emission factors in units of lbs CO_2 equivalent per MMBtu of fuel burned from the annual source tests. If a secondary fuel is approved for the facility, the project owner may also perform these source tests while firing the secondary fuel.

Pollutant	**Test Method**
CO_2	EPA Method 3A
CH_4	Protocol: EPA Method 18 (VOC measured as CH_4)

As an alternative to performing annual source tests, the project owner may use the Intergovernmental Panel on Climate Change (IPCC) Methodologies for Estimating Greenhouse Gas Emissions (MEGGE). If MEGGE is chosen, the project owner shall calculate the CO_2, CH_4 and N_2O emissions using the appropriate fuel-based carbon content coefficient (for CO_2) and the appropriate fuel-based emission factors (for CH_4 and N_2O).

The project owner shall convert the N_2O and CH_4 emissions into CO_2 equivalent emissions using the current IPCC Global Warming Potentials (GWP). The project owner shall maintain a record of all SF_6 that is used for replenishing on-site transformers. At the end of each reporting period, the project owner shall total the mass of SF_6 used and convert that to a CO_2 equivalent emission using the IPCC GWP for SF_6. The project owner shall maintain a record of all PFCs and HFCs that are used for

replenishing on-site refrigeration and chillers directly related to electricity production. At the end of each reporting period, the project owner shall total the mass of PFCs and HFCs used and convert that to a CO_2 equivalent emission using the IPCC GWP.

On an annual basis, the project owner shall report the CO_2 and CO_2 equivalent emissions from the described emissions of CO_2, N_2O, CH_4, SF_6, PFCs, and HFCs.

Verification: The project annual greenhouse gas emissions shall be reported, as a CO_2 equivalent, by the project owner to a climate action registry approved by the CPM, or to the CPM as part of the fourth Quarterly or the annual Air Quality Report, until such time that GHG reporting requirements are adopted and in force for the project as part of the California Global Warming Solutions Act of 2006.

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.

DISTRICT FINAL DETERMINATION OF COMPLIANCE CONDITIONS

Gas Turbine Conditions (Ex. 13.)

1. **SJVAPCD Permit No. Unit C-7220-1-0:** 100 MW Simple-Cycle Power Generating System #1 Consisting of a General Electric LMS100 Natural Gas-Fired Combustion Turbine Generator Served by a Selective Catalytic Reduction (SCR) System and an Oxidation Catalyst.

2. **SJVAPCD Permit No. Unit C-7220-2-0:** 100 MW Simple-Cycle Power Generating System #2 Consisting of a General Electric LMS100 Natural Gas-Fired Combustion Turbine Generator Served by a SCR System and an Oxidation Catalyst.

3. **SJVAPCD Permit No.** Unit **C-7220-3-0:** 100 MW Simple-Cycle Power Generating System #3 Consisting of a General Electric LMS100 Natural Gas-Fired Combustion Turbine Generator Served by a SCR System and an Oxidation Catalyst.

4. **SJVAPCD Permit No. Unit C-7220-4-0:** 100 MW Simple-Cycle Power Generating System #4 Consisting of a General Electric LMS100 Natural Gas-

Fired Combustion Turbine Generator Served by a SCR System and an Oxidation Catalyst.

AQ-1 The owner/operator of the Panoche Energy Center (PEC) shall minimize the emissions from the gas turbine to the maximum extent possible during the commissioning period. Conditions **AQ-2** through **AQ-13** shall apply only during the commissioning period as defined below. Unless otherwise indicated, Conditions **AQ-14** through **AQ-59** shall apply after the commissioning period has ended. [District Rule 2201]

Verification: The project owner shall provide in the monthly commissioning status report (see the verification for Condition **AQ-8**) information regarding the types and effectiveness of methods used to minimize commissioning period emissions.

AQ-2 Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the PEC construction contractor to insure safe and reliable steady state operation of the gas turbines and associated electrical delivery systems. [District Rule 2201]

Verification: The project owner shall provide written notification to the APCO and the CPM of the expected date of first turbine roll at least 15 days before the first turbine roll.

AQ-3 Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when a gas turbine is first fired, whichever occurs first. The commissioning period shall terminate when the plant has completed initial performance testing, completed final plant tuning, and is available for commercial operation. [District Rule 2201]

Verification: The project owner shall provide written notification to the APCO and the CPM of the expected date of first turbine roll at least 15 days before the first turbine roll. The project owner shall provide written notification to the APCO within five days after the turbines are available for commercial operation.

AQ-4 No more than two of the turbines operating under C-7220-1, C-7220-2, C-7220-3 or C-7220-4 shall be commissioned at any one time. [District Rule 2201]

Verification: The project owner shall provide gas turbine operating data during the initial commissioning period to demonstrate compliance with this Condition, and that data shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-8.**

AQ-5 At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction

contractor, the combustors of this unit shall be tuned to minimize emissions. [District Rule 2201]

Verification: The project owner shall provide combustor tuning information to demonstrate compliance with this Condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-8**.

AQ-6 At the earliest feasible opportunity, in accordance with the recommendations of the equipment manufacturer and the construction contractor, the Selective Catalytic Reduction (SCR) system and the oxidation catalyst shall be installed, adjusted, and operated to minimize emissions from this unit. [District Rule 2201]

Verification: The project owner shall provide emission abatement system information (such as dates of catalyst installation and ammonia grid initial operation) to demonstrate compliance with this Condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-8**.

AQ-7 Coincident with the steady-state operation of the SCR system and the oxidation catalyst at loads greater than 50% and after installation and tuning of the emission controls, NOx, CO, and VOC emissions from this unit shall comply with the limits specified in Condition **AQ-19**. [District Rule 2201]

Verification: The project owner shall provide NOx, CO, and VOC emissions information for steady-state operations of the SCR system at oxidation catalyst loads greater than 50% once emission controls for NOx, CO, and VOC have been installed and tuned to demonstrate compliance with this Condition, and that information shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-8**.

AQ-8 The project owner shall submit a plan to the District at least four weeks prior to the first firing of this unit, describing the procedures to be followed during the commissioning period. The plan shall include a description of each commissioning activity, the anticipated duration of each activity in hours, and the purpose of the activity. The activities described shall include, but not limited to, the tuning of the combustors, the installation and operation of the SCR system and the oxidation catalyst, the installation, calibration, and testing of the NOx and CO continuous emissions monitors, and any activities requiring the firing of this unit without abatement by the SCR system or oxidation catalyst. [District Rule 2201]

Verification: The project owner shall submit a single commissioning plan to the District and the CPM at least four weeks prior to the first firing of the combustion turbine, describing in detail the procedures to be followed for the turbine. 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 the commissioning plan and demonstrates compliance with all other substantive requirements listed in Conditions **AQ-1** through **AQ-13**. The monthly commissioning status report shall be submitted to the CPM by the 10th of each month for the previous month, for all months with turbine commissioning activities following the turbine first fire date.

AQ-9 Emission rates from the CTG, during the commissioning period, shall not exceed any of the following limits: NOx (as NO_2) - 187.00 lb/hr; PM10 – 6.00 lb/hr; CO – 309.75 lb/hr; or VOC (as methane) – 17.14 lb/hr. [District Rule 2201]

Verification: The project owner shall provide CEM-derived emissions data for NOx and CO and shall provide calculated PM10 and VOC emissions from fuel consumption data and source test results to demonstrate compliance with this Condition, and that data shall be submitted to the CEC CPM as part of the monthly commissioning status report noted in the verification of Condition **AQ-8**.

AQ-10 During the commissioning period, the project owner shall demonstrate NOx and CO compliance with Condition **AQ-9** through the use of properly operated and maintained continuous emissions monitors and recorders as specified in Condition **AQ-11**. The monitored parameters for this unit shall be recorded at least once every 15 minutes (excluding normal calibration periods or when the monitored source is not in operation). [District Rule 2201]

Verification: The project owner shall provide CEM data to demonstrate NOx and CO compliance with Conditions **AQ-9**, **AQ-11**, and **AQ-19**, and that data shall be submitted to the CEC CPM as part of the monthly commissioning phase status report noted in the verification of Condition **AQ-8**.

AQ-11 The continuous emissions monitors specified in these permit Conditions shall be installed, calibrated and operational prior to the first firing of the unit. After first firing, the detection range of the CEMS shall be adjusted as necessary to accurately measure the resulting range of NOx and CO emissions concentrations. [District Rule 2201]

Verification: The project owner shall provide notification to the District and the CPM of the anticipated dates for installation, calibration and testing for the CEMS at least ten (10) days prior to installation. The project owner shall provide a report to the District and CPM for approval demonstrating compliance with CEMS calibration requirements prior to turbine first fire. The project owner shall provide ongoing calibration data in the monthly commissioning status reports (see verification of Condition **AQ-8**).

AQ-12 The total number of firing hours of a CTG unit without abatement of emissions by the SCR system and the oxidation catalyst of units C-7220-1, ‘2, ‘3, and ‘4 shall not exceed 800 hours total during the commissioning

period. Such operation of a CTG without abatement shall be limited to discrete commissioning activities that can only be properly executed without the SCR system and the oxidation catalyst in place. Upon completion of these activities, the project owner shall provide written notice to the District and the unused balance of the 800 firing hours without abatement shall expire. Records of the commissioning hours of operation for units C-7220-1, '2, '3, and '4 shall be maintained. [District Rule 2201]

Verification: The project owner shall provide to the District and the CPM a reporting of the number of firing hours without abatement for the turbine in the monthly commissioning status reports (see verification of Condition **AQ-8**).

AQ-13 The total mass emissions of NOx, SOx, PM10, CO, and VOC that are emitted during the commissioning period shall accrue towards the consecutive twelve month emission limits specified in Condition **AQ-28**. NOx and CO total mass emissions will be determined from CEMs data and SOx, PM10, and VOC total mass emissions will be calculated. [District Rule 2201]

Verification: The project owner shall provide CEM-derived emissions data for NOx and CO and shall provide calculated PM10 and VOC emissions from fuel consumption data and source test results to demonstrate compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-14 A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine engine. Exhaust ducting may be equipped (if required) with a fresh air inlet blower to be used to lower the exhaust temperature prior to inlet of the SCR system catalyst. The project owner shall submit SCR and oxidation catalyst design details to the District at least 30 days prior to commencement of construction. [District Rule 2201]

Verification: The project owner shall submit SCR and oxidation catalyst design details that demonstrate compliance with this Condition to the APCO and the CPM 30 days prior to commencement of construction.

AQ-15 The project owner shall submit continuous emission monitor design, installation, and operational details to the District at least 30 days prior to commencement of construction. [District Rule 2201]

Verification: The project owner shall submit continuous emission monitor design, installation, and operational details to the APCO and the CPM 30 days prior to commencement of construction.

AQ-16 The project owner shall submit to the District, before issuance of the Permit to Operate, information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when no continuous emission

monitoring data for NOx is available or when the continuous emission monitoring system is not operating properly. [District Rule 4703]

Verification: The project owner shall compile the required NOx control system and emissions data and submit the information to the CPM and the APCO before issuance of the Permit to Operate.

AQ-17 Combustion turbine generator (CTG) and electrical generator lube oil vents shall be equipped with mist eliminators. Visible emissions from lube oil vents shall not exhibit opacity of 5%or greater, except for a period or periods not exceeding three minutes in any one hour. [District Rules 2201 and 4101]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission to verify the installation and proper operation of the lube oil vent mist eliminators.

AQ-18 The CTG shall be fired exclusively on PUC-regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and 40 CFR 60.4330(a)(2)]

Verification: The project owner shall compile the required data on the sulfur content of the natural gas and submit the information to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC9**).

AQ-19 Emission rates from the CTG, except during startup or shutdown periods, shall not exceed any of the following limits: NOx (as NO_2) – 8.03 lb/hr and 2.5 ppmvd @ 15% O_2; SOx (as SO_2) – 2.51 lb/hr; PM10 – 6.00 lb/hr; CO – 11.81 lb/hr and 6.0 ppmvd @ 15% O_2; or VOC (as methane) – 2.67 lb/hr and 2.0 ppmvd @ 15% O_2. NOx (as NO_2) emission limits are one hour rolling averages. All other pollutant emission concentration limits are based on three hour rolling averages. [District Rules 2201 and 4703 and 40 CFR 60.4320(a) & (b)]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-20 Ammonia (NH_3) emissions shall not exceed either of the following limits: 11.90 lb/hr or 10 ppmvd @ 15% O_2 (based on a 24 hour rolling average). [District Rules 2201 and 4102]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition, using approved calculation methods (**AQ-31**), as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-21 During periods of startup, CTG exhaust emission rates shall not exceed any of the following limits: NOx (as NO_2) – 44.40 lb/hr, SOx – 2.51 lb/hr,

PM10 6.00 lb/hr, CO - 106.60 lb/hr, or VOC - 7.60 lb/hr, based on one hour averages. [District Rules 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).The project owner shall provide CEM-derived emissions data for NOx and CO and shall provide calculated PM10 and VOC emissions from fuel consumption data and source test results to demonstrate compliance with this Condition.

AQ-22 During periods of shutdown, CTG exhaust emission rates shall not exceed any of the following limits: NOx (as NO_2) – 34.29 lb/hr, SOx – 2.51 lb/hr, PM10 6.00 lb/hr, CO – 268.57 lb/hr, or VOC - 17.14 lb/hr, based on one hour averages. [District Rules 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).The project owner shall provide CEM-derived emissions data for NOx and CO and shall provide calculated PM10 and VOC emissions from fuel consumption data and source test results to demonstrate compliance with this Condition.

AQ-23 Startup shall be defined as the period of time during which a unit is brought from a shutdown status to its SCR operating temperature and pressure, including the time required by the unit's emission control system to reach full operations. Shutdown shall be defined as the period of time during which a unit is taken from an operational to a non-operational status as the fuel supply to the unit is completely turned off. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown event duration data demonstrating compliance with Condition **AQ-24** as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-24 The duration of each startup or shutdown shall not exceed two hours. Startup and shutdown emissions shall be counted toward all applicable emission limits. [District Rules 2201 and 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown event duration data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-25 The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703]

Verification: The project owner shall submit to the CPM and APCO the CTG startup and shutdown emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-26 Daily emissions from the CTG shall not exceed any of the following limits: NOx (as NO_2) – 261.1 lb/day; VOC – 79.1 lb/day; CO – 560.4 lb/day; PM10 – 144.1 lb/day; or SOx (as SO_2) - 60.2 lb/day. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-27 Quarterly hours of operation shall not exceed any of the following: 1st Quarter - 1,100 hours, 2nd Quarter - 1,100 hours, 3rd Quarter - 1,600 hours, or 4th Quarter - 1,200 hours. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG operations data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-28 Annual emissions from the CTG, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: NOx (as NO_2) - 48,465 lb/year; SOx (as SO_2) - 12,550 lb/year; PM10 - 30,000 lb/year; CO - 92,750 lb/year; or VOC - 15,174 lb/year. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO CTG emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-29 Each one hour period shall commence on the hour. Each one hour period in a three hour rolling average will commence on the hour. The three hour average will be compiled from the three most recent one hour periods. Each one hour period in a twenty-four hour average for ammonia slip will commence on the hour. [District Rule 2201]

Verification: The project owner shall compile required emission compliance data using these standards and shall submit the information to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-30 Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve consecutive month rolling average emissions shall commence at the beginning of the first day of the month. The twelve consecutive month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201]

Verification: The project owner shall compile required emission compliance data using these standards and submit the information to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-31 Compliance with the ammonia emission limits shall be demonstrated utilizing one of the following procedures: 1) calculate the daily ammonia emissions using the following equation: (ppmvd @ 15% O_2) = ((a - (b x c/1,000,000)) x (1,000,000 / b)) x d, where a = average ammonia injection

rate (lb/hr) / (17 lb/lb mol), b = dry exhaust flow rate (lb/hr) / (29 lb/lb mol), c = change in measured NOx concentration ppmvd @ 15% O_2 across the catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip; 2.) Utilize another District-approved calculation method using measured surrogate parameters to determine the daily ammonia emissions in ppmvd @ 15% O_2. If this option is chosen, the project owner shall submit a detailed calculation protocol for District approval at least 60 days prior to commencement of operation; 3.) Alternatively, the project owner may utilize a continuous in-stack ammonia monitor to verify compliance with the ammonia emissions limit. If this option is chosen, the project owner shall submit a monitoring plan for District approval at least 60 days prior to commencement of operation. [District Rule 2201]

Verification: The project owner shall submit for approval their proposed ammonia calculation procedure using one of the methods identified above to the CPM and the APCO for approval 15 days prior to turbine first fire, and then submit to the CPM and APCO for approval any requested modifications to the calculation procedure, not including revised source test correction factors, at least 15 days prior to the Quarterly Operation Report (**AQ-SC9**) where the modified calculation procedure is first used.

AQ-32 Source testing to measure startup and shutdown NOx, CO, and VOC mass emission rates shall be conducted for one of the gas turbines (C-7220-1, C-7220-2, C-7220-3, or C-7220-4) prior to the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy shall be determined during startup source testing in accordance with 40 CFR 60, Appendix B. If CEM data is not certifiable to determine compliance with NOx and CO startup emission limits, then source testing to measure startup NOx and CO mass emission rates shall be conducted at least once every 12 months. [District Rule 1081]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing. Testing shall be conducted for the CTG upon initial operation, and at least once every seven years.

AQ-33 Hazardous Air Pollutant (HAP) emissions shall not exceed 25 tpy for all HAPs or 10 tpy for any single HAP. [District Rule 4002]

Verification: The annual HAPs emissions shall be estimated, in the manner specified in **AQ-35** to demonstrate compliance with this Condition, and shall be provided in the fourth quarter's Quarterly Operation Reports (**AQ-SC9**).

AQ-34 The project owner shall conduct an initial speciated HAPS and total VOC source test for one of the GTEs (C-7220-1, '2, '3 or '4), by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. PEC shall correlate the total HAPS emissions rate and

the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPs source test. Initial and annual compliance with the HAPS emissions limit (25 tpy all HAPs or 10 tpy any single HAP) shall be demonstrated by the combined VOC emissions rates for the GTEs (C-7220-1, '2, '3, and '4) determined during initial and annual compliance source testing and the correlation between VOC emissions and HAP(s). [District Rule 4002]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing. The correlated HAPs emission factors determined by these source tests shall be used for annual HAPs emission estimates, used to demonstrate HAPs minor source status, to be provided in the fourth quarter's Quarterly Operation Reports (**AQ-SC9**).

AQ-35 Source testing to measure the NOx, CO, VOC, and NH_3 emission rates (lb/hr and ppmvd @ 15% O_2) and PM10 emission rate (lb/hr) shall be conducted within 120 days after initial operation and at least once every twelve months thereafter. [District Rules 1081 and 4703 and 40 CFR 60.4400(a)]

Verification: The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-36 The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract or (ii) shall be demonstrated within 60 days after the end of the commissioning period and monitored weekly thereafter. If the sulfur content is demonstrated to be less than 1.0 gr/100 scf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume. [40 CFR 60.4360, 60.4365(a) and 60.4370(c)]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC9**).

AQ-37 The following test methods shall be used: NOx - EPA Method 7E or 20, PM10 - EPA Method 5/202 (front half and back half), CO - EPA Method 10 or 10B, O_2 - EPA Method 3, 3A, or 20, VOC - EPA Method 18 or 25, and ammonia – EPA Method 206. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. The request to utilize EPA approved alternative source testing methods must be submitted in writing and written approval received from the District prior to the submission of the source test plan. [District Rules 1081 and 4703 and 40 CFR 60.4400(1)(i)]

Verification: The project owner shall notify the CPM and the District 30 days prior to any compliance source test. The project owner shall provide a source test

plan to the CPM and District for the CPM and District approval 15 days prior to testing.

AQ-38 HHV and LHV of the fuel shall be determined using ASTM D3588, ASTM 1826, or ASTM 1945. [40 CFR 60.332(a),(b) and District Rule 4703, 6.4.3]

Verification: The higher and lower heat values of the natural gas fuel shall be provided to the CPM and the APCO in the Quarterly Operation Reports (**AQ-SC9**).

AQ-39 Fuel sulfur content shall be monitored using one of the following methods: ASTM Methods D1072, D3246, D4084, D4468, D4810, D6228, D6667 or Gas Processors Association Standard 2377. [40 CFR 60.4415(a)(1)(i)]

Verification: The fuel sulfur content data shall be submitted to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC9**).

AQ-40 The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O_2 analyzer during District inspections. The sampling ports shall be located in accordance with the ARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Source Emission Monitoring and Testing. [District Rule 1081]

Verification: Prior to construction of the turbine stacks the project owner shall provide to the CPM for approval detailed plan drawings of the turbine stacks that show the sampling ports and demonstrate compliance with the requirements of this Condition. The project owner shall make the site available for inspection of the turbine stacks by representatives of the District, ARB and the Commission.

AQ-41 Compliance demonstration (source testing) shall be District witnessed or authorized and samples shall be collected by a certified testing laboratory. Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Verification: The project owner shall notify the CPM and the District 30 days prior to any compliance source test. The project owner shall provide a source test plan to the CPM and District for approval 15 days prior to testing. The results and field data collected during source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-42 The turbine shall be equipped with a continuous monitoring system to measure and record fuel consumption. [District Rules 2201 and 4703 and 40 CFR 60.4335(b)(1)]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission to verify the continuous monitoring system is properly installed and operational.

AQ-43 The owner or operator shall install, certify, maintain, operate and quality-assure a Continuous Emission Monitoring System (CEMS) which continuously measures and records the exhaust gas NOx, CO and O_2 concentrations. Continuous emissions monitor(s) shall be capable of monitoring emissions during normal operating Conditions, and during startups and shutdowns provided the CEMS pass the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEMS cannot be demonstrated during startup Conditions, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 1080, 2201 and 4703 and 40 CFR 60.4335(b)(1)]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission to verify the continuous monitoring system is properly installed and operational.

AQ-44 The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each successive 15-minute period or shall meet equivalent specifications established by mutual agreement of the District, the ARB and the EPA. [District Rule 1080 and 40 CFR 60.4345(b)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-45 The NOx, CO and O_2 CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 2 (PS 2), or shall meet equivalent specifications established by mutual agreement of the District, the ARB, and the EPA. [District Rule 1080 and 40 CFR 60.4345(a)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-46 Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO the CEMS audits demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-47 The owner/operator shall perform a relative accuracy test audit (RATA) for the NOx, CO, and O_2 CEMs as specified by 40 CFR Part 60, Appendix F, 5.11, at least once every four calendar quarters. The project owner shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-48 Results of the CEM system shall be averaged over a one hour period for NOx emissions and a three hour period for CO emissions using consecutive 15-minute sampling periods in accordance with all applicable requirements of CFR 60.13. [District Rule 4703 and 40 CFR 60.13]

Verification: The project owner shall submit to the CPM and APCO emission data required in the Quarterly Operation Reports (**AQ-SC9**) that follows the definitions of this Condition.

AQ-49 Excess emissions shall be defined as any operating hour in which the 4-hour or 30-day rolling average NOx concentration exceeds applicable emissions limit and a period of monitor downtime shall be any unit operating hour in which sufficient data are not obtained to validate the hour for either NOx or O_2 (or both). [40 CFR 60.4380(b)(1)]

Verification: The project owner shall submit to the CPM and APCO emission data and monitor downtime data in the Quarterly Operation Reports (**AQ-SC9**) that follows the definitions of this Condition.

AQ-50 Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3.3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO emission data required in the Quarterly Operation Reports (**AQ-SC9**) that follows the definitions of this Condition.

AQ-51 The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEM data polling software system and shall make CEM data available to the District's automated polling system on a daily basis. [District Rule 1080]

Verification: The project owner shall provide a Continuous Emission Monitoring System (CEMS) protocol for approval by the CPM and the APCO at least 60 days prior to installation of the CEMS. The project owner shall make the site available for inspection of the CEMS by representatives of the District, ARB and the Commission.

AQ-52 Upon notice by the District that the facility's CEM system is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEM data is sent to the District by a District-approved alternative method. [District Rule 1080]

Verification: The project owner shall provide required non-polled CEM data to the District by a District-approved alternative method.

AQ-53 The owner or operator shall, upon written notice from the APCO, provide a summary of the data obtained from the CEM systems. This summary shall be in the form and the manner prescribed by the APCO. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS summary data upon written notice from the APCO.

AQ-54 The owner or operator shall submit a written report of CEM operations for each calendar quarter to the APCO. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventative measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period and used to determine compliance with an emissions standard; Applicable time and date of each period during which the CEM was inoperative (monitor downtime), except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080 and 40 CFR 60.4375(a) and 60.4395]

Verification: The project owner shall submit to the CPM and APCO the CEMS audits demonstrating compliance with this Condition as part of the Quarterly Operation Report required by this Condition and Condition **AQ-SC9**.

AQ-55 APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the required monitoring devices to ensure that such devices are functioning properly. [District Rule 1080]

Verification: The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission to verify monitoring devices are functioning properly.

AQ-56 The project owner shall notify the District of any breakdown Condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100, 6.1]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-57 The District shall be notified in writing within ten days following the correction of any breakdown Condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100, 7.0]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM and the APCO as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-58 The project owner shall maintain the following records: date and time, duration, and type of any startup, shutdown, or malfunction; performance testing; evaluations, calibrations, checks, adjustments, any period during which a continuous monitoring system or monitoring device was inoperative, and maintenance of any continuous emission monitor. [District Rules 1080, 2201, and 4703 and 40 CFR 60.8(d)]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, ARB and the Commission.

AQ-59 The project owner shall maintain the following records: quarterly hours of operation, fuel consumption (scf/hr and scf/rolling twelve month period), continuous emission monitor measurements, calculated ammonia slip, and calculated NOx mass emission rates (lb/hr and lb/twelve month rolling period). [District Rules 2201 and 4703]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, ARB and the Commission.

SJVAPCD Permit No. Unit C-7220-5-0: 160 BHP John Deere Model 6068T, or Equivalent, Tier 2 Certified Diesel-Fired Emergency IC Engine Powering a Firewater Pump.

AQ-60 The project owner shall obtain written District approval for the use of any equivalent equipment not specifically approved in the District's Determination of Compliance. Approval of the equivalent equipment shall be made only after the District's determination that the submitted design and performance of the proposed alternate equipment is equivalent to the specifically authorized equipment. [District Rule 2201]

Verification: The project owner shall obtain CPM and APCO approval for the use of any equivalent IC engine not specifically approved in the District's Determination of Compliance. Approval of an equivalent IC engine shall only be made after the CPM and APCO determine that the submitted design and performance data for the proposed IC engine is at least equivalent to the approved IC engine. [District Rule 2201]

AQ-61 The project owner's request for approval of equivalent equipment shall include the make, model, manufacturer's maximum rating, manufacturer's guaranteed emission rates, equipment drawing(s), and operational characteristics/parameters. [District Rule 2201]

Verification: The project owner shall submit a request for approval including specific design and performance data for an equivalent emergency firewater pump IC engine not specifically approved in the Determination of Compliance to the APCO and the CPM at least 90 days prior to the installation of the emergency firewater pump IC engine.

AQ-62 Alternate equipment shall be of the same class and category of source as the equipment authorized by the Determination of Compliance. [District Rule 2201] N

Verification: The project owner shall submit a request for approval including specific design and performance data for an equivalent emergency firewater pump IC engine not specifically approved in the Determination of Compliance to the APCO and the CPM at least 90 days prior to the installation of the emergency firewater pump IC engine.

AQ-63 No emission factor and no emission shall be greater for the alternate equipment than for the proposed equipment. No changes in the hours of operation, operating rate, throughput, or firing rate may be authorized for any alternate equipment. [District Rule 2201]

Verification: The project owner shall submit a request for approval including specific design and performance data for an equivalent emergency firewater pump IC engine not specifically approved by the Determination of Compliance to the APCO and the CPM at least 90 days prior to the installation of the emergency firewater pump IC engine.

AQ-64 The exhaust stack shall vent vertically upward. The vertical exhaust flow shall not be impeded by a rain cap, roof overhang, or any other obstruction. [District Rule 4102]

Verification: The project owner shall make the site available for inspection of the firewater pump engine by representatives of the District, ARB and the Commission.

AQ-65 Only ARB certified diesel fuel containing not more than 0.0015% sulfur by weight is to be used. [District Rules 2201 and 4801 and 17 CCR 93115]

Verification: The project owner shall compile the data on the sulfur content of the diesel fuel received and submit the information to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC9**).

AQ-66 This engine shall be equipped with an operational non-resettable elapsed time meter or other APCO approved alternative. [District Rule 4702 and 17 CCR 93115]

Verification: The project owner shall make the site available for inspection of the firewater pump engine by representatives of the District, ARB and the Commission.

AQ-67 Emissions from this IC engine shall not exceed any of the following limits: 4.5 g-NOx/bhp-hr, 0.6 g-CO/bhp-hr, or 0.4 g-VOC/bhp-hr. [District Rule 2201 and 13 CCR 2423 and 17 CCR 93115]

Verification: The project owner shall submit to the CPM and APCO IC engine manufacturer guaranteed emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**) and shall maintain this record for inspection at the site as long as the engine is in service.

AQ-68 Emissions from this IC engine shall not exceed 0.15 g-PM10/bhp-hr based on USEPA certification using ISO 8178 test procedure. [District Rules 2201 and 4102 and 13 CCR 2423 and 17 CCR 93115]

Verification: The project owner shall submit to the CPM and APCO IC engine emissions data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-69 This engine shall be operated only for maintenance, testing, required regulatory purposes, and during emergency situations. For testing purposes, the engine shall only be operated the number of hours necessary to comply with the testing requirements of the National Fire Protection Association (NFPA) 25 - "Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems", 1998 edition. Total hours of operation for all maintenance, testing, and required regulatory purposes shall not exceed 52 hours per calendar year. [District Rule 4702 and 17 CCR 93115]

Verification: The project owner shall submit to the CPM and APCO firewater pump IC engine operations data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-70 The project owner shall maintain monthly records of emergency and non-emergency operation. Records shall include the number of hours of emergency operation, the date and number of hours of all testing and maintenance operations, and the purpose of the operation (for example: load testing, weekly testing, rolling blackout, general area power outage, etc.). For units with automated testing systems, the operator may, as an

alternative to keeping records of actual operation for testing purposes, maintain a readily accessible written record of the automated testing schedule. [District Rule 4702 and 17 CCR 93115]

Verification: The project owner shall submit to the CPM and APCO firewater pump IC engine monthly operations data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

SJVAPCD Permit No. Unit C-7220-6-0: 14,300 GPM Induced Draft Cooling Tower Served by a High Efficiency Drift Eliminator.

AQ-71 Project owner shall submit cooling tower design details including the cooling tower type, drift eliminator design details, and materials of construction to the District at least 90 days before the tower is operated. [District Rule 7012]

Verification: The project owner shall provide copies of cooling tower and drift eliminator design details to the CPM and the District for approval at least 30 days prior to construction of permanent foundations for the cooling tower.

AQ-72 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]

Verification: The project owner shall provide the list of cooling tower water additives (i.e. biocides, fungicides, anti-scaling compounds, etc.) demonstrating compliance with this Condition to the CPM for approval at least 30 days prior to operation of the cooling tower and shall provide any revisions to the cooling tower water additives list to the CPM for approval prior using the new water additive.

AQ-73 Drift eliminator drift rate shall not exceed 0.0005%. [District Rule 2201]

Verification: The project owner shall provide copies of cooling tower and drift eliminator design and manufacturers drift rate guarantee details to the CPM and the District for approval at least 30 days prior to construction of permanent foundations for the cooling tower.

AQ-74 PM10 emission rate from the cooling tower shall not exceed 8.4 lb/day. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO the cooling tower emission data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-75 Compliance with the PM10 daily emission limit shall be demonstrated as follows: PM10 lb/day = circulating water recirculation rate x total dissolved solids concentration in the blowdown water x design drift rate. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO the cooling tower emission data demonstrating compliance with this Condition as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-76 Compliance with the PM10 emission limit shall be determined by blowdown water sample analysis by independent laboratory within 120 days of initial operation and quarterly thereafter. [District Rule 1081]

Verification: The results and field data collected from cooling tower blowdown water samples analysis shall be submitted to the CPM and the District as part of the Quarterly Operation Report (**AQ-SC9**).

AQ-77 The project owner shall maintain records of the calculated PM10 emission rate and the laboratory water sample analysis. [District Rule 1070].

Verification: The project owner shall make the site available for inspection of the cooling tower emission rate and laboratory water sample analysis records by representatives of the District, ARB and the Commission.

FACILITY-WIDE CONDITIONS

AQ-78 Prior to initial operation of the facility, the project owner shall provide NOx emission reduction credits for the following quantity of emissions: 1st quarter - 38,249 lb, 2nd quarter - 38,249 lb, 3rd quarter - 55,635 lb, and fourth quarter - 41,726 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender NOx ERC certificates in the amounts shown to the District and provide documentation of that surrender to the CPM.

AQ-79 Prior to initial operation of the facility, the project owner shall provide PM10 emission reduction credits for the following quantity of emissions: 1st quarter - 20,364 lb, 2nd quarter - 20,364 lb, 3rd quarter - 29,620 lb, and fourth quarter - 22,215 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). SOx ERCs may be used to offset PM10 increases at an interpollutant ratio of 1.867 lb-SOx : 1.0 lb-PM10. [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender PM10 and/or SOx ERC certificates in the amounts shown or based on the SOx interpollutant ratio shown to the District and provide documentation of that surrender to the CPM.

AQ-80 Prior to initial operation of the facility, the project owner shall provide VOC emission reduction credits for the following quantity of emissions: 1st quarter – 8,953 lb, 2nd quarter – 8,953 lb, 3rd quarter - 13,023 lb, and

fourth quarter - 9,767 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender VOC ERC certificates in the amounts shown to the District and provide documentation of that surrender to the CPM.

AQ-81 ERC Certificate Numbers S-2437-2, S-2362-2, S-2431-4, S-2432-4, S-2433-4, S-2434-4, S-2436-4, S-2435-4, N-559-5, N-591-5, S-2465-1 (or certificates split from these certificates) shall be used to supply the required offsets, unless a revised offsetting proposal is received and approved by the District. [District Rule 2201]

Verification: At least 60 days prior to commencing CTG first fire, the project owner shall surrender ERC certificates in the amounts shown to the District and provide documentation of that surrender to the CPM.

AQ-82 The project owner shall submit an application to comply with Rule 2520 - Federally Mandated Operating Permits within twelve months of commencing operation. [District Rule 2520]

Verification: The project owner shall submit a copy of their Title V – Federal Mandated Operating Permit Application to the CPM within 12 months of commencing operation.

AQ-83 The project owner shall submit an application to comply with Rule 2540 - Acid Rain Program. [District Rule 2540]

Verification: The project owner shall submit to the CPM copies of the Title IV permit application within fifteen (15) days of providing the application to the District, and shall submit proof that necessary Title IV SO_2 emission allotments have been acquired as necessary for compliance with Title IV requirements annually in the first Quarterly Compliance Report (**AQ-SC9**) that is due after the annual SO_2 allotment due date.

AQ-84 All equipment shall be maintained in good operating Condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

Verification: The project owner shall submit maintenance records for all equipment to the CPM and the APCO in the Quarterly Operation Report (**AQ-SC9**).

AQ-85 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

Verification: The project owner will document any complaints that it has received from the public in the Quarterly Operation Report (**AQ-SC9**). The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission.

AQ-86 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

Verification: The project owner shall document any known opacity violations in the Quarterly Operation Report (**AQ-SC9**). The project owner shall make the site available for inspection by representatives of the District, ARB and the Commission.

AQ-87 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The project owner shall submit the results of the initial and annual source tests per Condition **AQ-35**.

AQ-88 All records shall be maintained and retained on-site for a period of at least five years and shall be made available for District inspection upon request. [District Rules 1070, 2201, and 4703]

Verification: The project owner shall make the site available for inspection of records by representatives of the District, ARB and the Commission.

AQ-89 Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 or Rule 8011. [District Rules 8011 and 8021]

Verification: The project owner shall document compliance with Rule 8021 in the Monthly Compliance Report (**AQ-SC3**), and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-90 An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or five acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]

Verification: The project owner shall submit a Dust Control Plan to the CPM and APCO at least 30 days prior to the start of any construction activities to show compliance with this Condition and Condition **AQ-SC2**.

AQ-91 An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 (8/19/04) or Rule 8011(8/19/04). [District Rules 8011 and 8041]

Verification: The project owner shall document compliance with Rule 8041 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-92 Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 or Rule 8011. [District Rules 8011 and 8051]

Verification: The project owner shall document compliance with Rule 8051 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-93 Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 or Rule 8011. [District Rules 8011 and 8061]

Verification: The project owner shall document compliance with Rule 8061 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-94 Water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-95 Where dusting materials are allowed to accumulate on paved surfaces, the accumulation shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-96 On each day that 50 or more Vehicle Daily Trips or 25 or more Vehicle Daily Trips with three axles or more will occur on an unpaved vehicle/equipment traffic area, the project owner shall apply water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure as required to limit

Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

Verification: The project owner shall document compliance with Rule 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-97 Whenever any portion of the site becomes inactive, the project owner shall restrict access and periodically stabilize any disturbed surface to comply with the Conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8011 and 8071]

Verification: The project owner shall document compliance with Rules 8011 and 8071 in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

AQ-98 Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8011, 8031, and 8071]

Verification: The project owner shall document compliance with Regulation VIII rules in the Monthly Compliance Report (**AQ-SC3)**, and as necessary after construction is complete in the Quarterly Operation Report (**AQ-SC9**).

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion of air quality and considers the potential public health effects from project emissions of toxic air contaminants. In this analysis, we review the evidence concerning whether such emissions will result in significant public health impacts or violate standards for public health protection.[8]

SUMMARY AND DISCUSSION OF THE EVIDENCE

Project construction and operation will result in routine emissions of toxic air contaminants (TACs). These substances are categorized as noncriteria pollutants because there are no ambient air quality standards established to regulate their emissions.[9] In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from these emissions.

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the PEC 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;[10] and

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[8] 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 to soils and surface water sources are discussed in the **SOIL AND WATER RESOURCES** section. Hazardous and non-hazardous wastes are described in **WASTE MANAGEMENT**.

[9] Criteria pollutants are discussed in the **AIR QUALITY** section, *supra*.

[10] Exposure pathways, or ways in which people might come into contact with toxic substances, include inhalation, dermal (through the skin) absorption, soil ingestion, consumption of locally grown plant foods, and mother's milk.

- Characterize potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 100, p. 4.7-3.)

Typically, the initial risk analysis for a project is preformed 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 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;
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses); and
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years. (Ex. 100, p. 4.7-3.)

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. The exposure period is considered to be approximately from ten to one hundred percent of a lifetime, or from seven to seventy years. (Ex. 100, p. 4.7-3 – 4.7-4.)

The analysis for non-cancer health effects compares the maximum project contaminant levels to safe levels called "reference exposure levels" or RELs. These are amounts of toxic substances to which even sensitive people can be exposed and suffer no adverse health effects. These exposure levels are

designed to protect the most sensitive individuals in the population such as infants, the aged, and people suffering from illness or disease which makes them more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effects reported, and include margins of safety.

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. 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. 100, pp. 4.7-4.)

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 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. A total hazard index of less than one indicates that cumulative worst-case exposures are less than, or below, the safe levels[11]. Cancer risks are calculated based on the total risk from exposure to all cancer causing chemicals. A significant increased lifetime cancer risk occurs if one excess case of cancer in an exposed population of 100,000

[11] The hazard index for every toxic substance which has the same type of health effect is added to yield a total hazard index. The total hazard index is calculated separately for acute and chronic effects.

(equivalent to a risk of ten in one million or 10 x 10^{-6}) is calculated to occur. (Ex. 100, pp. 4.7-4 - 4.7-5.)

Toxic emissions will be attributable to the project during both its construction and its operation phases. Applicant and Staff each performed an analysis of the impacts of the PEC which evaluated potential cancer and non-cancer health risks to the public. (Ex 100, pp. 4.7-8 - 4.7-12.)

The evidence explains, in depth, the methodology used in identifying and quantifying the emission rates of the toxic non-criteria pollutants which could adversely affect public health. The Applicant's estimates of PEC's potential contribution to the area's carcinogenic and non-carcinogenic pollutants were obtained from a screening-level health risk assessment conducted according to procedures specified in the 1993 CAPCOA Guidelines. The results from this assessment are summarized in **Public Health Table 1**. Staff reviewed the assumptions used in the assessment validated the Applicant's results. (Ex. 100, pp. 4.7-9 - 4.7-12.)

PUBLIC HEALTH Table 1
PEC Operation Hazard/Risk

Type of Hazard/Risk	Hazard Index/Risk	Significance Level	Significant?
Acute Non-cancer	0.051	1.0	No
Chronic Non-cancer	0.0026	1.0	No
Individual Cancer	3.46×10^{-6}	10.0×10^{-6}	No

Source: Ex. 100, p. 4.7-12.

This modeling shows that all cancer risks due to emissions from PEC are less than the significance threshold of ten in one million and that all chronic and acute non-cancer hazard indices are less than the 1.0 threshold. PEC's emissions would not present significant cancer risk or non-cancer hazards to any member of the public.

Finally, the record shows that in addition to being a source of potential toxic air contaminants, the possibility exists for bacterial growth, including Legionella, to occur in the cooling tower. It is the principal cause of legionellosis, otherwise known as Legionnaires' Disease, which is similar to pneumonia. Transmission to people results mainly from 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 correlated with outbreaks of legionellosis.

Good preventive maintenance is very important in the efficient operation of cooling towers and other evaporative equipment. Preventive maintenance includes having effective drift eliminators, periodically cleaning the system if appropriate, maintaining mechanical components in working order, and maintaining an effective water treatment program with appropriate biocide concentrations.

In order to ensure that Legionella growth is kept to a minimum, Condition of Certification **PUBLIC HEALTH-1** is necessary. This Condition requires that the project owner prepare and implement a Cooling Water Management Plan to minimize the potential for bacteria growth in the cooling water. (Ex. 100, pp. 4.7-12 – 4.7-13.)

Due to the minimal (and insignificant) changes in lifetime risk at the point of maximum impact and because those minimal risks decrease rapidly with increased distance from the facility, Staff does not expect any significant cumulative impacts to result from the construction or operation of this project.

FINDINGS AND CONCLUSION

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

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. Emissions of criteria pollutants, which are discussed in the **AIR QUALITY** section of this Decision, will be mitigated to levels consistent with applicable standards.

3. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of toxic air contaminants.

4. Emission of non-criteria pollutants from the PEC will not cause acute or chronic adverse public health effects.

5. 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.

6. Emissions from the construction, operation, and closure of the proposed natural gas-burning PEC will not have a significant impact on the public health of the surrounding population.

7. 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.

We therefore conclude that project emissions of noncriteria pollutants do not pose a significant direct, indirect, or cumulative public health risk and that the project will comply with all applicable laws, ordinances, regulations, and standards.

CONDITION OF CERTIFICATION

Public Health-1 The project owner shall develop and implement a Cooling Water Management Plan to ensure that the potential for bacterial growth in cooling water is kept to a minimum. The Plan shall be consistent with either Staff's "Cooling Water Management Program Guidelines" or with 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 CPM for review and approval.

C. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of PEC project will create significant impacts to public health and safety resulting from the use, handling, or storage of hazardous materials. Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts. These include local meteorological Conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. These factors were considered the analysis of potential impacts.[12]

SUMMARY AND DISCUSSION OF THE EVIDENCE

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. These are specified at length in the evidence. (Ex. 100, pp. 4.4-10 — 4.4-11.[13]) In both cases, the goal is to prevent a spill from moving off-site and causing harm. Timely and adequate emergency spill response is also a crucial factor.

Some materials, although present at the PEC, pose a minimal potential for off-site impacts as they will be stored in a solid form or in small quantities, have low mobility, or have low levels of toxicity. These hazardous materials include paint,

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[12] The **Worker Safety** and **Fire Protection** portion of this Decision analyzes the protection of workers from such risks.

paint thinner, cleaners, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, lubricants, and welding flux used during construction of the project. Any impact of spills or other releases of these materials will be limited to the site due to the small quantities involved, the infrequent use and hence reduced chances of release, and/or the temporary containment berms used by contractors. Petroleum hydrocarbon-based motor fuels, mineral oil, lube oil, and diesel fuel are all of very low volatility and represent limited off-site hazard even in larger quantities.

During operations, hazardous chemicals such as hydraulic and lubricating oils and other various chemicals would be used and stored in relatively small amounts and represent limited off-site hazards due to their small quantities, low volatility, and/or low toxicity. (See Ex. 100, **HAZARDOUS MATERIALS** Appendix C for a list of all chemicals proposed to be used and stored at PEC.)

Sodium hypochlorite, sodium hydroxide, and sulfuric acid will be stored on-site but do not pose a risk of off-site impacts because the volumes stored will be less than 5000 gallons, they have relatively low vapor pressures, and down wind concentrations resulting from spills would be confined to the site due to their slow evaporation rates. The do pose a fire risk in certain combinations, however, Condition of Certification **HAZ-5** requires that no combustible or flammable material is stored within 50 feet of the sulfuric acid tank and Condition **HAZ-3** addresses the need to prevent the accidental mixing of sulfuric acid with aqueous ammonia. (Ex. 100, p. 4.4-7.)

Natural gas poses a fire and/or possible explosion risk as a result of its flammability if a release occurs under certain specific Conditions but, due to its

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[13] The pagination of this section of the Final Staff Assessment varies; in the printed version in the record, pages are marked "4.4-##" but in the .pdf version made available via email and the Internet, they are numbered "4.15-##." We use the numbering scheme from the printed version.

tendency to disperse rapidly it is less likely to cause explosions than many other fuel gases, such as propane or liquefied petroleum gas.

While natural gas will be used in significant quantities, it will not be stored on-site. The risk of a fire and/or explosion on-site can be reduced to insignificant levels through adherence to applicable codes and development and implementation of effective safety management practices. The National Fire Protection Association requires 1) the use of double block and bleed valves for gas shut-off; and 2) automated combustion controls. These measures will significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, start-up procedures would require air purging of the gas turbines prior to start-up, thus precluding the presence of an explosive mixture. The safety management plan proposed by the Applicant would address the handling and use of natural gas and significantly reduce the potential for equipment failure due to improper maintenance or human error. (Ex. 100, p. 4.4-8.)

The proposed facility will require the installation of 2,400 linear feet of new off-site gas pipeline. During the evidentiary hearing, Staff testified that its analysis of the safety of the pipeline assumed that it would be constructed, owned and maintained by PG&E. If so constructed and operated, Staff was confident that the pipeline would not be a hazard to persons or property. The Applicant, however, said that it was considering an arrangement in which the portion of the pipeline between the gas meter and the project would be constructed by its (Applicant's) contractor and owned and operated by it as well as an alternative route. Staff said that had it known that PG&E might not be the constructor, owner and operator, it would have required additional information during discovery. Staff did not analyze the alternative route because it understood the Applicant to have withdrawn it from consideration. The record was held open after the evidentiary hearing for Staff to propose additional Condition(s) to specify the appropriate standards for the pipeline's construction and operations. (10/10/07 RT, 32-40.)

Following the evidentiary hearing, Staff and the Applicant agreed to a formulation for a Condition, adopted below as Condition **HAZ-10**. (Exs. 53, 54, 106.) That Condition requires that the pipeline follow a route along West Panoche Avenue and approach the PEC site from the north and that PG&E be the designer, constructor, owner, and operator of the pipeline.

Aqueous ammonia is the only hazardous material that may pose a risk of off-site impacts. It will be used in controlling NOx emissions from the combustion of natural gas in the facility. However, the use of aqueous ammonia poses far less risk than would the much more hazardous anhydrous ammonia (ammonia that is not diluted with water). The accidental release of aqueous ammonia without proper mitigation can result in significant down-wind concentrations of ammonia gas. A single 20,000-gallon capacity above-ground storage tank will be used to store the 19% aqueous ammonia solution.

To assess the potential impacts associated with an accidental release of aqueous ammonia, Staff uses the four "bench mark" exposure levels of ammonia gas occurring off-site. These include: 1) the lowest concentration posing a risk of lethality of 2,000 parts per million (ppm); 2) the Immediately Dangerous to Life and Health (IDLH) level of 300 ppm; 3) the Emergency Response Planning Guideline (ERPG) level 2 of 150 ppm, which is also the RMP level 1 criterion used by EPA and California; and 4) the level considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure is 75 ppm averaged over 30 minutes. An accidental release causing exposures above 75 ppm is unlikely and is not expected to occur during the life of the project.

The Applicant modeled a worst case accidental release of aqueous ammonia in an Offsite Consequence Analysis (OCA). This modeling used a numerical air dispersion model for a worst-case release associated with a failure of the storage tank into the containment area and subsequent flow into the planned subsurface

vault. Staff reviewed the Applicant's aqueous ammonia modeling calculations and conclusions. Staff believes that due to the engineering controls proposed by the Applicant for the storage and transfer of aqueous ammonia, any potential accidental release of aqueous ammonia at the project site will not cause a significant impact and will not represent a significant risk to the public. (Ex. 100, pp. 4.4-8 – 4.4-10.)

Up to 2.4 tanker truck trips per year will be necessary to deliver aqueous ammonia to the facility. At predicted accident rates and taking into account the short distance that the tankers will travel from Interstate-5 to the facility, the risk of a significant spill is an insignificant .48 in a million. Condition **HAZ-5** requires that tanker trucks making deliveries to PEC meet appropriate safety standards. (Ex. 100, p. 4.4-12.)

After a review of data from seismic events in Northridge (2004) and Nisqually, Washington (2001), Staff concluded that failures of hazardous material storage tanks at the PEC site are "not probable and do not represent a significant risk to the public." (Ex. 100, p. 4.4-13.)

To help assure that hazardous materials stored at the site are not accessed by unauthorized persons, we adopt Conditions **HAZ-8** and **-9**, which require Construction and Operations Security Plans, respectively. (Ex. 100, pp. 4.4-13 – 4.4-14.)

Although the power plants in the immediate vicinity will also be using similar materials, the very small risk of any release migrating off site from the PEC site and the even lower risk of simultaneous release from two or more of the plants make any cumulative hazardous material impacts very unlikely and therefore insignificant.

FINDINGS AND CONCLUSIONS

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

1. The PEC will use hazardous materials during construction and operation, including aqueous ammonia and natural gas.

2. The major public health and safety hazard is associated with the catastrophic release of aqueous ammonia. It is the hazardous material which will be stored on-site in reportable quantities.

3. A worst-case catastrophic release of aqueous ammonia will not pose a hazard to the public.

4. Compliance with appropriate administrative, engineering, and regulatory requirements for safe transportation, delivery, and storage of aqueous ammonia will reduce potential risks of accidental release to insignificant levels.

5. 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.

6. The hazardous materials used in the construction and operation of the PEC, when considered in conjunction with those used at other facilities in the project vicinity, will not cumulatively result in a significant risk to the public.

7. Implementation of the mitigation measures described in the evidence 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 the handling, storage, or transportation of hazardous materials.

8. With implementation of the Conditions of Certification, below, the PEC will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management.

We conclude, therefore, that the use of hazardous materials by the PEC will not result in any significant direct, indirect, or cumulative public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix C of the Final Staff Assessment (Exhibit 100) or in greater quantities than those identified by chemical name in Appendix C 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 and storage quantities contained at the facility.

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) (Fresno County Department of Community Health, Environmental Health Division) and the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, 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 CUPA and EPA for information and to the CPM for approval.

Verification: At least 60 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 sixty (60) days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA 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. The plan shall include procedures, protective equipment requirements, training and a delivery procedures checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least sixty (60) days prior to the first delivery of aqueous ammonia 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 ASME Pressure Vessel Code or ANSI K61.6 or to API 620. In either case, the storage tank shall be protected by a secondary containment basin capable of holding 125% of the storage volume or the storage volume plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for

the ammonia storage tank and secondary containment basins shall be submitted to the CPM for review and approval.

Verification: At least sixty (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 project owner shall ensure that no flammable material is stored within 50 feet of the sulfuric acid tank.

Verification: At least sixty (60) days prior to the first receipt of sulfuric acid on-site, the project owner shall provide copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any flammable materials to the CPM.

HAZ-6 The project owner shall direct all vendors delivering aqueous ammonia to the site to use only tanker truck transport vehicles that meet or exceed the specifications of U.S. DOT Code MC-307.

Verification: At least sixty (60) days prior to the first 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 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (from Interstate-5, East on West Panoche Road and south to the PEC access road. Staff believes this is a reasonable route to access the site since it is the shortest and most direct route from Interstate 5. The project owner shall submit any desired change to the approved delivery route to the CPM for review and approval.

Verification: At least sixty (60) days prior to receipt of any hazardous materials on site, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval.

HAZ-8 At least 30 days prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and submitted 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 thirty (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 In order to determine the level of security appropriate for this power plant, the project owner shall prepare a Vulnerability Assessment and submit that assessment as part of the Operations Security Plan to the CPM for review and approval. The Vulnerability Assessment shall be prepared according to guidelines issued by the North American Electrical Reliability Council (NERC 2002), the U.S. Department of Energy (DOE 2002), and the U.S. Department of Justice Chemical Vulnerability Assessment Methodology (July 2002). Physical site security shall be consistent with the guidelines issued by the NERC (Version 1.0, June 14, 2002) and the DOE (2002) and will also be based, in part, on the use, storage, and quantity of hazardous materials present at the facility.

The project owner shall also prepare a site-specific Security Plan for the operational phase and shall submit it to the CPM for review and approval. The project owner shall implement site security measures addressing physical site security and hazardous materials storage. The level of security to be implemented will be determined by the results of the Vulnerability Assessment but in no case shall the level of security be less than that described as below (as per NERC 2002).

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least eight feet high;

2. Main entrance security gate, either hand operable or motorized;

3. Evacuation procedures;

4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;

5. Written standard procedures for employees, contractors and vendors when encountering suspicious objects or packages on-site or off-site;

6. Site personnel background checks, including employee and routine on-site contractors [Site personnel background checks are limited to ascertaining that the employee's claims of identity and employment history are accurate. All site personnel background checks shall be consistent with state and federal law regarding security and privacy];

7. Site access controls for employees, contractors, vendors, and visitors;

8. Requirements for Hazardous Materials vendors to prepare and implement security plans as per 49 CFR 172.800 and to ensure that all hazardous materials drivers are in compliance with personnel background security checks as per 49 CFR 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) 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 guards 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 all of the following:

        1. The CCTV monitoring system required in number 9 above shall include cameras that are able to pan, tilt, and zoom (PTZ), have low-light capability, are recordable, and are able to view 100% 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

        2. 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 the security plant components (e.g., transformers, gas lines, compressors, etc.) depending on circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Council, after consultation with appropriate law enforcement agencies and the applicant.

Verification: At least 30 days prior to the initial receipt of hazardous materials on-site, the project owner shall submit a site-specific Vulnerability Assessment and Operations Site Security Plan are available to the CPM for review and approval.

HAZ 10 The project owner shall enter into one of more agreements with Pacific gas and Electric Company (PG&E) requiring PG&E to utilize one of the two rights-of-way (or routes) along Panoche Road, as identified in the AFC, for the construction of a pipeline to supply natural gas from PG&E's main line to a metering station at the facility. The project owner shall ensure that the agreement specifies that the pipeline and metering station will be designed, constructed, owned, operated, and maintained by PG&E in accordance with all applicable LORS, including Title 49, Code of Federal Regulations, Part 192, all applicable orders of the California Public Utilities Commission governing the design, construction, operation, and maintenance of natural gas pipelines and metering stations, and all applicable Conditions of Certification related to the construction of linear facilities.

Verification: At least 30 days prior to the start of construction of the natural gas pipeline, the project owner shall provide to the CPM a copy of the fully executed agreements(s) between the project owner and PG&E as described above.

D. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. This analysis reviews whether Applicant's proposed health and safety plans will be adequate to protect industrial workers and provide fire protection and emergency response in accordance with all applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

Industrial environments are potentially dangerous during construction and operation activities. Workers at the proposed 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 numerous other injuries. They have the potential to be exposed to falling equipment or structures, chemical spills, hazardous waste, fires, explosions, and electrical sparks and electrocution. In addition, the project site has soil and groundwater contamination. Thus, it is important for the PEC to have well-defined policies and procedures, training, and hazard recognition and control to minimize such hazards and protect workers.

The evidence details the type and content of various plans which will be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. For example, the project owner will develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," which must be reviewed by the Compliance Project Manager prior to project construction and operation, respectively. Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Emergency Action Plans, Fire Prevention Plans, and other general safety procedures will be prepared for both the construction and operation phases of the project. (Ex. 100, pp. 4.14-4 to 4.14-11.) Conditions

of Certification **WORKER SAFETY-1 and -2** ensure that these measures will be developed and implemented. Conditions **WORKER SAFETY-3 and -4** provide for a Construction Safety Supervisor, reporting to the project owner and a Safety Monitor, reporting to the Chief Building Official, to monitor safety conditions during project construction.

During project construction and operation there is the potential for both small fires and major structural fires. Electrical sparks, combustion of fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid at the power plant switchyard, flammable liquids, explosions, and over-heated equipment may cause small fires. Major structural fires in areas without automatic fire detection and suppression systems are unlikely to develop at power plants. Fires and explosions of natural gas or other flammable gasses or liquids are rare.

The project will rely on both on-site fire protection systems and local fire protection services. The on-site fire protection system provides the first line of defense for small fires. In the event of a major fire, fire support services, including trained firefighters and equipment for a sustained response, will be provided by the Fresno County Fire Protection Division, Mendota Station. (Ex. 100, p. 4.14-11.)

During construction, portable fire extinguishers will be located throughout the site, and safety procedures and training will be implemented. Following construction, fire suppression elements in the proposed plant will include both fixed and portable fire extinguishing systems. The fire water will be supplied from the raw water storage tank and delivered to an underground firewater loop with fire hydrants at approximately 300-foot intervals.

A FM-200 fire protection system will be provided for the combustion turbine generators and accessory equipment. The system will have fire detection

sensors that will trigger alarms, turn off ventilation, close ventilation openings, and automatically release the FM-200 gas (Ex. 100, p. 4.14-11).

Conditions of Certification **WORKER SAFETY-1** and **-2** require submittal of final Fire Protection and Prevention Programs to Staff and to the Fresno County Fire Protection Division prior to construction and operation, respectively, to confirm the adequacy of the fire protection measures.

A state-wide survey was conducted by Staff to determine the frequency of emergency medical response (EMS) and fire-fighter response for natural gas-fired power plants in California. Incidents at power plants that require fire or EMS response were found to be infrequent and representing an insignificant impact on the local fire departments, except for rare instances where a rural fire department has mostly volunteer fire-fighting Staff. However, Staff found that the potential for both work-related and non-work related heart attacks exists at power plants. Many of the responses in the survey were for cardiac emergencies involving non-work related incidents, including visitors. The need for prompt response within a few minutes is well documented in medical literature. The quickest medical intervention can only be achieved with the use of an on-site defibrillator; the response from an off-site provider would take longer regardless of the provider's location. Many private and public locations (e.g., airports, factories, government buildings) maintain on-site cardiac defibrillation devices and Staff believes it is prudent to have one at power generation facilities. (Ex. 100, p. 4.14-12.) Condition of Certification **WORKER SAFETY-5** requires that a portable automatic cardiac defibrillator be located on site.

FINDINGS AND CONCLUSIONS

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

1. 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.

2. Conditions of Certification in this section adequately protect construction workers from particulate matter and fugitive dust.

3. The PEC will include on-site fire protection and suppression systems for first line defense in the event of a fire.

4. The Fresno County Fire Protection Division will provide fire protection and emergency response services to the project.

5. 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.

The Commission therefore concludes that implementation of the project owner's Safety and Health Programs and Fire Protection measures will reduce potential impacts to the health and safety of industrial workers to insignificant levels.

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 program with all applicable Safety Orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Fresno County Fire Protection Division, Mendota Station for review and comment prior to submittal to the CPM for approval. All additional programs required under General Industry Safety Orders (8 Cal. Code of Regs., §§ 3200 to 6184), Electrical Safety Orders (8 Cal. Code of Regs., §§2299 to 2974) and Unfired Pressure Vessel Safety Orders (8 Cal. Code of

Regs., §§ 450 to 544) shall be included in the submittal to the CPM.

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 Fresno County Fire Protection Division, Mendota Station 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;
- Hazardous Materials Management Program;
- Fire Prevention Program (8 Cal. Code of Regs., § 3221); and;
- Personal Protective Equipment Program (8 Cal. Code of 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 program with all applicable Safety Orders. The Operation Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Fresno County Fire Protection Division, Mendota Station 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 Fresno County Fire Protection Division, Mendota Station stating the Fire Department's comments on the Operations Fire Prevention Plan and Emergency Action Plan.

WORKER SAFETY-3 The project owner shall provide a site Construction Safety Supervisor (CSS) who, by way of training and/or experience, is knowledgeable of power plant construction activities and relevant laws, ordinances, regulations, and standards, is capable of identifying workplace hazards relating to the construction activities, and has authority to take appropriate action to assure compliance and mitigate hazards.

The CSS shall:

- Have over-all authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA & federal regulations related to power plant projects;

- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations, emergency response reports for injuries, and inform the CPM of safety-related incidents; and
- Assure that all the plans identified in Worker Safety 1 and 2 are implemented.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM the name and contact information for the Construction Safety Supervisor (CSS). The contact information of any replacement (CSS) shall be submitted to the CPM within one business day.

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report to include:

- Record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- Summary report of safety management actions and safety-related incidents that occurred during the month;
- Report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- Report of accidents and injuries that occurred during the month.

WORKER SAFETY-4 The project owner shall make payments to the Chief Building Official (CBO) for the services of a Safety Monitor based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. Those services shall be in addition to other work performed by the CBO. The Safety Monitor shall be selected by and report directly to the CBO, and will be responsible for verifying that the Construction Safety Supervisor, as required in Worker Safety 3, implements all appropriate Cal/OSHA and Commission safety requirements. The Safety Monitor shall conduct on-site (including linear facilities) safety inspections at intervals necessary to fulfill those responsibilities.

Verification: 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 cardiac defibrillator 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.

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 cardiac

defibrillator exists on site and a copy of the training and maintenance program for review and approval.

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 critical biological interest such as unique habitats. The review contained in the record describes the biological resources in the vicinity of the project site and linear alignments, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to mitigate impacts or ensure compliance with applicable laws, ordinances, regulations, and standards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed PEC site is located in the western portion of the San Joaquin Valley in an unincorporated area of western Fresno County, approximately 50 miles west of the City of Fresno and two miles east of Interstate 5. Historically, this portion of the San Joaquin Valley contained many natural habitats that supported a variety of native plant and animal species. However, these natural environments have been largely converted to agricultural and urban land uses. Nearby natural areas, where the majority of the special-status species near the proposed project area have been recorded, are located to the south and west of the project area and include Tumey Hills, Panoche Hills, Ciervo Hills, and Monocline Ridge. The nearest natural area is Tumey Hills, located approximately 4.2 miles west of the proposed PEC site. (Ex. 100, p. 4.2-3.)

Project Site and Vicinity Description

Near the proposed project, agricultural production is the predominant land use, with other mixed uses including urban areas, industrial, and commercial facilities. The proposed PEC site is located adjacent to the northwest corner of the existing

Panoche Substation and two existing power plants. The proposed PEC site (12.8 acres) and laydown area (8 acres) are located within an active pomegranate orchard. The adjacent land uses also support agricultural production and are comprised of active apricot and pomegranate orchards. (Ex. 100, p. 4.2-3.)

Survey of Existing Plants and Wildlife

Biological field surveys were conducted by Applicant on April 21, 2006, in accord with CEC regulations. The reconnaissance field survey included walking through the proposed plant site and construction laydown and parking areas and visually scanning areas within the 1-mile buffer. (Ex. 1, p. 5.6-1.)

Prior to conducting field surveys a review of literature was performed including a search of the California Native Plant Society (CNPS) Inventory of Rare Plants Database, and the California Natural Diversity Database (CNDDB) in order to determine special-status species known to occur or that could potentially occur within the project survey area. (Ex. 1, p. 5.6-2.)

The following USGS 7.5-minute quadrangles were searched for records of special-status species: Hammonds Ranch, Broadview Farms, Firebaugh, Chounet Ranch, Chaney Ranch, Coit Ranch, Tumey Hills, Monocline Ridge, and Levis quadrangle. The project survey area is within the Chaney Ranch, and all of the surrounding quadrangles were searched. (Ex. 1, p. 5.6-2.)

Farming, urbanization, land reclamation, pest control, and other human disturbance have eliminated up to 95 percent of the habitat that once dominated the region. Many of the plants and animals that once ranged widely throughout the southern San Joaquin Valley have been decimated, and now only occur in a few scattered populations in the remaining natural areas.The only native plant species documented during the survey was miner's lettuce (*Claytonia perfoliata*), an understory plant that commonly occurs in orchards within the San Joaquin Valley. (Ex. 100, p. 4.2-3.)

Few wildlife species were observed in the area. Some breeding activity was observed, including mourning doves that were breeding in the pomegranate trees, cliff swallows with nests at the top of the water tank at the southeast corner of the orchard outside of the project area, and an active red-tailed hawk nest in the transformer towers at the Panoche Substation. A coyote was observed moving through the orchard within the project area and two western toads were observed in burrows just outside of the project area to the northwest. A few gopher burrows were observed, but rodent activity was minimal. (Ex. 1, pp. 5.6-3 – 5.6-5.)

Special-Status Species

"Special-status species" include any species that has been afforded special recognition by federal, state, or local resource agencies (e.g., USFWS, CDFG, etc.) and/or resource conservation organizations (e.g., CNPS). The term "special-status species" excludes those avian species solely identified under section 10 of the MTBA for federal protection.

No special-status plant species were observed during the field survey and there are no records in the CNDDB within the project survey area. Several special-status wildlife species are known to utilize agricultural areas in the region and thus have suitable habitat near the proposed PEC site. These species include Swainson's hawk, California horned lark (*Eremophila alpestris actia*), San Joaquin kit fox (*Vulpes macrotis mutica*), burrowing owl (*Athene cunicularia*), and short-eared owl (*Asio flammeus*). (Ex. 100, p. 4.2-4.)

Construction Impacts to Vegetation

Construction impacts to vegetation may occur in a variety of ways, including the direct removal of plants during the course of construction. As these impacts are generally localized and are primarily temporary in nature, they are not usually considered significant unless the habitat type is regionally unique or is known to support special-status species. These activities would result in the disturbance of

approximately 20.8 acres of land (consisting of existing orchards); an estimated eight acres would be temporarily disturbed and approximately 12.8 acres would be permanently disturbed. However, as the proposed project site is located entirely within an active orchard and impacts to native vegetation would not occur, these impacts would be considered less than significant and no mitigation is proposed. Construction-related impacts to the temporary laydown area would be mitigated by restoring the site to agricultural use once construction is complete. Therefore, significant impacts to special-status plant species are not expected to occur from construction of the proposed project. (Ex. 100, p. 4.2-11.)

Construction Impacts to Wildlife

Direct loss of small mammals, reptiles, and other less mobile species could occur during project construction. This would result primarily from the use of construction vehicles and the grading of the project site and laydown areas.

Wildlife may become entrapped in open trenches during construction of the PEC or installation of the natural gas pipeline. As an impact-avoidance and -minimization measure, the Applicant would set up fences around construction zones to prevent the entrapment of wildlife. Fenced areas and trenches would be inspected prior to construction activities each day. Additionally, we adopt Condition of Certification **BIO-9** (Mitigation Management to Avoid Harassment or Harm) which would require the installation of escape ramps within open trenches or covering open trenches at night. Implementation of these measures is expected to mitigate impacts to wildlife.

Birds may nest in the pomegranate trees or other vegetation, which are proposed for removal to construct the PEC. With the exception of a few species, nesting passerines and raptors are protected under the Migratory Bird Treaty Act (MTBA) and are also offered protection by Fish and Game Code, Section 3503. Impacts to nesting species would be considered significant without mitigation. To reduce impacts to breeding birds and ensure compliance with the MTBA and other

LORS, the Applicant has proposed avoidance and minimization measures that prohibit vegetation removal or other invasive ground disturbance between February 1 and August 31. Also, pre-construction surveys would be conducted to identify passerine and/or raptor nests. Implementation of these measures is expected to mitigate impacts to nesting birds that may occur in the project area. (Ex. 100, pp. 4.2-11 – 4.2-12.)

Construction Impacts to Special Status Wildlife Species

Several special-status wildlife species were identified that are known to utilize agricultural habitat and thus have potential to occur in the proposed project area. These species include the short-eared owl (*Asio flammeus*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), California horned lark (*Eremophila alpestris actia*), and San Joaquin kit fox (SJKF) (*Vulpes macrotis mutica*). Of these, only SJKF is expected to occur in the proposed project area.

San Joaquin kit fox, a California threatened and federally endangered species, utilizes agricultural land within the San Joaquin Valley. The proposed PEC site is within the eastern boundary of the northern core population of SJKF, as designated by USFWS. Additionally, the proposed PEC site is located in an area that has been identified by USFWS to be preserved for SJKF habitat connectivity.

Loss of SJKF habitat would be considered significant without mitigation and requires consultation with the USFWS to develop mitigation measures and provisions for incidental take. A Biological Assessment was submitted to USFWS on May 18, 2007, and a Biological Opinion (BO) was issued by the USFWS on August 21, 2007 (Ex. 11). The BO specifies actions that are required to avoid, minimize, or compensate for any potentially significant impacts to SJKF and their habitat. Habitat compensation is also required and USFWS has identified the Krayenhagen Hills Conservation Bank in nearby western Fresno County as a preferred location to purchase mitigation credits at 1.1:1 acres for permanent disturbance and 0.3:1 for temporary disturbance. In the Biological Opinion,

USFWS requires additional protective measures pursuant to the federal ESA consultation process.

Implementation of the following Conditions of Certification will further avoid and mitigate potential impacts to SJKF to less than significant levels: **BIO-4** (Designated Biologist and Biological Monitor Authority), **BIO-5** (Worker Environmental Awareness Program), **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan), **BIO-8** (Impact Avoidance and Minimization Features), **BIO-9** (Mitigation Management of Avoid Harassment or Harm), and **BIO-10** (Habitat Compensation). Condition **BIO-8** contains the general measures from UFSWS Standardized Recommendations for Protection of SJKF Prior to or During Ground Disturbance; the BO expanded on these measures. (Ex. 100, pp. 4.2-12 – 4.2-15.)

Other Construction Impacts

Construction activities have the potential to create a variety of temporary impacts to biological resources including noise and lighting. The existing Wellhead and CalPeak Panoche Peaker Plants, PG&E Substation, traffic on West Panoche Road, and intensive agricultural operations in the immediate vicinity of the proposed PEC site create an elevated ambient noise level to which local wildlife species (including SJKF) have acclimated. As such, construction noise is not expected to adversely impact biological resources. Since night construction would not occur (Ex. 1, p. 5.12-9), excess lighting would not significantly impact wildlife in the vicinity of the proposed PEC site. The Applicant would aim lighting so as to avoid excessive glare and backscatter. Additionally, existing energy facilities provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. (Ex. 100, p. 4.2-15.)

Operations and Maintenance Impacts.

Potential impacts to biological resources as a result of the operations and maintenance associated with the proposed project include air emissions, noise, and collision hazards.

Air Emissions. The operational sources of emissions associated with the proposed PEC include four turbine stacks which will generate emissions from the combustion of natural gas, a stack for the fire suppression pump engine, and the cooling tower. Modeled ground-level concentrations of criteria air pollutants that would be emitted or form from emissions at the proposed PEC site are below levels that would cause violations of the ambient air quality standards or contribute significantly to existing violations. Significance levels for air emissions along with ambient air quality standards are set to protect human health and ecosystems. Apricot and pomegranate orchards in the area are not expected to have a detectable reduction in growth or significant visible damage from salt deposition. Maximum deposition rates due to the PEC operational emissions were conservatively calculated from the predicted peak air pollutant concentrations, and were found to be at nearly undetectable levels within 1,000 feet of the site.

Noise. The existing Panoche Substation and Interstate 5 generate some noise near the proposed PEC site. The PEC would generate a greater level of noise than currently exists in the project area; however, resultant noise level is less than 65 decibels and there are no sensitive wildlife receptors. The potential impacts are therefore less than significant.

Avian collisions and Electrocution. The proposed project includes four 90-foot turbine stacks, a 60-foot cooling tower, and two 80-foot transmission support structures (consisting of a 65-foot tower with 15-foot lightning mast). The proposed transmission support structures are two H- or A-frame dead end take off structures with a 300-foot transmission span.

Bird collisions with power lines and transmission structures generally occur when a power line or other structure transects a daily flight path. 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. These features are not present near the proposed project area. Therefore, we conclude that the PEC transmission structures would not pose a significant collision threat to resident or migratory bird populations.

Red-tailed hawk and other large aerial perching birds, including those offered state and/or federal protection, are susceptible to transmission line electrocution. Because raptors and other large birds often perch on tall structures that offer optimal views of potential prey, the design characteristics of transmission towers/poles are a major factor in raptor electrocutions. 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. Potential impacts to wildlife resulting from electrocution by transmission lines may be mitigated by incorporating the construction design recommendations provided in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* and incorporated in Condition of Certification **BIO-8** which we hereby adopt. Specifically, the phase conductors shall be separated by a minimum of 150 cm (60 in). In addition to the aforementioned separation requirements, Condition of Certification **BIO-8** states that bird perch diverters and/or specifically designed avian protection materials should be used to cover electrical equipment where adequate separation is not feasible (APLIC 2006). With implementation of this mitigation, significant avian mortality due to electrocution by PEC transmission structures is not expected to occur.

Operational Impacts on Special-status Species. The only federally-listed or state-listed threatened or endangered species expected to occur in the project study area is the San Joaquin Kit Fox (SJKF). The mitigation measures and

Conditions of Certification set forth in connection with Construction Impacts will mitigate operational impacts to SJKF to less than adverse.

Impacts to Wildlife Corridors. The project area is located in an area that has been identified by USFWS to be preserved for San Joaquin Kit Fox (SJKF) habitat connectivity. Construction and operation of the project would result in preclusion of SJKF movement through the area, thereby resulting in adverse impacts to SJKF habitat connectivity and movement corridors. Compensation for this loss of habitat, as described in Condition of Certification **BIO-10** (Habitat Compensation), would mitigate impacts to wildlife corridors to less than significant levels. (Ex. 100, p. 4.2-14.)

Parking, Laydown, and Access Road. The proposed parking and laydown area and access road is within the same orchard, so impacts in those areas associated with construction and operations are expected to be the same as those discussed for the PEC. (Ex. 1, pp. 5.6-11 – 5.6-12; Ex. 100, p.p. 4.2-15 – 4.2-17.)

Cumulative Impacts and Mitigation

Cumulative impacts are those that result from the incremental impacts of an action considered with other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over time.

The PEC would permanently remove approximately 12.8 acres and temporarily disturb eight acres of SJKF habitat, requiring consultation with USFWS. In addition to the PEC, there are projects proposed in western Fresno County that require consultation with USFWS regarding impacts to SJKF, including habitat compensation:

- Starwood Power-Midway, LLC has submitted an application to the Energy Commission (06-AFC-10) for the Starwood Power Peaking

Project, which is an 120 MW peaking facility located approximately 0.25 miles east of the proposed PEC site.

- The U.S. Department of Justice, Federal Bureau of Prisons is expected to complete construction of a medium-security Federal Correctional Institution requiring approximately 960 acres of primarily agricultural land (orange orchards) near the City of Mendota, approximately 10 miles east of the proposed PEC site. The federal Biological Opinion was finalized in March 2004 (CEC 2007).

Construction and operation of these projects would adversely affect SJKF, due to habitat destruction and fragmentation. However, consultation with USFWS including habitat compensation at a USFWS-approved mitigation bank is intended to address long-term impacts to this species and compliance with the requirements of Section 7 of the federal Endangered Species Act will mitigate cumulative impacts to SJKF to a level below significant. (Ex. 100, p. 4.2-17.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude as follows:

1. The project site provides little or no habitat value for common or special status plant or animal species.
2. The only special status species known to exist on the project site or along the linear corridors is the San Joaquin Kit Fox.
3. The project, if constructed and operated in compliance with the mitigation measures and Conditions of Certification set forth herein, will not create significant impacts to any special status species.

We therefore conclude that implementation of the Conditions of Certification set forth below ensure that construction and operation of the PEC will not create any significant direct, indirect, or cumulative impacts to biological resources, and that the project will conform with all applicable laws, ordinances, regulations, and standards relating to biological resources.

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 three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval.

The Designated Biologist must at least 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 ten working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

Designated Biologist Duties

BIO-2 The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, 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, to be submitted by the project owner;

3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat;

4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (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 three references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

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), 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 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 (and 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;

3. Present the reasons for protecting these resources;

4. Present the meaning of various temporary and permanent habitat protection measures;

5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

6. Include a training acknowledgment form to be signed by each worker indicating that 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 two (2) copies of 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 submit two copies of the CPM approved materials.

The signed training acknowledgement forms from 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 active project operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan

BIO-6 The project owner shall submit two copies of the proposed Biological Resources Mitigation Implementation and monitoring Plan (BRMIMP) to the CPM (for review and approval) and to USFWS (for review and comment) 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 resources mitigation, monitoring and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion;

4. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;

5. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;

6. All required mitigation measures for each sensitive biological resource;

7. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;

8. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;

9. 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;

10. 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. Include planned timing of aerial photography and a description of why times were chosen;

11. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;

13. All performance standards and remedial measures to be implemented if performance standards are not met;

14. A preliminary discussion of biological resources related facility closure measures;

15. Restoration and revegetation plan;

16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

17. 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 the USFWS and any 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 and the USFWS within five (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 and submitted to the USFWS 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 thirty (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.

Closure Plan Measures

BIO-7 The project owner shall incorporate into the permanent or unexpected permanent closure plan and the BRMIMP, measures that address the local biological resources.

The planned permanent or unexpected permanent closure plan shall address the following biological resources related mitigation measures:

1. Removal of transmission conductors when they are no longer used and useful;

2. Removal of all power plant site facilities and related facilities;

3. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species; and

4. Revegetation of the plant site and other disturbed areas utilizing appropriate seed mixture.

Verification: Draft permanent or unexpected closure measures shall be made part of the BRMIMP. At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources related issues associated with facility closure, and provide final measures, in a Biological Resources Element. The Biological Resources Element shall be incorporated into the Facility Closure Plan and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

Impact Avoidance Mitigation Features

BIO-8 Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources, including:

1. Design, install and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

2. Design, install and maintain transmission lines and all electrical components in accordance with the 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. Eliminate any California Exotic Pest Plants of Concern (CalEPPC) List A species from landscaping plans;

4. Prescribe a road sealant that is non-toxic to wildlife and plants; and

5. 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 thirty (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-9 The project owner shall implement the following measures to manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources. Some of the following measures were adopted from USFWS "Standardized Recommendations for Protection of SJKF Prior to or During Ground Disturbance" (1999).

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 should 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 from the project site;

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 special-status species to the appropriate project representative. Injured animals shall be reported to CDFG and the project owner shall follow instructions that are provided by CDFG. The Sacramento USFWS Office shall be notified in writing within three working days of the accidental death or injury to a SJKF during project related activities. Contact USFWS and CDFG for specific notification procedures;

7. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used; and

8. Project-related vehicles shall observe a 20-mph speed limit in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Off-road traffic outside of designated project areas is prohibited.

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 thirty (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 all biological resource-related mitigation measures have been completed.

Habitat Compensation

BIO-10 The project owner shall provide habitat compensation for temporary and permanent impacts to San Joaquin Kit Fox at a location and amount approved by USFWS.

Verification: No less than 30 days prior to the start of any site or related facilities mobilization activities, the project owner shall submit written verification to the CPM and USFWS that the transaction for habitat compensation has occurred.

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 entire PEC site, the adjacent construction laydown area, and the proposed linear facilities, are located in a predominately agricultural area in western Fresno County. The soils are designated by the California Department of Conservation as Farmland of Statewide Importance. The native soils are in the Panoche Series, which typically slope at 0-2%, with medium runoff. There are no major limitations and few overall limitations for this soil. The hazard of water erosion is slight. (Ex. 100, p. 4.9-9.)

Staff determined that potential environment risks could be mitigated through the use of Best Management Practices (BMPs), a Drainage, Erosion, and Sedimentation Control Plan, a Storm Water Pollution Prevention Plan (SWPPPs), and compliance with General National Pollutant Discharge Elimination System (NPDES) Permits for Discharges of Storm Water Associated with Construction and Industrial Activities that are included in Conditions of Certification **SOIL&WATER-1, -2** and **-3**. (Ex. 100, p. 4.9-16 – 4.9-17.)

2. Water

There are no surface waters or water bodies located within the boundary of the PEC site or construction laydown areas. The California Aqueduct is approximately two miles to the east and Panoche Creek, the main drainage in the area is approximately two miles northwest of site. Site elevation is approximately 420 feet above mean sea level and slopes gently down to the northeast at approximately 1% grade. (Ex. 100, p. 4.9-4, 4.9-10.)

Storm water from the portions of the proposed project site containing industrial activities would be conveyed by overland flow and swales to an infiltration basin located at the southeast corner of the proposed site. The infiltration basin would be sized to capture 85% of the annual storm water runoff from the industrial areas of the proposed site. The infiltration basin is also designed to manage peak storm water runoff during the 100-year 24-hour storm event. Storm water from the areas not containing industrial activities, such as from parking areas, switchyards, administration buildings and open spaces, would run off the site as sheet flow. (Ex. 100, p. 4.9-15.)

3. Project Water Supply and Treatment

The aquifer system in the central part of the western San Joaquin is composed of three layers: an upper, semi-confined aquifer, underlain by a low-permeability aquitard and a lower confined aquifer. The confined aquifer is underlain by a deep succession of marine deposits containing saline water, which are not part of the freshwater aquifer system.

The semi-confined aquifer consists of three hydrogeologic units: Coast Range alluvium, Sierran sand and flood plain deposits. The Coast Range alluvium in this area is dominated by the Panoche Creek fan, one of the two largest alluvial fans on the west side of the valley. The deposits are primarily sand and gravel at the

fanhead and along the stream channels, grading to silt and clay at the fan boundaries. The thickness of the Coast Range alluvium is more than 800 feet along the Coast Ranges and thins to zero near the valley axis where it interfingers with Sierran sand. The Sierran sand consists of medium- to coarse-grained, stream-deposited sand derived from the Sierra Nevada. The Sierran sand is 400 to 500 feet thick along the valley axis and thins to east and west. Flood plain deposits, composed of clay and silt, blanket the Sierran sand in the center of the valley and range in thickness from five to 35 feet (Laudon and Belitz 1989).

The low-permeability aquitard ranges in thickness from 20 feet to 120 feet. The confined aquifer beneath the aquitard consists primarily of poorly consolidated flood plain, deltaic, alluvial fan and lakebed deposits. Each of these deposits has distinct compositional and structural characteristics that determine their ability to transmit water. The deposits are interlayered and their occurrence and distribution determine the variation of permeability and storage within the confined aquifer. In general, coarse- to medium-grained deposits dominate the aquifer adjacent to the Coast Range and grade to deposits primarily composed of silt and clay in the center of the valley. The thickness of the confined aquifer ranges from 570 feet to 2,460 feet.

The primary water supply for the project will be supplied from two new wells drilled into the confined aquifer. The water will be treated as necessary for its specific uses at the facility, using processes such as reverse osmosis and demineralization. Bottled water will be used for employee drinking needs. (Ex. 100, p. 4.9-11 – 4.9-12.)

Process wastewater will be disposed via a deep well injection system extending to a depth of 4,800 to 5,600 feet below the site. The Applicant has applied for an Injection Permit from the United States Environmental Protection Agency. While a final permit has not been issued, a rough draft permit was provided to Staff on

November 1, 2007, and USEPA indicates that the permit requirements are unlikely to change from those in the draft permit. (Ex. 107.) Sanitary wastes from the administration and control building and other restrooms located on site would be disposed of in a septic system and leach field located directly south of the administration and control building. (Ex. 100, pp. 4.9-14 – 4.9-15.)

Staff found no potential water quality impacts from the proposed use of groundwater from the confined aquifer. Its analysis explains why, due to historical use patterns and modern agricultural economics, extensive groundwater pumping is unlikely even if surface water deliveries via the Central Valley Project (CVP) were curtailed. (Ex. 100, p. 4.9-7 – 4.9-8.)

In its Final Staff Assessment, Staff found the Applicant's proposed use of water from the confined aquifer inconsistent with state water policies[14] which allow the use of fresh inland waters for power plant cooling only where alternative water supply sources or cooling technologies are environmentally undesirable or economically unsound. The policies prefer the use of lower quality waters over those of higher qualities. Staff believed that the Applicant should instead draw its water from the semi-confined aquifer, which was of a lower quality than the water in the confined aquifer. (Ex. 100, p. 4.9-26.) In its pre-hearing brief, the Applicant argued to the contrary.

The difference of opinion between Staff and the Applicant was settled, however, prior to the evidentiary hearing. Earlier in the proceeding, the Applicant offered to contribute funds to an agricultural water conservation program operated by the Westlands Water District. Staff initially found the benefits of that program to be insufficient and uncertain. (Ex. 100, p. 4.9-28 – 4.9-29.) In its prehearing testimony the Applicant increased the amount of its contribution from $500,000 to $1,500,000. (Ex. 40, Answer 15.)

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[14] State Water Resources Control Board Policy 75-58 and the Energy Commission's *2003 Integrated Energy Policy Report.*

Westlands Water District's Expanded Irrigation System Improvement Program (EISIP) offers low interest loans to water users and land owners for the design, lease-purchase, and installation of water conserving micro-irrigation systems. The program began in 2000 and has steadily increased its effectiveness since then. Currently, the program is supported with a revolving fund on the order of about $10 million which allows for about 25% or $2.5 million per year to be made available for funding new or ongoing conservation efforts using funds returned to the account from farmer's loan payments over a 4-year term.

The micro-irrigation systems tend to have a service life of about 8 years before needing replacement. At that time, farmers may apply for a new low interest loan (at 3.1% annually) to replace their system. Many of the new installations of micro-irrigation, such as using buried drip tape, are replacing furrow irrigation practices of row crops with potential for significant water conservation benefits. The EISIP lease may be executed for up to $130,000, and after requiring a 20% deposit from the farmer, $104,000 may be financed with the low-interest loan. The irrigation improvements for each loan are normally applied to a 160-acre parcel (1/4 of a square mile).

If the Applicant contributed $1,500,000 to the EISIP, about 15 additional leases could be created, applying more efficient irrigation to about 2,400 acres (3.75 square miles). Based on Westland Irrigation District's experience and studies in the agricultural industry, the annual water savings over the first 4 years after implementation would be about 628 acre-feet/year (AFY). With the loans being repaid in 4 years, the funds could be reallocated and applied during Year 5 to an additional 15 parcels resulting in an additional 628 AFY for a total water conservation of 1,256 AFY during years 5 – 8 of PEC's project operation. Assuming after 8 years the micro irrigation equipment needed replacement for the parcels initially funded, the cycle could be repeated to maintain micro irrigation indefinitely for about 30 parcels (4,800 acres) and water conservation of about 1,256 AFY. The Applicant would draw up to 1,154 AFY from the confined

aquifer; thus the Applicant's EISIP contribution would result in net conservation of about 9% more water than the PEC would use annually starting in year 5 and thereafter. This estimate assumes maximum water use possible by PEC based on an annual operation of 5,000 hours per year. **Soil and Water Resources – Table 1**, below, provides a cumulative accounting of the Applicant's water use and the expected conservation from the Applicant's contribution to the EISIP.

SOIL AND WATER RESOURCES –Table 1
Cumulative Accounting of PEC's Proposed Water Use of the Confined Aquifer Compared to Conservation of CVP Water

End of Year	PEC's Avg. Annual Water Use (AFY)	PEC's Cumulative Water Use (AF)	Annual CVP Water Savings from Applicant's Contribution to EISIP (AFY)	Cumulative CVP Water Savings from Applicant's Contribution to EISIP (AF)
Construction			628	628
1	1,154	1,154	628	1,256
2	1,154	2,308	628	1,884
3	1,154	3,462	628	2,512
4	1,154	4,616	1,256	3,768
5	1,154	5,770	1,256	5,024
6	1,154	6,924	1,256	6,280
7	1,154	8,078	1,256	7,536
8	1,154	9,232	1,256	8,792
9	1,154	10,386	1,256	10,048
10	1,154	11,540	1,256	11,304
11	1,154	12,694	1,256	12,560
12	1,154	13,848	1,256	13,816
13	1,154	15,002	1,256	15,072
14	1,154	16,156	1,256	16,328
15	1,154	17,310	1,256	17,584
16	1,154	18,464	1,256	18,840
17	1,154	19,618	1,256	20,096
18	1,154	20,772	1,256	21,352
19	1,154	21,926	1,256	22,608
20	1,154	23,080	1,256	23,864

The cumulative volume of CVP water conserved begins exceeding the cumulative water used by PEC during the 13th year of PEC operation. By Year 20, the cumulative volume of CVP water conserved exceeds the cumulative

water used by PEC by 764 AF. Historic data suggests that a peaking facility such as PEC is likely to operate at less than the maximum numbers of hours assumed in the above analysis, resulting in even greater conservation of CVP water relative to the amount of water used by the facility.

Staff now finds the use of the confined aquifer consistent with state water policy because the quantity of higher quality CVP water conserved will exceed the amount of lower quality water the Applicant withdraws from the confined aquifer. (Ex. 104.) Condition of Certification **Soil & Water-9** requires that the Applicant participate in the EISIP as it has proposed.

FINDINGS AND CONCLUSIONS

Based upon the evidence, we find and conclude as follows:

1. The Applicant will submit an erosion control plan for the construction phase of the project which identifies best management practices to be used to control erosion and the discharge of storm water off-site. If implemented these measures will ensure that no significant impacts occur to area soils.
2. Use of water from the confined aquifer in combination with the Applicant's contribution of funds to the Westland's Water District Agricultural Water Conservation Program is consistent with the state water policies for the conservation of potable water supplies.
3. The Conditions of Certification, below, are adequate to ensure that construction and operation of the PEC will not create significant impacts regarding **Soil and Water Resources**.

We therefore conclude that the project will conform with all applicable laws, ordinances, regulations, and standards and will not cause any significant environmental impacts regarding soil and water resources.

CONDITIONS OF CERTIFICATION

SOIL & WATER-1 The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan for the construction of the entire PEC project (Construction SWPPP).

Verification: The project owner shall submit copies to the Compliance Project Manager (CPM) of all correspondence between the project owner and the Regional Water Quality Control Board (RWQCB) regarding the General NPDES permit for the Discharge of Storm Water Associated with Construction Activities within 10 days of its receipt (when the project owner receives correspondence from the RWQCB) or within 10 days of its mailing (when the project owner sends correspondence to the RWQCB). This information shall include copies of the Notice of Intent sent to the State Water Resources Control Board, and the Notice of Termination for the project.

SOIL & WATER-2 Prior to site mobilization, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion and Sedimentation Control Plan (DESCP) that ensures protection of water quality and soil resources of the project site and all linear facilities for both the construction and operations phases of the project. This plan shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in off-site flooding potential, include a storm water retention basin to capture any storm water potentially leaving the site, meet local requirements, and identify all monitoring and maintenance activities. The DESCP shall contain the following elements:

Vicinity Map – A map shall be provided indicating the location of all project elements with depictions of all significant geographic features to include watercourses, washes, irrigation and drainage canals, and sensitive areas.

Site Delineation – The PEC site and all project elements shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities.

Watercourses and Critical Areas – The DESCP shall show the location of all nearby watercourses including washes, irrigation and drainage canals, and drainage ditches. Indicate the proximity of those features to the PEC construction site.

Drainage – The DESCP shall provide a topographic site map showing all existing, interim and proposed drainage systems; drainage area boundaries and water shed sizes in acres; and the hydraulic analysis to support the selection of Best Management Practices (BMPs) to divert offsite drainage around or through the site and laydown areas. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet in flat terrain.

Clearing and Grading – The plan shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections or other means. The locations of any disposal areas, fills, or other special features shall also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography. The DESCP shall include a statement of the quantities of material excavated or filled for each element of the Panoche project (for example, project site, transmission corridors, and pipeline corridors), whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported or a statement explaining that there will be no clearing and/or grading conducted for each element of the PEC Project.

Project Schedule – The DESCP shall identify on the topographic site map the location of the site specific BMPs to be employed during each phase of construction (initial grading, project element excavation and construction, and final grading/stabilization). Separate BMP implementation schedules shall be provided for each project element for each phase of construction.

Best Management Practices – The DESCP shall show the location, timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, during project element excavation and construction, final grading/stabilization, and post-construction. BMPs shall include measures designed to control dust and stabilize construction access roads and entrances. The maintenance schedule should include post-construction maintenance of treatment control BMPs applied to disturbed areas following construction.

Erosion Control Drawings -- The erosion control drawings and narrative must be designed and sealed by a professional engineer/erosion control specialist.

Verification: No later than 90 days prior to start of site mobilization, the project owner shall submit a copy of the plan to Fresno County for review and comment, and a copy to the CPM no later than 60 days prior to the start of site

mobilization for review and approval. The CPM shall consider comments received from Fresno County. During construction, the project owner shall provide an analysis in the monthly compliance report on the effectiveness of the drainage, erosion and sediment control measures and the results of monitoring and maintenance activities. Once operational, the project owner shall provide in the annual compliance report information on the results of monitoring and maintenance activities.

SOIL & WATER-3 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 and implement a Storm Water Pollution Prevention Plan for the operation of the PEC site (Operational SWPPP).

Verification: At least 30 days prior to commercial operation, the project owner shall submit copies to the CPM of the Operational SWPPP for the entire PEC site. Within 10 days of its mailing or receipt, the project owner shall submit to the CPM any correspondence between the Project Owner and the RWQCB about the General NPDES permit for Discharge of Storm Water Associated with Industrial Activity. This information shall include a copy of the Notice of Intent sent by the project owner to the State Water Resources Control Board and the Notice of Termination. A letter from the RWQCB indicating that there is no requirement for a General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity will satisfy this condition.

SOIL & WATER-4 The project owner will comply with Chapter 15.48 of Title 15 of the Fresno County Ordinance Code, regarding flood hazard and base flood elevation.

Verification: The project owner will submit a letter from Fresno County to the CPM in which it is stated that the project has complied with the counties flood elevation requirements. Proof of compliance must be provided to the CPM prior to the start of site mobilization. A letter from Fresno County in which it is stated that the project is not within a flood hazard area can satisfy this condition.

SOIL & WATER-5 The project owner will comply with the requirements of the Fresno County Department of Health and Safety, Fresno County Ordinance Code 8.50.050 4-B, regarding permits for sanitary waste disposal facilities such as septic systems and leach fields.

Verification: The project owner will submit a letter in which it is stated that the project has complied with the counties sanitary waste disposal facilities requirements. Proof of compliance must be provided to the CPM sixty days prior to the start of operation.

SOIL & WATER-6 The project owner shall provide the CPM with evidence of Waste Discharge Requirements (WDR) from the RWQCB and a Class 1 Non-hazardous UIC permit for six deep injection wells issued by the U. S. Environmental Protection Agency (USEPA)

prior to construction of any deep injection well. The project owner must comply with the specific conditions regarding the construction and operation of the injection wells including the water quality requirements for wastewater, sampling, analysis, and monitoring for the deep injection wells. Changes to the design, construction or operation of the deep injection wells permitted by the WDRs and UIC Class 1 Permit during either construction or operation will be noticed in writing to the CPM, RWQCB, and USEPA Region IX. The project owner will notify the CPM in writing of changes to the WDRs or UIC Class 1 Permit that are instituted by either the Applicant, RWQCB or USEPA Region IX, including permit renewals.

Verification: Thirty days prior to construction of any deep injection well, the project owner will obtain and submit to the CPM a copy of final WDRs issued by the RWQCB and the final approval of the UIC Class 1 Permit issued by USEPA Region IX for the construction and operation of the deep injection wells. During the life of the project, the Project Owner will provide the CPM with the annual monitoring report summary required by the WDRs and UIC Class 1 Permit, and will fully explain violations, exceedances, enforcement actions or corrective actions.

SOIL & WATER-7 The project owner shall provide two (2) copies of the final well permit required and issued by the County of Fresno for the construction and/or operation of the water supply wells. The project shall not construct these wells or extract and use any groundwater without the final permit in place. The project owner shall provide the CPM with two (2) copies of all monitoring or other reports required by the County of Fresno, as well as any changes made related to the operation of these wells.

Verification: No later than fifteen (15) days prior to the construction of the supply wells, the project owner shall submit copies of the final permit(s) to the CPM. The project owner must submit all copies of permit changes to the CPM within ten (10) days of their submittal to the County of Fresno. The project owner shall submit any related monitoring required by the County of Fresno to the CPM in the annual compliance report. The project owner shall submit any notice of violations from the County of Fresno to the CPM within ten (10) days of receipt and fully explain the corrective actions taken in the next monthly compliance report or annual compliance report. For calculating the total water use, the term "year" will correspond to the date established for the annual compliance report submittal.

SOIL & WATER-8 The project owner shall use groundwater from the confined aquifer supplied from on-site project wells as its water supply for landscape irrigation and all process uses including fire protection, plant service water, cooling tower makeup, combustion turbine NOx injection

and combustion turbine inlet air evaporative cooler makeup. Prior to the use of groundwater during commercial operation for cooling and process water, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the total volume(s) of water supplied to the Panoche Energy Center from groundwater. Those metering devices shall be operational for the life of the project. The project's water use shall not exceed 2,500,000 gallons a day or 1,154 acre-feet per year. The project owner shall prepare an annual Water Use Summary, which will include the monthly range and monthly average of daily non-potable water usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. The project owner shall record on-site potable water use on a monthly basis. For subsequent years, the annual Water Use Summary shall also include the yearly range and yearly average water use by the project. The project owner shall submit the annual Water Use Summary to the CPM as part of the annual compliance report. If the amount of water that is to be used by PEC will exceed 2,500,000 gallons a day or 1,154 Acre-feet per year during any annual reporting period, the project owner shall provide a written request and explanation for the anticipated water-use increase to the CPM sixty (60) days prior to the date when the water-use limit is expected to be exceeded. If the project owner can demonstrate that the requested increase is necessary and is not caused by wasteful practices or malfunctions in the water processing systems, the CPM shall approve an up to one-year increase in the water-use limit for the period requested.

Verification: At least sixty (60) days prior to commercial operation of Panoche Energy Center, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the groundwater supply and distribution system.

The project owner shall submit a Water Use Summary to the CPM in the annual compliance report. The project owner shall provide a report on the servicing, testing and calibration of the metering devices in the annual compliance report.

SOIL & WATER-9 Prior to site mobilization, the project owner shall provide a copy of an executed agreement with Westlands Water District (Westlands) and evidence of its one-time payment of $1.5 million to Westlands for the purpose of conserving fresh water at an average of, or greater than, 1154 ac-ft of water per year over the life of the project through the Expanded Irrigation System Improvement Program (EISIP). The executed agreement shall include provisions for the following:

1. A term of the agreement equal to the life of the PEC project;

2. An annual report for the life of the PEC indicating the number and acreage of parcels involved in the EISIP for the current and previous years since EISIP inception in 2000, the total funding provided to the EISIP program and an estimate of fresh water conserved.
3. The annual account balance in the PEC's funded EISIP account;
4. The Project Owner shall be responsible for obtaining from Westlands Water District all data or other information necessary to conduct the annual water savings review; and
5. In the event Westlands Water District discontinues the EISIP, the funds represented by Applicant's contribution shall be allocated to other conservation or similar programs. Any such re-allocation shall first be submitted to the Energy Commission for approval.

Verification: Prior to site mobilization for construction of Panoche Energy Center, the project owner shall submit to the CPM a copy of an executed agreement with Westlands and evidence of its one-time payment of $1.5 million to Westlands for the purpose of conserving fresh water through the EISIP. The project owner shall include in its Annual Compliance Report the following information regarding the use of the PEC contributed funds:

1. The number and acreage of parcels involved in the EISIP for the current and previous years since EISIP inception in 2000, and an estimate of fresh water conserved.

2. The end-of-year account balance in the PEC's funded EISIP account;

3. For the current and previous years since the inception of the EISIP; the total number and acreage of parcels involved in the EISIP, the funding provided through the EISIP program, and an estimate of annual fresh water conserved;

4. A general description for each loan funded by the Westlands Water District's EISIP during the previous calendar year including the following:

    i. The date and amount of the loan;

    ii. The change in the irrigation practice from before to after implementation of the irrigation conservation measure (as would apply for new conservation measures compared to replacements-in-kind); and

    iii. The type of new equipment installed or modifications to existing equipment.

C. CULTURAL RESOURCES

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. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

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. Resources Code, § 5024.1; Cal. Code of Regs., tit. 14 § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. Since there is often a five year lag between resource evaluation and the date that eligibility is decided, cultural resources specialists may use 45 years as a criterion for considering potential eligibility.[15]

The CEQA Guidelines define a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR", or "a resource listed in a local register of historical

[15] The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1 (g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." [Cal. Code of Regs., title 14, §15064.5(a)]. Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. [Pub. Resources Code, § 5024.1(d).]

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, is associated with the lives of persons significant in our past (Criterion 2); or, that embodies the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values (Criterion 3); or, that has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). [Pub. Resources Code §5024.1.] In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association. [Cal. Code of Regs., title 14, §4852(c); Public Resources Code sections 5020.1 (j) or 5024.1.] Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The project area is located in the western San Joaquin Valley, in the Central Valley Physiographic Province of California, at an elevation of about 420 feet above mean sea level. The local terrain is nearly flat, with a very gradual upslope to the northeast toward Panoche Creek, the source of the alluvial fan on which the proposed site is located.

The 12.8-acre project site and adjacent 8-acre construction laydown area are currently planted with pomegranate trees. The Panoche Substation is located at the northeast corner of the proposed plant site, and the existing CalPeak Plant is on the east side of the substation. The proposed Starwood Power Project would be constructed on a parcel just east of the substation, and the existing Wellhead plant is located just south of the proposed Starwood Power parcel. There are three groupings of residential/agricultural buildings in the immediate area: a group of three small residences across West Panoche Road from the proposed PEC plant, a residential "five-plex" located between the proposed Starwood plant and West Panoche Road, and a grouping of agricultural buildings on the north side of West Panoche Road, about .5 mile east of the proposed PEC plant. Near the project site, three 230-kV transmission lines and a natural gas pipeline run approximately southeast-to-northwest, the transmission lines running between the proposed plant site and the substation, and the gas pipeline running just west of the agricultural complex. The substation, power plants, and existing linear facilities comprise a small light industrial cluster in what is otherwise a great unbroken expanse of agriculture. (Ex. 1, pp. 3.1 – 3.2; Ex.100, p. 4.3-4.)

Construction would be at about one to three feet above existing grade with imported fill used to establish finish grade. (Ex. 1, p. 3-33.) The geotechnical study of the plant site recommends that the surface soils either be stripped and replaced to a maximum of ten feet, if mat foundations are to be used, or driven

pile foundations be used without soil improvement. The excavations for foundations and for the underground piping could dig down through native soils or through as much as 13 feet of fill soils, depending on which part of the site is being excavated and foundation types ultimately chosen. Project excavations could therefore extend into undisturbed, native soils. (Ex. 1, Appendix L, pp. 9-10, 14.) Fill soils to raise the proposed plant site grade would be obtained from a commercial site, but removed site soils would be disposed of "as topsoil in yet-to-be-determined nearby agricultural settings." (Ex. 3.)

The proposed 16-inch-diameter, 2,400-foot-long underground natural gas pipeline would run north from a new metering station on the east side of the proposed plant site and exit the plant site at the northeast corner. It would then run northwest parallel to the 230-kV line, turn east and run along the south side of West Panoche Road to tap into a PG&E trunk line about 1,100 feet away. An alternate route would follow much the same course, except that it would run along the north side of West Panoche Road. The construction would be open-trench, with excavations to four feet in depth and 18 inches extending to up to 8 feet at the surfacein width, extending to (Ex. 1, pp. 3-40 – 3-41; Ex. 3.)

The proposed 230-kV overhead interconnection line route would run about 300 feet in length, from the northeast corner of the proposed plant site to the tie-in at the Panoche Substation. To accommodate this interconnection at the substation, the existing 230-kV bus would have to be extended. This expansion would entail the acquisition by PG&E of a 2.5-acre parcel of land, to the south of the existing 230-kV bus. (Ex. 1, pp. 3-34 to 3-37.)

2. Cultural Resources

The Applicant's records search at the California Historical Resources Information System (CHRIS) South San Joaquin Valley Information Center (SSJVIC) at California State University, Bakersfield, sought to identify all known cultural

resources located within the boundaries of the proposed plant site, the laydown area, the substation expansion, and within a 0.5-mile-wide area of these parcels. The records search (SSJVIC file No. 06-160) sought information on any previously identified prehistoric and historic archaeological sites, historic architectural properties, and Native American sacred sites in the 0.5-mile study area for the plant site, laydown area, substation expansion, and appurtenant linear facilities. (Ex. 1, pp. 5.7-9 to 5.7-12.)

The Applicant's consultants reviewed known inventories of historic properties to identify any known or evaluated historic-period standing structures in the study area. They reviewed the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the list of California Historical Landmarks, and the list of California Points of Historical Interest. They consulted with the Fresno County Assessor's Office, Fresno County Clerk's Office, the Fresno County Planning Department, and the First American Real Estate Property Solutions. They also researched local and regional history at the California State Library, the Shields Library at the University of California, Davis, the Central Library of the Fresno County Public Library System, and the Henry Madden Library of California State University at Fresno. They also conducted a field survey of the study area. No archeological resources were found in the study area and Staff found the soils obtained during 20 borings for a geotechnical study to be "not consistent in color, composition, or content with the kinds of soils usually indicative of archaeological deposits." (Ex. 100, p. 4.3-16.)

Several resources were evaluated for potential eligibility for the California Register of Historical Resources but found ineligible:

- Three buildings older than 45 years (a large storage building, a residence, and an auxiliary building) in the agricultural complex at 43405 West Panoche Road, known historically as Chaney Ranch;
- A cluster of five farm worker houses located in the northwest corner of Section 5;

- Another cluster of three farm worker houses located north of and just across West Panoche Road from the proposed project site;
- West Panoche Road itself; and
- The Panoche Substation.

Although older than 45 years, none of the above resources were associated with any significant historical event or person or possessing architectural merit or distinction. (Ex. 100, p. 4.3-17.)

The Native American Heritage Commission reported no known Native American cultural resources in its sacred lands database. Solicitations for information or expressions of interest in the project sent to 21 Native American representatives in December, 2006 yielded no responses. (Ex. 100, p. 4.3-18.)

3. Potential Impacts

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, and 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 historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and 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.

Although no significant known archaeological resources have been identified in any of the areas affected by project construction, subsurface disturbance, during construction has the potential to disturb as yet unknown archaeological resources. Procedures for identifying, evaluating, and mitigating these potential impacts must therefore be included in the Conditions of Certification.

A Cultural Resources Specialist, Cultural Resources Monitors, and Cultural Resources Technical Specialists will be employed to monitor construction activities (**CUL-1**), aided by project-owner provided information about the project (**CUL-2**), and guided by a Cultural Resources Monitoring and Mitigation Plan (**CUL-3**). Following completion of ground disturbance, a Cultural Resources Report will be prepared (**CUL-4**).

If newly found resources are eligible for the CRHR, the direct impacts from construction could materially impair the resources. Appropriate mitigation measures, such as avoidance or assessment and data recovery, will be implemented to reduce that impact to less than significant. Provisions for this eventuality are contained in Conditions of Certification (see **CUL-5, CUL-6, CUL-7** and **CUL-8)** requiring that construction workers be trained, as part of the Worker Environmental Awareness Program, to recognize archaeological resources; that construction be monitored by a qualified cultural resources specialist and an interested Native American, if necessary, and halted if archaeological resources are encountered; that finds be evaluated for significance; and that data recovery be carried out if impacts cannot be avoided.

During the Evidentiary Hearing, Staff was asked whether the cultural resources worker training required (**CUL-5**) for all workers was necessary in light of the geological and paleontological resources requirement that only "workers who are involved with or operate ground disturbing equipment or tools" be trained (Condition **GEO-4**). Staff witness Beverly Bastian described Staff's approach as "conservative," maximizing the number of trained eyes looking out for cultural resources unearthed during construction. Were each person working on the construction site not trained, she suggested that additional Cultural Resource Monitors might be necessary in order to assure that any cultural resources that are discovered are properly assessed and dealt with. (10/10/07 RT, 24–28.) We note, however, that condition **CUL-6** requires "full time" monitoring of all construction activities, with "at least one monitor per excavation area where machines are actively removing native soils" and "[i]f an excavation area is too large for one monitor to effectively observe the soil removal, one or more additional monitors shall be retained to observe the area."

While the Cultural Resources Specialist may propose a different level of monitoring to the Compliance Project Manager, which would allow for the reduction (or increase) of monitoring efforts, it appears that at least initially both the trained construction workers and cultural monitors will be on the job in full force; providing training for all workers does not appear to result in a reduced need for cultural monitors. The Applicant has not objected to these requirements, however, and we will leave further exploration of this issue for a later case.

Following the Evidentiary Hearing, Staff proposed clarifying changes to the training requirement, making it clear that only workers who will be on the project or linear sites up to the time that ground disturbance and landscaping are completed, must receive the training. We have incorporated those clarifications into Condition **CUL-5**. (Ex. 106.)

4. Cumulative Impacts

Cumulative impacts to historic architectural resources (structures or districts) in the project vicinity may occur if the construction of other projects results in increasing numbers of structures of historic age being demolished. Here, no such structures have been identified.

The construction of other projects in the same vicinity, such as the Starwood project currently under consideration by the Commisssion, could affect also unknown subsurface archaeological deposits (both prehistoric and historic). These impacts can be mitigated to less than significant levels by implementing mitigation measures requiring construction monitoring, evaluation of resources discovered during monitoring, and avoidance or data recovery for resources evaluated as significant. (Ex. 100, p. 4.3-26.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings:

1. Construction activities associated with the PEC project and related facilities present a potential for adverse impacts to cultural resources.
2. Impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.
3. The project owner will provide cultural resources monitor(s) with authority to halt construction if unknown resources are discovered.
4. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative impacts to cultural resources resulting from project-related activities will be insignificant.

The Commission therefore concludes 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.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance,[16] 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 ground disturbance or construction shall occur prior to CPM approval of the CRS, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for non-compliance on this or other projects.

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. At least three years of archaeological or historic, as appropriate, resources mitigation and field experience in California.

3. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the

[16] For purposes of these Cultural Resources conditions, "ground disturbance" includes "preconstruction site mobilization," "construction ground disturbance," and "construction grading, boring and trenching" as defined in the Compliance and Closure general conditions.

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 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: At least 45 days prior to the start of ground disturbance, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural documents, field notes, photographs, and other cultural materials generated by the project.

At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition. If additional CRMs are obtained during the project, 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.

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.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources Conditions.

CUL-2 Prior to the start of ground disturbance, if the CRS has not previously worked on the project, the project owner shall provide the CRS with copies of the AFC, data responses, and confidential cultural resources reports for the project. 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 USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities.

If construction of the project would 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 project 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 or construction shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

Verification: At least 40 days prior to the start of ground disturbance, 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 will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

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.

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.

On a weekly basis during preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, and construction, a

current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

Within five days of identifying changes, the project owner shall provide written notice of any changes to scheduling of construction phase.

CUL-3 Prior to the start of preconstruction site mobilization, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall 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 preconstruction site mobilization, construction ground disturbance, construction grading, boring and trenching, or construction 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 will be prepared for any resource where data recovery is required.

2. The following statement 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 of the project.

4. Identification of the person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between project construction management and the mitigation and monitoring team.

5. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities.

6. A description of all impact-avoidance measures (such as flagging or fencing), to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The description shall address how these measures would be implemented prior to the start of construction and how long they would be needed to protect the resources from project-related effects.

7. A statement that all cultural resources encountered shall be recorded on a DPR form 523 and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, and data recovery) shall be curated in accordance with the California State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum.

8. A statement that the project owner will pay all curation fees and a copy of an agreement with, or other written commitment from, a curation facility to accept artifacts from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

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: At least 30 days prior to the start of ground disturbance, the project owner shall submit the subject CRMMP to the CPM for review and approval. Ground disturbance or construction may not commence until the CRMMP is approved, unless such activities are specifically approved by the CPM.

At least 30 days prior to the start of ground disturbance, a letter shall be provided to the CPM indicating that the project owner agrees to 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 CPM for approval. The CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. 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 Historical Resources 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.

Verification: Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

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.

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 ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers at the project site and on the linear facilities 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, including landscaping, is completed. 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 would 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 they have received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance or construction shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification: At least 30 days prior to the beginning of 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, and the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

On a monthly basis, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of persons workers at the project site and on the linear facilities 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 ground disturbance full time at the project site and linear facilities and ground disturbance full time at laydown areas or other ancillary areas, to ensure there are no impacts to undiscovered

resources (Discovery) and to ensure that known resources are not impacted in an unanticipated manner. Specifically, an archaeologist shall monitor the initial tree removal and soil stripping at the proposed plant site; the excavation of all foundation holes; and the excavation of the trenches for the natural gas pipeline, the process water pipelines, and the wastewater pipelines.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of all native-soil–removing activities on the construction site, or along the linear facility routes, or at the soil disposal site for as long as the activities are ongoing. Full-time archaeological monitoring shall require at least one monitor per excavation area where machines are actively removing native soils. If an excavation area is too large for one monitor to effectively observe

the soil removal, one or more additional monitors shall be retained to observe the area.

In the event that the CRS determines 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 to the CPM by the CRS as directed 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 resources monitoring and mitigation activities with Energy Commission technical Staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate

monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

Upon becoming aware of 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 are discovered. Informational 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 is being monitored.

Verification: At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log. While monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related monitoring prepared by the CRS.

Daily, 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. If the CRS concludes that daily reporting is no longer necessary, a letter or e-mail providing a detailed justification for the decision to reduce or end daily reporting shall be provided to the CPM for review and approval at least 24 hours prior to reducing or ending daily reporting.

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, 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. 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 AM on Friday and 8:00 AM on Sunday morning, including a description of the Discovery (or changes in character or attributes), the action taken (i.e. work stoppage or redirection), a recommendation of 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 DPR 523 form shall include a recommendation on the significance of the find. The project owner shall submit completed forms to the CPM.

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: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt 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 AM on Friday and 8:00 AM on Sunday morning.

Completed DPR form 523s 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 is more appropriate for the subject cultural resource, as determined by the CRS.

CUL-8 As soon as a disposal site for removed plant-site soils is selected, and prior to the start of pre-construction site mobilization, the CRS shall undertake or supervise the surface survey of the disposal site for archaeological deposits. If no such are identified, soil disposal at the selected site may proceed with no restrictions. If any such are discovered, the CRS shall undertake or supervise the recording of all discovered sites on DPR 523 "Primary" forms, provide recommendations regarding their eligibility for the CRHR in the "Description" field of the form, and provide a letter report of the

survey's personnel, methods, and findings, along with the completed forms, to the CPM. If any cultural resources are identified at the chosen soil disposal site, no soil disposal activities shall begin there before CPM approval of the letter report and any accompanying forms, unless such activities are specifically approved by the CPM.

Verification: After the selection of the removed-soils disposal site, and at least 30 days prior to the start of preconstruction site mobilization, the project owner shall ensure that the CRS submits to the CPM a letter report of the conduct and results of the archaeological survey of that site, along with any completed DPR 523 forms with recommendations regarding the eligibility of the recorded resources.

D. GEOLOGY AND PALEONTOLOGY

This section reviews the project's potential impacts on significant geological and paleontological resources. It also evaluates whether project-related activities could result in exposure to geological hazards, whether the facility can be designed and constructed to avoid any such hazards, and whether geologic or mineralogic resources are present. The analysis also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present.

There are two types of impacts considered in this section. The first are geologic hazards, which could impact proper functioning of the proposed facility and include faulting, seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils and landslides. The second type of impacts is those the proposed facility could have on existing geologic, mineralogic, and paleontologic resources.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The PEC site is located in California's Central Valley. The northern one-third of the valley is known as the Sacramento Valley, while the southern two-thirds are known as the San Joaquin Valley. The proposed site is in the western San Joaquin Valley, in an unincorporated area of western Fresno County, approximately 50 miles west of the City of Fresno and two miles east of Interstate 5. The Central Valley is bounded on the north by low-lying hills; on the northeast by a volcanic plateau of the Cascade Range; on the west by the Coast Ranges; on the east by the Sierra Nevada; and on the south by the Coast Ranges and the Tehachapi Mountains.

The Applicant provided documentation of potential geologic hazards at the PEC plant site, in addition to subsurface exploration information. Applicant's data, coupled with Staff's independent research, indicates that the potential for impact

to the plant site from ground rupture, liquefaction, subsidence, settlement, expansive soils, and flooding is low. (Ex. 1, pp. 5.3-12, 13, 16, 17.) There exists the potential for impact due to earthquake-induced ground shaking; this potential can be minimized through facility design such that these potential hazards should not affect operation of the facility.

Staff's research included review of available geologic maps, reports, and related data for the PEC plant site. Geological information was available from the California Geological Survey (CGS), California Division of Mines and Geology (CDMG), and other governmental organizations. Staff's conclusions regarding geologic hazards are consistent with those of the Applicant.

Geologic Impacts**.** No adverse effect on geological resources is expected from construction or operation of the PEC and associated linear components. No collectable or marketable minerals are known to be present within two miles of the site. Marly magnesian limestone was mined from the Tulare Formation in the Panoche Hills several miles west of the site between 1947 and 1953 for use in soil conditioning. Future value of the deposit and similar marl deposits of the Panoche Hills appears limited to agricultural uses, as the material is considered too impure to be of value for most limestone or dolomite uses. (Ex. 1, pp. 5.3-18; Ex. 100, p. 5.2-9.)

Paleontologic Resources**.** Paleontological resources (fossils) are the remains or traces of prehistoric animals and plants. Fossils are important scientific and educational resources because of their use in: 1) documenting the presence and evolutionary history of particular groups of now extinct organisms; 2) reconstructing the environments in which these organisms lived; and 3) determining the relative ages of the strata in which they occur. Fossils are also important in determining the geologic events that resulted in the deposition of the sediments that entombed them and their subsequent deformation.

A paleontologic resources field survey was performed for the entire project and the area surrounding it. It meets all requirements of the Energy Commission and the standard measures for mitigating adverse construction-related environmental impacts on significant paleontological resources established by the Society of Vertebrate Paleontology. (Ex. 1, p. 5.8-1.)

The results of this study indicate that excavations in the underlying native soils, in particular the Los Banos alluvium and the San Luis Ranch alluvium, could disturb fossiliferous sediments such that adverse impacts to significant paleontological resources could be experienced. In addition, fossil plant fragments were located approximately three miles north-northwest of the site, and rodent bones and charcoalified wood were identified approximately 1.85 miles northwest of the site. (Ex. 100, p. 5.2-8.)

Based on this information, we conclude that the proposed PEC site has a high potential to contain significant paleontological resources encountered when native materials are disturbed during grading, foundation, and trenching activities. Potential impacts to paleontological resources would include, but not be limited to, disturbing the natural depositional state of the resource that would prevent proper chronological inventory, in addition to damaging (i.e. crushing, cracking, and/or fragmentation) the resource itself. Conditions of Certification **PAL-1** to **PAL-7** are appropriate for excavation activities in native ground and are designed to mitigate any paleontological resource impacts, as discussed above, to a less than significant level. (Ex. 100, p. 5.2-9.)

Operation Impacts and Mitigation**.** Operation of the proposed plant facilities should not have any significant impacts on geologic, mineralogic, or paleontologic resources. (Ex. 100, p. 5.2-9; Ex. 1, pp. 5.8-14.)

Cumulative Impacts and Mitigation**.** Based upon the absence of significant direct impacts from the project, Staff believes that the potential for significant

cumulative impacts to the project from geologic hazards, and to potential geologic, mineralogic, and paleontologic resources from the proposed project are insignificant. (Ex. 100, p. 5.2-9.)

The Applicant has proposed monitoring and mitigation measures to be followed during the construction of the PEC. We agree with the Applicant that the facility can be designed and constructed to minimize the effect of geologic hazards at the site, and that impacts to vertebrate fossils encountered during construction of the power plant and associated linear facilities would be mitigated to a level of insignificance.

FINDINGS AND CONCLUSIONS

Based on the evidence, we make the following findings:

1. The proposed project site is located in an area where ground shaking associated with seismic activity is known to occur.
2. No other significant geologic hazards are known to exist at the proposed project site.
3. The project will be designed to withstand earthquake shaking in accordance with the applicable requirements established in the California Building Code.
4. There are no known significant geologic or mineralogic resources in the project area.
5. Paleontologic resources may be discovered during construction-related ground disturbance.
6. The Conditions of Certification ensure that activities associated with construction and operation of the project will cause no significant impacts to paleontologic resources.

We therefore conclude that the project will not cause any significant direct, indirect, or cumulative impacts to geological, mineralogic, or paleontological resources.

CONDITIONS OF CERTIFICATION

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 the 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 submit to the CPM to keep on file, resumes of the 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. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

1. BS or BA degree in geology or paleontology and one year experience monitoring in California; or
2. AS or AA in geology, paleontology or biology and four years experience monitoring in California; or
3. 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.

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 and 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 beginning on-site duties.

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 laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance to greater than five feet depth is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and the plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and can be at a scale of 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed 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. Prior to work commencing 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 during the next week, 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. 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. If there are changes to the scheduling of the construction phases,

the project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 The project owner shall ensure that the PRS prepares, 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 a basis for discussion in the event that 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 the PRMMP procedures;

2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the Conditions of Certification;

3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;

4. An explanation of why, 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 the monitoring and sampling;

6. A discussion of the 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 meets the Society of Vertebrate Paleontology standards and requirements for the curation of paleontological resources;

9. Identification of the institution that has agreed to receive any 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, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for all recently employed project managers, construction supervisors and workers who are involved with or operate ground disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of an initial in-person PRS training during the project kick-off for those mentioned above. Following initial training, a CPM-approved video or in-person training may be used for new employees. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the WEAP, unless specifically approved by the CPM.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such 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 shall be provided for project sites containing units of high paleontologic 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 Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and

7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: 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 the workers are to follow.

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 on using a video for interim training.

If the 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. 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 consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potentially fossil-bearing materials have been identified, both at the site and along any constructed linear facilities associated with the project. In the event that the PRS determines full time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the project owner shall notify and seek the concurrence of the CPM.

The project owner shall ensure that the PRS and PRM(s) have the authority to 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 different from the accepted schedule presented 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 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) keeps a daily log of monitoring 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 immediately 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 when construction has been halted due to a paleontological find.

The project owner shall ensure that the PRS prepares a summary of the monitoring and other paleontological activities that will be placed in the Monthly Compliance Reports (MCR). The summary will include the name(s) of PRS or PRM(s) active during the month, general descriptions of training and monitored construction activities and general locations of excavations, grading, etc. A section of the report shall include the geologic units or subunits encountered; descriptions of sampling within each unit; and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring including any incidents of non-compliance and 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 the project construction.

Verification: The project owner shall maintain in their 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 completion and approval of the CPM-approved Paleontological Resource Report (See **PAL-7**). The project owner shall be responsible to pay 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 submitted 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 Paleontological Resources Report under confidential cover to the CPM.

Certification of Completion
Worker Environmental Awareness Program
Panoche Energy Project (06-AFC-5)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on Cultural, Paleontology and Biological Resources for all personnel (i.e., construction supervisors, crews and plant operators) working on-site or at related facilities. By signing below, the participant indicates that they understand and shall abide by the guidelines set forth in the Program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
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Cultural Trainer	***Signature***	**Date**
Paleontology Trainer	***Signature***	**Date**
Biological Trainer	***Signature***	**Date**

E. WASTE MANAGEMENT

The project will generate hazardous and non-hazardous wastes during its construction and operation. The record contains an evaluation of the proposed waste management plans and the mitigation measures intended to reduce the risks and environmental impacts associated with handling, storing, and disposing of these wastes. This evaluation includes a review of proposed solid and hazardous waste management methods to ascertain whether they meet applicable standards for waste reduction and recycling. It also includes a review of whether these wastes would significantly impact available treatment and disposal sites.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project owner will prepare separate Waste Management Plans for the construction and the operation of the PEC. Each plan will describe the appropriate waste stream and management methods planned. Condition of Certification **WASTE-5** requires that these plans be submitted to the CPM and applicable local agencies prior to site preparation and plant operation, respectively.

1. Existing Contamination

The parcel is currently in agricultural production with pomegranate trees. Common agricultural practices can result in residual concentrations of fertilizers, pesticides or herbicides in near-surface soil. A Phase I Environmental Assessment (ESA) of the proposed site dated May 9, 2006, was prepared in accordance with American Society for Testing and Materials practice E 1527-00. The Phase I ESA did not identify any Recognized Environmental Conditions on the PEC site. (Ex. 100, 4.13-4.)

2. Construction Impacts and Mitigation

Construction of the PEC and its associated facilities will generate nonhazardous and hazardous wastes in both solid and liquid forms. Approximately 97 tons of solid nonhazardous waste, consisting of waste metal, excess concrete, wire, wood, paper, glass, plastic waste products, packing materials, insulation, and empty non-hazardous chemical containers will be generated during construction. (Ex.1, Table p. 3.4-7.) All non-hazardous wastes would be recycled to the extent possible and non-recyclable wastes would be collected by a licensed hauler and disposed of in a solid waste disposal facility. (Ex. 100, p. 4.13-5.)

Since potentially contaminated soils may be encountered during excavation and trenching for the proposed project, specific handling, disposal, and other precautions may be necessary. Proposed Conditions of Certification **WASTE-1** and **WASTE-2** adequately address any soil contamination contingency that may be encountered during construction of the project and would ensure compliance with Title 22, California Code of Regulations, section 66262.10.

Hazardous wastes anticipated to be generated during construction include welding materials, waste paint, oil absorbents, gasoline and diesel fuel from leaks, and lubricants (oil and grease). These amounts would be minor and if handled in the same manner as that described for the project site operation phase, would present an insignificant risk to workers and the public. (Ex. 100, p. 4.13-6.)

The construction contractor would be considered the generator of hazardous wastes at this site during the construction period and therefore, prior to construction, and pursuant to Condition of Certification **WASTE-3** the project owner would be required to obtain a unique hazardous waste generator identification number from DTSC. (Ex. 100, p. 4.13-6.)

3. Operation Impacts and Mitigation

The PEC will generate both nonhazardous and hazardous wastes in solid and liquid forms under normal operating conditions. Before operations can begin, the project owner must develop and implement an Operations Waste Management Plan.

Nonhazardous solid wastes anticipated to be generated during operation include maintenance wastes and office wastes. Non-recyclable wastes would be regularly transported offsite to a local solid waste disposal facility.

Nonhazardous liquid wastes generated during facility operation will consist of area washdown, liquids from sample drains, equipment leakage, and drainage from facility equipment areas and will be discharged to the waste water collection system. Water from the plant wastewater collection system will be disposed of via a well discharge to a geologic formation that is unsuitable for potable water production and isolated from aquifers.

Area drains will be located near mechanical equipment where it is determined that oil could mix with rainwater or other water sources. The water collected by these drains will go to the oil-water separator, which separates out any oil before the effluent goes to the collection tank via an underground drain line. The oil-contaminated fluid will be pumped out by a vacuum truck on an as-needed basis and disposed of at a facility specifically qualified to handle each waste. (Ex. 100, p. 4.13-7.)

The Applicant or contractor would be the generator of hazardous wastes at this site during operations and thus the project owner's unique hazardous waste generator identification number obtained during construction would still be required for generation of hazardous waste, pursuant to proposed Condition of Certification **WASTE-3**.

The amounts of hazardous wastes generated during the operation of PEC would be minimal, and recycling methods would be used to the extent possible. The Applicant, in its analysis, provided a list of wastes, the amounts expected to be generated, and their disposal methods. (Ex. 1, Table, p. 5.14-2.) The remaining non-recyclable hazardous waste would be temporarily stored on-site, and disposed of by licensed hazardous waste collection and disposal companies in accordance with all applicable regulations. Should any waste management-related enforcement action be initiated or taken by a regulatory agency during plant operations, the project owner would be required to notify the CPM whenever the owner becomes aware of this action. (Ex. 100, p. 4.13-7.)

4. Impact on Existing Waste Disposal Facilities

The Applicant identified nonhazardous waste disposal sites suitable for discarding project-related construction and operation wastes. (Ex. 1, § 5.14.2.) During construction of the proposed project, 97 tons of solid waste will be generated and disposed of in solid waste management landfills. The nonhazardous solid wastes generated yearly at PEC would be recycled if possible, or disposed of in a Class III landfill. (Ex. 100, p. 4.13-8.)

There are six landfills identified by the Applicant. (Ex. 1, § 5.14.1.) They are located in Fresno, Los Angeles and San Bernardino Counties. There is over 33 million cubic yards of remaining capacity in these facilities. The total amount of nonhazardous waste generated from project construction and operation will contribute less than 1% of available landfill capacity. The Commission finds that disposal of the solid wastes generated by PEC can occur without significantly impacting the capacity or remaining life of any of these facilities.

There are two Class I landfills in California: the Clean Harbor Landfill in Kern County, and the Kettleman Hills Landfill in Kings County. There is in excess of 16 million cubic yards of remaining hazardous waste disposal capacity at these landfills, with up to 60 years of remaining operating lifetimes. The amount of

hazardous waste transported to these landfills has decreased in recent years due to source reduction efforts by generators and the transport of waste out of state that is hazardous under California law, but not federal law. The volume of hazardous waste from the PEC requiring off-site disposal would not significantly impact the capacity or remaining life of any of these facilities. (Ex. 100, p. 4.13-8.)

5. Cumulative Impacts and Mitigation

There are two power generating facilities, Panoche and Starwood, proposed to be located in Fresno County. The projects list the same Class III, Solid Waste Landfills for non-hazardous waste disposal for construction and operation of the projects. The landfills are located in Fresno, Los Angeles, and San Bernardino counties. The combined capacity per year of the landfills total 2,324,010 tons per year. The combined waste generated at the two facilities would require less than 1% of the capacity of either of the solid waste landfills. (Ex. 100, p. 4.13-9.)

The quantities of hazardous wastes generated during construction and operation of the two projects would add to the total quantities of waste generated in California. Overall, wastes would be generated in minimal quantities, recycling efforts would be prioritized wherever practical, and capacity is available in a variety of treatment and disposal facilities. Therefore, we conclude that these added waste quantities generated by the two projects would not result in significant cumulative waste management impacts.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude as follows:

1. The project will generate hazardous and nonhazardous wastes during construction and operation.
2. Hazardous and nonhazardous wastes will be recycled to the extent practical.

3. Wastes which cannot be recycled will be disposed in appropriate landfills.
4. Disposal of project wastes will not result in significant impacts to existing waste disposal facilities.
5. The Conditions of Certification set forth below and in the **AIR QUALITY** and **SOIL AND WATER RESOURCES** portions of this Decision, as well as waste management practices detailed in the evidentiary record, will reduce potential waste impacts to insignificant levels.
6. Implementation of the Conditions of Certification will ensure that the project complies with the applicable laws, ordinances, regulations, and standards identified in Exhibit 100.

We therefore conclude that the project's construction and operational wastes will be properly managed, and will not create significant direct, indirect, or cumulative impacts.

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 Compliance Project Manager (CPM) for review and approval. The resume shall show experience in 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 contaminated soil is unearthed during excavation at either the proposed site or linear facilities 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 contamination, and file a written report to the project owner representatives of Department of Toxic Substances Control, and CPM stating the recommended course of action and obtain approvals from the Department of Toxic Substances Control.

Depending on the nature and extent of contamination, 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 Department of Toxic Substances Control 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 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste during construction and operations.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the relevant Monthly Compliance Report of its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-5 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Methods of managing each waste, including temporary onsite storage, treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM for approval.

The Operation Waste Management Plan shall be submitted to the CPM no less than 30 days prior to the start of project operation for approval. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year and provide a comparison of the actual methods used to those the planned management methods proposed in the original Operation Waste Management Plan.

VII. LOCAL IMPACT ASSESSMENT

The effect of a power plant project on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern including **Land Use, Noise and Vibration, Socioeconomics, Traffic and Transportation, and Visual Resources.**

A. LAND USE

The land use analysis focuses on two main issues: (1) whether the project is consistent with local land use plans, ordinances, and policies; and (2) whether the project is compatible with existing and planned uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The PEC project is proposed on a 12.8-acre portion of a 128-acre parcel in the northwestern section of the Westside Valley Area in Fresno County, adjacent to the Panoche electricity substation. The closest community to the project is Mendota, located 12 miles to the northeast and northeast. Primary access to the site is from West Panoche Road via Interstate 5 or Hwy 33. (**See Project Description Figures 1 and 2**.) Agricultural and scattered residential uses predominate in the site vicinity. The site itself is presently a pomegranate orchard. It will be leased by the Applicant from the owner of the 128-acre parcel. An additional 8-acres will be cleared of pomegranates, temporarily used as a construction laydown area and subsequently replanted with pomegranates.

Fresno County General Plan and Zoning. The project site and surrounding parcels are zoned AE20 (Exclusive Agriculture, 20-acre minimum parcel size) and the General Plan designation for the site and surrounding lands is Agriculture. Fresno County's Department of Public Works and Planning

determined that the proposed power generating facility is consistent with the County General Plan and zoning ordinance. General Plan policy LU-A.3 allows certain non-agricultural uses in areas designated Agriculture and provides examples of uses that could be allowed. A power generating facility is similar to the examples in that it "provides a public benefit to the surrounding community or larger area, such as sewage treatment plants, solid waste disposal, wireless communication facilities and electrical substations." The County Board of Supervisors has previously approved Conditional Use Permits for power generating facilities on land designated Agriculture and zoned AE-20 (Ex. 100, Land Use Appendix 4, pp. 2-3), including the nearby Wellhead and CalPeak peaker plants. The County applied the same rationale to the County zoning ordinance. Based on that analysis, Staff assumes that a power plant is allowed in the AE-20 zone in this location. (Ex. 100, p. 4.5-12.)

Subdivision Map Act Compliance. In general, a lease of real property is a subdivision which requires compliance with the Map Act. Here, however, Fresno County and Commission staff have determined that the lease of the project site is exempt from the Map Act under Government Code, section 66412.1.[17] Though this project does not receive a formal local agency permit, the Energy Commission's analysis provides the equivalent review of conformance with local design and improvement standards. On March 26, 2007, Fresno County issued (advisory) Site Plan Review No. 7586 (Ex. 7) approving the project with various Conditions. In addition, Commission staff examined the project against the development standards for the AE-20 zone and found those standards to be satisfied. (Ex. 100, p. 4.5-10.) Condition of Certification **LAND-2** will assure that the project is developed in conformance with the Site Plan Approval and other Fresno County standards.

[17] 66412.1. This division shall also be inapplicable to:
(a) The financing or leasing of any parcel of land, or any portion thereof, in conjunction with the construction of commercial or industrial buildings on a single parcel, unless the project is not subject to review under other local agency ordinances regulating design and improvement.
(b) The financing or leasing of existing separate commercial or industrial buildings on a single parcel.

Williamson Act Compliance. The project site and nearly all surrounding lands are subject to Williamson Act agricultural preservation contracts. The Applicant, however, has obtained Fresno County's approval of cancellation of the contract on the project site. That approval was granted by the County Board of Supervisors on April 24, 2007, subject to the completion of certain requirements such as obtaining all permits necessary for the project and payment of a cancellation fee. (Ex. 100, pp. 4.5-4 - 4.5-5; Land Use Appendix 2.) Condition of Certification **LAND-3** requires that the Applicant provide proof that the cancellation is completed prior to the start of construction.

Loss of Agricultural Lands. Construction of the project will permanently convert 12.8 acres of prime, irrigated farmland to a non-agricultural use and temporarily convert an additional 8 acres used for the construction laydown area. Staff considers the temporary cessation of farming on the laydown area as a less than significant impact because it is temporary and after construction is completed, the area will be replanted in pomegranates. To assess the significance of the permanent conversion of 12.8 acres, Staff applied the California Agricultural Land Evaluation and Site Assessment (LESA) model prepared by the California Department of Conservation. Application of the model to the 12.8 acre project site and 2.5-acre expansion area for the Panoche Substation yielded a score of 84.5 points, which indicates a potentially significant environmental impact due to the loss of farmland. To mitigate that potential impact, Staff recommends adoption of Condition of Certification **LAND-1**, which requires that the project owner pay a fee to an agricultural land trust which will preserve 15.3 acres of agricultural land by either fee purchase or conservation easement. With that mitigation, the potential impact is reduced to an insignificant level. (Ex. 100, pp. 4.5-12 - 4.5-13.)

No other potential environmental impacts were identified for the PEC. It will not disrupt or divide an existing community or interfere with current or potential future

neighboring land uses and is consistent with County land use policies and regulations. (Ex. 100, pp. 4.5-5 - 4.5-13.)

Cumulative Impacts. The nearby Starwood power plant project is also proposed on prime farmland, though that land has not been farmed in recent years. Nonetheless, the LESA model scores indicate a potential significant impact. With the adoption of a Condition similar to **LAND-1**, currently proposed by Staff in the Starwood proceeding, that potential impact would be reduced to an insignificant level. (Ex. 100, pp. 4.5-13 - 4.5-14.)

FINDINGS AND CONCLUSIONS

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

1. The PEC is located in an agriculturally zoned area and is a compatible use within that area.
2. The project is consistent with Fresno County's existing land use designation, land use plans, and zoning.
3. The project would not disrupt or divide the physical arrangement of an established community.
4. The project would not preclude or unduly restrict existing or planned land uses.
5. The Conditions of Certification ensure that the project will comply with all applicable local land use and environmental mitigation requirements.

We therefore conclude that the PEC will not create significant direct, indirect, or cumulative impacts and will comply with applicable laws, ordinances, regulations, and standards.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall mitigate for the loss of 15.3 acres of prime farmland at a one-to-one ratio.

Verification: The project owner shall provide a mitigation fee payment to an agricultural land trust such as the San Joaquin River Parkway and Conservation Trust or any other land trust that has been previously approved by the Compliance Project Manager (CPM) at least 30 days prior to the start of construction. The fee payment will be determined by an independent appraisal conducted on available, comparable, farmland property on behalf of the agricultural land trust. The project owner shall pay all costs associated with the appraisal. The project owner shall provide documentation to CPM that the fee has been paid and that the 15.3 acres of prime farmland and/or easements shall be purchased within three years of start of operation as compensation for the 15.3 acres of prime farmland to be converted by the PEC. The documentation also shall guarantee that the land/easements purchased by the trust will be located in Fresno County and will be farmed in perpetuity. If no available land or easements can be purchased in Fresno County, then the purchase of lands/easements in other Central Valley Counties is acceptable. The project owner shall provide to the CPM updates in the Annual Compliance Report on the status of farmland/easement purchase(s).

LAND-2 The project owner shall design and construct the project to the applicable development standards in Sections 816.5 of the Fresno County Ordinance Code and the Site Plan Review No. 7586, as issued by Fresno County on March 26, 2007.

Any access gate shall be setback a minimum of 20 feet (or the length of the longest vehicle to initially enter the site from the edge of the ultimate road right-of-way.

The number of parking spaces required as part of this project shall be one space for every permanent employee, one space for each sales person, and one space for each company vehicle for a total of six spaces.

Each lot shall have a front yard of not less than 35 feet extending across the full width of the lot; each lot shall have a side yard on each side of not less than 20 feet.

Verification: At least sixty (60) days prior to the start of construction the project owner shall submit to the Compliance Project Manager (CPM) written documentation including evidence of review by Fresno County that the project conforms to the standards in Sections 816.5 and 843 of the Fresno County Ordinance Code.

LAND-3 The project owner shall provide a copy of Fresno County's Final Certificate of Cancellation of Contract from Agriculture Preserve No. 367.

Verification: At least 60 days prior to construction, the project owner shall submit to the CPM a copy of Fresno County's Final Certificate of Cancellation of Contract from Agriculture Preserve No. 367.

B. NOISE AND VIBRATION

The construction and operation of any power plant creates noise, or unwanted sound. The character and loudness of this sound, the times of day or night during which it is produced, and the proximity of the facility to sensitive receptors combine to determine whether a project's noise will cause significant impacts to the environment. In the licensing process, the Energy Commission evaluates the potential for significant impacts and determines whether noise produced by project-related activities will be consistent with applicable noise control laws and ordinances. In this portion of the Decision, we examine the potential noise impacts from the construction and operation of the Panoche Energy Center and the effectiveness of measures proposed to reduce those impacts.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The proposed power plant will be built on a 12.8-acre site, located in an unincorporated area within Fresno County, approximately 50 miles west of the City of Fresno. This site is zoned AE-20, Exclusive Agriculture District. (Ex. 100, p. 4.6-4.) Surrounding land uses are generally agricultural, with some residential use. The predominant noise sources in the area include vehicular noise, and industrial noise from mechanical equipment and processes at the existing Wellhead Power Panoche, LLC power plant, CalPeak Power Project and Pacific Gas & Electric (PG&E) substation. (Ex. 100, p. 4.6-4.)

Potentially sensitive residential properties in the vicinity of the project include structures located northeast and north of the site. There is a five-unit residential building northeast of the site. There are three single-family residential structures to the north of the site, in a row from east to west. The center building is inhabited; the other two appear to be uninhabitable. There is a single-family residential structure to the northeast.

For purposes of evaluating impacts on residential uses, the project noise is compared to the measured nighttime ambient noise levels, when residents are sleeping.

Establishing a Baseline Through Ambient Noise Monitoring

Because community noise fluctuates over time, a single measure called the Equivalent Sound Level (Leq) is often used to describe the time-varying character of community noise. The Leq is the sound level during a measured time interval. To describe the time-varying character of environmental noise, the statistical noise descriptors L10, L50, and L90 are commonly used. They are the noise levels equaled or exceeded during 10, 50, and 90 percent of a stated time, respectively. Sound levels associated with L10 typically describe transient or short-term events, whereas levels associated with L90 describe the steady-state (or most prevalent) noise conditions. (Ex. 1, p. 5.12-3.)

In order to establish a baseline for comparison of predicted project noise to existing ambient noise, the Applicant has presented the results of an ambient noise survey. This survey was performed on Monday, June 19 through Tuesday, June 20, 2006, using acceptable equipment and techniques. The noise survey monitored existing noise levels at locations ML1, ML2, and ML3, which are described as follows:

- Location ML1: This location is approximately 1,900 feet from the project site and represents the five-unit multiplex (5-Plex) northeast of the site. It was monitored continuously from 1:00 p.m. on June 19 through 2:00 p.m. on June 20, 2006.

- Location ML2: This location is approximately 800 feet from the project site and represents the three single-family residential structures north of the site. It was monitored on June 19, 2006, from 2:00 p.m. to 3:00 p.m. and from 9:05 p.m. to 10:00 p.m., and on June 20, 2006, from 12:35 a.m. to 1:35 a.m.

- Location ML3: Located at 43405 West Panoche Road, approximately 3,300 feet from the project site. It represents the single-family residential structure northeast of the site. This location was monitored on June 19, 2006, from

3:30 p.m. to 4:30 p.m. and from 7:00 p.m. to 8:00 p.m., and on June 20, 2006, from 1:40 a.m. to 2:40 a.m.

Noise Table 1 summarizes the Applicant's ambient noise measurements at each measurement site.

NOISE Table 1
Summary of Measured Noise Levels

Measurement Sites	**Measured Noise Levels, dBA**		
	Average During Nighttime Hours		
	L_{eq}	**L_{50}**	**L_{90}**
ML1, 5-Plex to the northeast of the Project site	50[1]	44[1]	42[1]
ML2, Three single-family residential structures to the north of the Project site	41[2]	41[2]	39[2]
ML3, Single-family residential structure to the northeast of the Project site	47[2]	41[2]	41[2]

[1] Calculations of average of four quietest consecutive hours of the nighttime (Ex. 100, p. 4.6-7.)
[2] Results of the hourly measurements between midnight and 2:40 a.m.

Having established a baseline noise level for the three receptors, we now consider the noise the project is expected to add to the baseline, both during its construction and during its operation.

2. Construction

Construction noise is a temporary phenomenon. Construction of the PEC is expected to be typical of other power plants in terms of schedule, equipment used, and other types of activities. Construction of an industrial facility such as a power plant is typically noisier than permissible under most noise ordinances. In order to allow the construction of new facilities, construction noise during certain hours of the day is commonly exempt from enforcement by local ordinances.

Staff used reference sound levels from typical construction equipment to estimate construction noise levels at the monitoring locations. Sound levels of typical construction equipment average 89 dBA at 50 feet during the noisiest activities. Using this as the reference noise level for conventional construction noise, project estimated construction noise levels at the three noise monitoring locations were calculated and are summarized below in **NOISE Table 2**.

NOISE - Table 2
Predicted Construction Noise Levels

Receptor/Distance	Highest Estimated Construction Noise Level (dBA) [1]	Measured Existing Ambient, Average Daytime L_{eq} (dBA) [2]	Cumulative	Change
ML1/1,900 feet	57	63	64	+1
ML2/800 feet	64	46	64	+18
ML3/3,300 feet	53	55	57	+2

Sources: [1] Average of noise level from conventional construction equipment during noisiest activities, and staff's calculations
[2] Ex. 1, Tables 5.12-2, 5.12-3, 5.12-4; and staff's calculations. (Ex. 100, 4.6-8.)

As seen in **Noise Table 2** above, construction noise at the residential units near monitoring location ML1 may reach 57 dBA. The ambient daytime L_{eq} level at this location, as seen in **Noise Table 2** above, is 63 dBA. The addition of the highest construction noise to the ambient would result in 64 dBA L_{eq}, an increase of 1 dBA over the ambient level. The ambient daytime L_{eq} level at ML3, 55 dBA, when added to the highest construction noise at this location, 53 dBA, results in 57 dBA L_{eq}, an increase of 2 dBA over the existing ambient level. These increases are not noticeable.

The ambient daytime L_{eq} level at ML2, 46 dBA, when added to the highest construction noise at this location, 64 dBA, results in 64 dBA L_{eq}, an increase of 18 dBA over the existing ambient level. An increase of more than 10 dBA is significant. An increase of 18 dBA in the ambient noise level at ML2 is enough to

cause annoyance. Staff and the Applicant do not consider this a significant impact because:

- The construction activities are temporary and only during the daytime;
- The Applicant will not be pile driving during construction of this project. Pile driving is generally about 10 decibels nosier than other construction activities;
- The noise data used to estimate the noise levels is about 30 years old and does not take into account that modern construction equipment is less noisy; and
- Any noise considered intrusive can be addressed by the complaint process established in Condition **NOISE-2**. (Transcript of December 12, 2007 Presiding Member's Proposed Decision Public Comment Hearing, [page unavailable].)

The Applicant promises to address this by relocating the residents to a location that is approximately 4000 feet north of the PEC site. Condition **NOISE-5**, and an agreement recently executed by the Applicant (Ex. 51), indicate that the relocation is to take place prior to initial turbine startup.

The Applicant will mitigate the impact of construction noise by performing noisy construction work only during the daytime hours between 7:00 a.m. and 7:00 p.m. on any day except Saturdays and Sundays, and between 7:00 a.m. and 5:00 p.m. on Saturdays and Sundays. (Ex. 1, § 5.12.2.1.1.) This would be in compliance with the Fresno County Noise Ordinance. To ensure that the LORS limits are, in fact, adhered to, we adopt Condition of Certification **NOISE-7**.

In light of the mitigation measure and the conditions of certification, the noise impacts of the PEC construction activities will comply with the noise LORS and no additional construction mitigation measures will be necessary.

In the event that actual construction noise should annoy nearby workers or residents, we adopt Conditions of Certification **NOISE-1** and **NOISE-2**, which establish a Noise Complaint Process that requires the Applicant to resolve any problems caused by construction noise.

3. Linear Facilities

New off-site linear facilities would include 2,400 feet of gas pipeline and a 300-foot transmission line to tie into the Panoche Substation. (Ex. 100, p. 4.6-9.) Construction of linear facilities typically moves along at a rapid pace, thus not subjecting any one receptor to noise impacts for more than two or three days. Further, the Fresno County Noise Ordinance limits the hours of construction to daytime hours. (Fresno County Code Chapter 8.40.) To ensure compliance with these limitations, we adopt Condition of Certification **NOISE-7**.

4. Vibration

The only construction operation likely to produce vibration that could be perceived off-site would be pile driving. It is anticipated that pile driving will be required for construction of the PEC. ML2 is relatively close to the project site (800 feet) but not close enough to be significantly impacted by vibration. At the distances of 1,900 feet at ML1 and 3,300 feet at ML3, pile driving vibration will also be insignificant. (Ex. 100, p. 4.6-10.)

5. Worker Effects

To ensure that construction workers are adequately protected as required by State and Federal Occupational Health and Safety laws, we adopt Condition of Certification **NOISE-3** requiring a noise control program to protect them.

6. CEQA Impacts

Increases in the ambient noise levels resulting from construction activities at the most noise-sensitive receptors will be mitigated to less than significant levels. Construction noise is temporary in nature and construction activities will occur during daytime hours. We thus conclude that project construction will create less

than significant impacts at these receptors. To ensure this, we adopt Conditions of Certification **NOISE-1** and **NOISE-2**, which establish a notification and complaint process to resolve any complaints regarding construction noise, and Condition of Certification **NOISE-7** which limits construction activities to daytime hours.

Implementation of the conditions of certification will ensure that increases in the ambient noise levels resulting from construction activities at the most noise-sensitive receptors will be mitigated to less than significant. Construction noise is temporary in nature and construction activities will occur during daytime hours. The Commission thus concludes that project construction will not create significant impacts at those receptors.

The primary noise sources of the PEC include the gas turbine generators, gas turbine air inlets, exhaust stacks, wet cooling tower, natural gas fuel compressors, electrical transformers, selective catalytic reduction (SCR) duct walls, and various pumps and fans.

Project operating noise is predicted to be 49 dBA at ML1 and 42 dBA at ML3. (Ex. 100, p. 4.6-11.) The Noise Ordinance of the Fresno County Code establishes the noise limits shown in **Noise Table 3** below. We use the lowest of these limits, or 45 dBA L_{50}, to evaluate the project's noise impact at the above receptors.

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NOISE Table 3
Fresno County Exterior Noise Standards

Category	Cumulative Number Of Minutes In Any One-Hour Time Period	Noise Level Standards, dBA Daytime 7 a.m. to 10 p.m.	Noise Level Standards, dBA Nighttime 10 p.m. to 7 a.m.
1	30	50	45
2	15	55	50
3	5	60	55
4	1	65	60
5	0	70	65

The predicted project noise level at ML1, or 49 dBA, when combined with the average ambient noise level of the four quietest consecutive hours of the nighttime at this location, or 44 dBA L_{50} (see **Noise Table 3**), would result in 50 dBA L_{50}. This is 5 dBA above the LORS limit of 45 dBA L_{50} and thus violates the County noise ordinance. Starwood Power, LLC has filed an Application for Certification (06-AFC-10) with the Energy Commission to construct and operate the Starwood Power Project (SPP). The center of the SPP site would be approximately 460 feet from ML1. The SPP Applicant has signed an agreement with the owner of the 5-Plex at ML1 to relocate the current residents. (URS 2006a, Ex. 1, § 5.12.5.2.) As such, the 5-Plex would no longer be used for residential purposes. Furthermore, the PEC Applicant has stated that if the SPP does not implement its agreement and ML1 remains a residential property, the Applicant would be able to comply with the 45 dBA L_{50} limit (Data Response 41). To ensure the project's compliance with the LORS, in the event that SPP does not relocate the residents, or they are relocated to within one mile of the PEC, the Applicant must implement additional mitigation measures in order to bring the noise level, measured at ML-1 or the new residential location, whichever is closer to the PEC, within the 45 dBA L_{50} limit. The mitigation measures will need to be applied to the plant equipment, rather than the residential structures; if SPP fails

to complete the relocation, PEC may choose to do so on its own initiative. (10/10/07 RT, 61 – 62.)

The predicted project noise level at ML2, or 58 dBA, when combined with the nighttime ambient level of 41 dBA L_{50} (**Noise Table 3**, above), would result in 58 dBA L_{50}. This violates the LORS limit of 45 dBA L_{50} by 13 dBA. As explained above, the Applicant has promised to relocate the residents to a location that is approximately 4000 feet north of the PEC site, prior to start of noisy construction activities. (Ex. 5.) At this new location, the above projected operational noise level, with further mitigation, would be 41 dBA, as predicted by the Applicant. (Ex. 100, p. 4.6-12.) This level is less than the above LORS limit and thus in compliance with the noise ordinance. To ensure the relocation of the residents and compliance with the ordinance, we adopt amended Condition of Certification **NOISE-5**.

The predicted project noise level at ML3, or 42 dBA, when combined with the nighttime ambient level of 41 dBA L_{50} at this location (**Noise Table 3**, above), would result in 45 dBA L_{50}. This is in compliance with the limit of 45 dBA L_{50}.

Tonal and Intermittent Noises. One possible source of annoyance would be strong tonal noises. Tonal noises are individual sounds (such as pure tones) that, while not above permissible levels, stand out in sound quality. The Applicant plans to address overall noise in design, and to take appropriate measures, as necessary, to eliminate tonal noises as possible sources of annoyance. (Ex. 1, p. 5.12.3.) To ensure that tonal noises do not cause annoyance, we adopt Condition of Certification **NOISE-4**.

Linear Facilities. All water and gas piping will lie underground, and will be silent during operation. Noise effects from the electrical interconnection line typically do not extend beyond the right-of-way easement of the line, and will thus be inaudible to any receptors.

Vibration. Vibration from an operating power plant could be either groundborne or airborne. Gas turbine generator facilities in operation using the GE LM6000 machine have not resulted in groundborne or airborne vibration impacts and it is not anticipated that GE Energy's newer LMS100 machines which the Applicant proposes to install at PEC would differ noticeably in their tendency to produce vibration. We find that vibration from the PEC will be undetectable by any likely receptor.

CEQA Impacts. Significant impacts, as defined in CEQA, can be detected by comparing predicted power plant noise levels to the ambient nighttime background noise levels at the nearest sensitive residential receptors (ML1, ML2, and ML3), as shown above.

Combining the ambient noise level of 42 dBA L_{90} (**Noise Table 3** above) with the project noise level of 49 dBA at ML1 will result in 50 dBA L_{90}, 8 dBA above the ambient. We regard an increase of up to 5 dBA as a less than significant impact. An increase between 5 and 10 dBA should be considered adverse, but may be either significant or insignificant, depending on the particular circumstances of a case, such as the duration and frequency of the noise, the resulting noise level, and land use designation of the affected receptor. The Applicant commits to implementing mitigation measures to bring the project's noise level down to 45 dBA (see above). This is 3 dBA in excess of the above nighttime level of 42 dBA L_{90}. An increase of 3 dBA is barely noticeable and would not create

annoyance. With the adoption of Condition of Certification **NOISE -4** we conclude that the project operational noise impact at ML1 would be less than significant.

Combining the ambient noise level of 39 dBA L_{90} (**Noise Table 3** above) with the project noise level of 58 dBA at ML2 will result in 58 dBA L_{90}, 19 dBA above the ambient. As explained above, the Applicant has signed an agreement to relocate the residents to approximately 4000 feet north of the project site. As such, ML2 will no longer be considered a sensitive receptor. At the new location, the above predicted project noise level of 41 dBA would not likely cause annoyance. To ensure the relocation will occur and the project will not create significant noise impacts at the new location, we adopt Condition of Certification **NOISE-5**.

Combining the ambient noise level of 41 dBA L_{90} (**Noise Table 3** above) with the project noise level of 42 dBA at ML3 will result in 45 dBA L_{90}, 4 dBA above the ambient. This increase could be noticeable but does not typically create annoyance.

With implementation of the proposed mitigations, the project operational noise level at the most sensitive receptors would be mitigated to a less than significant level. These mitigation measures also reduce the project's noise impact on the minority population in the project area to less than significant.

Worker Effects. The Applicant has acknowledged the need to protect plant operating and maintenance workers from noise hazards, and has committed to comply with applicable LORS. (Ex. 1, §§ 5.12.4.1 - 5.12.4.2; Table 5.12-6.) Signs would be posted in areas of the plant with noise levels exceeding 85 dBA (the level that OSHA recognizes as a threat to workers' hearing), and hearing protection would be required. To ensure that plant operation and maintenance workers are, in fact, adequately protected, we adopt Condition of Certification **NOISE-6**.

7. Cumulative Impacts and Mitigation

Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts. The CEQA Guidelines require that we consider the severity of potential cumulative impacts and the likelihood of their occurrence.

The 120 MW Starwood Power Project is planned to be located on a site east of the PEC. This location is approximately 460 feet from ML1, about 1,600 feet from ML2, and approximately 1,300 feet from ML3. (Ex. 100, p. 4.6-14.) The PEC, in combination with the SPP, will result in increases in the project area ambient noise. **Noise Table 4** below, shows estimated noise levels from the individual operations of the two projects and their cumulative noise impacts at these monitoring locations during the nighttime hours.

NOISE Table 4
Cumulative Noise Impact (PEC plus SPP)

Receptor	Measured Ambient During Nighttime Hours, dBA L_{90}	PEC Generated Noise Level, dBA	SPP Generated Noise Level, dBA	Cumulative, dBA L_{90}	Change
ML1	42[1]	49	55	56	+14
ML2	39[2]	58	42	58	+19
ML3	41[2]	42	44	47	+6

[1] Staff's calculations of average of four quietest consecutive hours of the nighttime
[2] Results of the hourly measurements between midnight and 2:40 a.m. (Ex. 100, p. 4.6-15.)

As shown in the table above, the cumulative noise could result in a significant increase in the ambient noise level at ML1, ML2, and ML3. As explained above, the current residents at ML1 and ML2 would be relocated or additional mitigation measures would be implemented in order to comply with the above identified noise LORS. Although the above cumulative result is based on the worst-case-

scenario assumption that both projects would be operating simultaneously during late night and early morning hours when L_{90} levels are lowest, both of these are peaker projects and would likely be expected to operate mostly during day time. Therefore, it is anticipated that both of the projects would rarely operate simultaneously during nighttime hours. Thus, the cumulative impact would likely be less significant than indicated in **Noise Table 4**.

Other projects within the vicinity of the PEC include the CalPeak Power Project and the Wellhead Power Project. These are, however, existing projects and their noise impacts have been accounted for in the above existing ambient noise measurements and therefore included in the above cumulative analysis. No other projects have been identified which, when combined with the PEC, would create significant direct cumulative noise impact in the project area.

In light of the above proposed mitigation measures and the following proposed conditions of certification we find that the PEC, combined with other new noise producing developments, would not produce significant cumulative noise impacts at the noise sensitive receptors.

8. Public Comment

No public or agency comment was received pertaining to the noise of the proposed project.

FINDINGS AND CONCLUSIONS

Based on the evidence, we find as follows:

1. Construction and operation of the Panoche Energy Center will result in noise levels exceeding applicable Laws, Ordinances, Regulations and Standards and will likely result in significant noise impacts at the noise-sensitive residential receptors.

2. Noise associated with construction activities at the project will be temporary in nature and mitigated to the extent feasible; therefore it will not result in a significant impact to the surrounding community.
3. Implementation of the Applicant's proposed appropriate mitigation in the form of good design practice and inclusion of appropriate project equipment, and implementation of the Conditions of Certification, would ensure that noise levels will not cause significant impacts.
4. The project owner will implement measures to protect workers from injury due to excessive noise levels.
5. The PEC will not create ground or airborne vibrations which cause significant off-site impacts.
6. With implementation of the Conditions of Certification, the project will be constructed and operated in conformity with the applicable laws, ordinances, regulations, and standards.

The Commission concludes that implementation of the following Conditions of Certification will ensure that the PEC will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration and that the project will not cause indirect, direct, or cumulative significant adverse noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within one mile of the project site and one-half mile of the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. 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 PEC, 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;
- If the noise is project related, take all feasible measures to reduce the noise at its source; 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 local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-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. 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. The project owner shall make the program available to Cal-OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 If the residents living in the 5-Plex (near ML1) are not relocated, 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 to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} measured near monitoring location ML1 (approximately 1,900 feet northeast of the center of the project site). 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 to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} measured near monitoring locationML3 (43405 West Panoche Road).

If the residents at ML1 are relocated to a new location within one mile of the project site, the project shall ensure that its operations will not cause noise level due to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} measured near the new location.

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.

A. When the project first achieves a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at monitoring location ML1 or at a closer location acceptable to the CPM. If the residents at ML1 are relocated to a new location within one mile of the project site, the project owner shall conduct this survey near that location, at a location acceptable to the CPM. This survey during power plant operation shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

B. During the period of the first survey, the project owner shall conduct a short-term survey of noise at monitoring location ML3, or at a closer location acceptable to the CPM. The short-term noise measurements shall be conducted during every hour of the nighttime hours, from 10 p.m. to 7 a.m., during the period of the survey.

C. 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 receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

D. If the results from any of the above noise surveys indicate that the power plant noise level plus ambient (L_{50}) at the affected receptor sites exceeds the above value during the above specified time periods, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

E. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The above surveys shall take place within 30 days of the project first achieving a sustained output of 90 percent or greater of rated capacity. Within 15 days after completing the above surveys, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey (conducted after implementation of the above mitigation measures), the project owner shall submit to the CPM a summary report of this new noise survey, performed as described above and showing compliance with this condition.

NOISE-5 Prior to the initial startup of the first combustion turbine, the project owner shall relocate the residents on the property at ML2 to the location specified in the signed agreement between the Applicant and the landowner of the property at ML2. 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 to plant operation plus ambient, during the four quietest consecutive hours of the nighttime, to exceed an average of 45 dBA L_{50} measured near this new location.

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.

A. When the project first achieves a sustained output of 90 percent or greater of rated capacity, the project owner shall conduct a short-term survey of noise at this new location or at a closer location

acceptable to the CPM. The short-term noise measurements shall be conducted during every hour of the nighttime hours, from 10 p.m. to 7 a.m., during the period of the survey.

The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

B. If the results from the above noise survey indicates that the power plant noise level plus ambient (L_{50}) at the affected receptor site exceeds the above value during the above specified time period, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The project owner shall transmit to the CPM a statement, signed by the project owner's project manager, stating that the residents on the property at ML2 have been relocated, and describing the new location and its distance to the project site.

The noise survey shall take place within 30 days of the project first achieving a sustained output of 90 percent or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

Within 15 days of completion of the new survey (conducted after implementation of the above mitigation measures), the project owner shall submit to the CPM a summary report of this new noise survey, performed as described above and showing compliance with this Condition.

NOISE-6 Following 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 person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure.

The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

CONSTRUCTION TIME RESTRICTIONS

NOISE-7 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times delineated below, unless a special permit has been issued by the County of Fresno:

Any day except Saturdays and Sundays	6 a.m. to 9 p.m.
Saturdays and Sundays	7 a.m. to 5 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

EXHIBIT 1
Noise Complaint Resolution Form

Panoche Energy Center Project (06-AFC-5)
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).

C. SOCIOECONOMICS

The section analyzes the potential impact to the social and economic structure within the project vicinity and region resulting from the construction and operation of the PEC. This analysis considers project-related impacts to population, housing, public services (fire protection, emergency response services, law enforcement, schools, and medical services) and utilities, county tax revenue, and economic benefits from the project. Additionally, this section analyzes the cumulative impacts on the availability of labor within the area. Permits required for the project, proposed mitigation measures, laws, ordinances, regulations, and standards, and agency contacts relevant to socioeconomics are also discussed in this section.

The criteria to be used in determining whether project-related socioeconomic impacts would be significant are set forth in CEQA Guidelines, Appendix G. Impacts attributable to the project are considered significant if they would induce substantial growth or reduction of population, induce substantial increase in demand for public services and utilities, displace a large number of people or existing housing, disrupt or divide the physical arrangement of an established community, or result in substantial long-term disruptions to businesses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Demographics, Finances, and Services

The affected area for socioeconomics as defined by the Applicant for the PEC in the AFC is the four county area surrounding the project, which would be located on west Panoche Road, about 2.2 miles east of Interstate 5, in the unincorporated northwest part of Fresno County.

Fresno County had a total population of 865,620 in 2004. By 2010, projections show 1,001,100 residents in Fresno County. The construction workforce will come from areas within a two-hour commute which include Fresno, Madera, Tulare, and Kings Counties. The operations workforce would come entirely from Fresno County. There would be little induced population growth and no displacement of population by the PEC.

Project construction is expected to occur over a 13-month period. The greatest number of construction workers (peak) would occur in the tenth month of construction. The number of construction workers would range from about 14 in the first month of construction to 364 workers at the peak of construction. There would be an average of 178 workers per month during construction.

During operation of the project, about 12 workers would be needed to maintain and operate the project. Operation workers would commute as much as one hour to the facility site from their homes. The operational workers are expected to be hired from Fresno County and commute rather than relocate.

The PEC would generate property taxes estimated at $3.5 million annually for Fresno County. Construction total sales tax is estimated to be $119,620, while operation total sales tax is estimated to be $77,358 annually. A school impact fee of $10,682.84 would be paid by the owner to the Mendota Unified School District. (See Condition of Certification **SOCIO-1.)**

Total capital costs are estimated at $250 million to $300 million. The construction 13-month payroll is $27 million. The annual operations payroll is $1 million. Approximately $1-$2 million would be spent locally on construction materials and supplies and $970,000 each operation year of the PEC for locally purchased materials as part of an operation and maintenance budget within Fresno County. (Ex. 100, pp. 4.8-4 – 4.8-6.)

The record shows that the expected increases in employment, sales tax and local expenditures for both construction and operation would be beneficial to the area. Since the workforce will likely commute to the project, neither the construction nor the operation workers will place an undue stress upon available housing. Existing educational, police, medical and emergency services will not be adversely impacted.

The PEC site is in the Mendota Unified School District, which has four schools and an enrollment of 2,434 students. The Mendota Unified School District is currently at capacity with plans to grow and add a middle school. School impact fees to the Mendota Unified School District are estimated to be $10,682.84.

The nearby Firebaugh-Las Deltas School District has four schools and 2,355 students. This district is currently experiencing low enrollment.

The addition of project-related children to schools that are at or over-capacity may increase costs in terms of supplies, equipment and/or teachers but the impact would be small. However, this is unlikely to occur since the non-local construction workers would likely commute weekly to the PEC site and would not likely relocate family members for the relatively short duration of construction.

For operation of the PEC, 12 operation workers are expected to be hired from the Fresno County labor force. Since all employees are expected to be hired from Fresno County, there should be no significant impacts to schools.

We conclude that there would not be a significant socioeconomic impact on education during the construction, commissioning, and operation of the PEC.

Fresno County Sheriff's Department provides service for the County and PEC site which is in the unincorporated part of western Fresno County. The site is served by Area 1 station in the City of San Joaquin about 24 miles or approximately 30 minutes from the PEC. Area 1 station stated it could respond to

emergency situations without any negative impacts on sheriff's services to the community. The PEC area is also patrolled by the California Highway Patrol. The PEC project would take steps during construction to minimize the potential for law enforcement, including the installation of secured fencing around the entire project site (including laydown area) with controlled access, and 24-hour onsite security guards. During operation, the facility would have permanent fencing, and installation of electronic sensor and alarm system. There are adequate law enforcement resources available for the PEC. We find no significant impacts upon access to law enforcement services resulting from the construction and operation of the PEC.

Fresno County contracts private emergency medical services from American Ambulance. American Ambulance has basic and advanced service and at least one paramedic available at all times. The project site is covered by the Mendota Station about 12 miles or 15 minutes away. Mendota Station can receive supplies of additional units from neighboring stations in Kerman and Los Banos in Merced County and has rapid helicopter service in Fresno called Skylife which is 45 miles, or about a one-half hour, one-way flight, away. Fresno Trauma Center, Coalinga Regional Memorial Hospital, Memorial Hospital Los Banos, and Dos Palos Memorial Hospital are within approximately one hour's driving distance of the PEC. The PEC would not displace significant numbers of people or directly or indirectly induce substantial population growth. Hence, there are no significant socioeconomic impacts upon the availability of medical services. (Ex. 100, pp. 4.8-7 – 4.8-9.)

2. Environmental Justice

Government Code section 65040.12 (c) defines "environmental justice" to mean "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." In 1997, the President's Council on Environmental

Quality issued Environmental Justice Guidance that defines minority as individuals who are members of the following population groups: American Indian or Alaskan Native, Asian or Pacific Islander; Black not of Hispanic origin; or Hispanic. Low-income populations are identified with the annual statistical poverty thresholds from the Bureau of the Census's Current Population Reports, Series P-60 on Income and Poverty (OMB 1978).

The steps recommended by these guidance documents to assure that environmental justice concerns are addressed include: (1) outreach and involvement; (2) a demographic screening to determine the existence of a minority or low-income population; and (3) if warranted, a detailed examination of the distribution of impacts on segments of the population.

The purpose of an environmental justice screening analysis is to determine whether a below poverty level and/or minority population exists within the potentially affected area of the proposed site. A demographic screening was conducted in accordance with the "Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis" (Guidance Document) (EPA 1998). People of color populations, as defined by this Guidance Document, are identified where either the minority population of the affected area is greater than 50% 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.

A review of the Census 2000 information shows the minority population by census block (the smallest geographic unit for which the Census Bureau collects and tabulates data) is 97.84% and 100% within a six-mile and one-mile radius, respectively, of the proposed PEC, which exceeds Staff's threshold of greater than 50%. Census 2000 by census block group (a combination of census blocks and subdivision of a census tract) information shows that the below poverty population is 23.5% within the six-mile radius and 23.5% within the one-mile

radius. Poverty status excludes institutionalized people, people in military quarters, people in college dormitories, and unrelated individuals under 15 years old. (Ex. 100, p. 4.8-2.)

3. Cumulative Impacts

Staff examined the potential impacts of the worst case scenario in which the PEC, Starwood Power Project, and Bullard Energy Center (in the City of Fresno) are constructed simultaneously. Even in that unlikely circumstance the labor forces required would amount to approximately 5 percent of the 2002 Fresno County construction workforce. Millwrights might be in such short supply from the four-county area (Fresno, Madera, Tulare, and Kings counties) as well as San Benito and Merced counties that it would be necessary to import them from other areas; the City of Fresno has ample supplies of temporary housing (hotels and motels) to accommodate them. Therefore, no cumulatively significant impacts are expected from the construction of the PEC. (Ex. 100, pp. 4.8-9 – 4.8-10.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude as follows:

1. The PEC will draw primarily upon the local labor force from nearby counties for the construction and the operation workforce.

2. The project will not cause an influx of a significant number of construction or operation workers into the local area.

3. The proposed project is not likely to have a significant effect upon local employment, housing, schools, medical resources, or fire and police protection.

4. Construction and operation of the project will not result in any significant direct, indirect, or cumulative socioeconomic impacts.

5. Minority and low income populations exist within both a one and a six mile radius of the site.

6. All environmental impacts from the PEC will be mitigated to below a level of significance.

7. The PEC will not cause or contribute to disproportionate impacts upon minority or low income groups.

We therefore conclude that, with the implementation of Condition of Certification **SOCIO-1** the project construction and operation activities will create some degree of benefit to the local area and will conform with principles of environmental justice.

CONDITION OF CERTIFICATION

SOCIO-1 The project owner shall pay the one-time statutory school development fee to the Mendota Unified School District as required by Education Code Section 17620.

Verification: At least 30 days prior to start of project construction, the project owner shall provide the Compliance Project Manager (CPM) proof of payment of the statutory development fee.

D. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the proposed project will affect the local area's transportation network. The evidence includes an analysis of: (1) the roads and routings that are proposed to be used for construction and operation; (2) potential traffic-related problems associated with the use of those routes; (3) the anticipated encroachment upon public rights-of-way during the construction of the proposed 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.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located on West Panoche Road about two miles east of Interstate 5 (I-5) in western Fresno County. The facility would be located south of and adjacent to an existing PG&E substation and the Wellhead and Calpeak generating stations.

Transportation routes in the project area include freeways, highways, and local roadways. Plant construction and operation traffic will use the existing roadways, which would include I-5 and West Panoche Road. The key roads and highways in the vicinity of the PEC are I-5 in the project area, West Panoche Road, Russell, and Manning Avenues. There are no bus or rail services in the vicinity other than school bus service[18] to and from school in the City of Mendota. There are no bicycle lanes in the vicinity. (Ex. 100, pp. 4.10-2 - 4.10-3; see **TRAFFIC AND TRANSPORTATION FIGURE 1**.)

[18] Neither the Applicant nor Staff found any impacts to school bus traffic from the construction or operation of the PEC. Nonetheless, in response to concerns about potential impacts due to the increased traffic during project construction raised in the proceeding regarding the nearby Starwood Power Project, the Applicant volunteered to conduct a worker awareness program alerting construction workers to the presence of the school bus and a refresher on applicable laws and driving techniques to prevent mishaps involving the school bus or children waiting for the bus. That plan is described in Condition **TRANS-2**. A similar requirement is proposed for the Starwood Power Project.

The existing Traffic Volume and Levels of Service (LOS) in the vicinity are shown in **Table 1**, below. The operating conditions of a roadway (surface street) system, including intersections, are described using the term "level of service."

Level of service (LOS) is a description of a driver's experience at an intersection or roadway based on the level of congestion (delay). LOS can range from "A," representing free-flow conditions with little or no delay to "F," representing saturated conditions with substantial delay.

TRAFFIC AND TRANSPORTATION Table 1
Roadway Segment Traffic Volume and LOS

Roadway Segment	Volume	LOS (AM/PM)
I-5 - Manning Avenue to Russell Avenue	35,398	B
West Panoche Road – I-5 to PEC site	41/73 (AM/PM Peak Hour) 1,057	A/A
West Panoche Road – East of PEC site	52/69	A/A

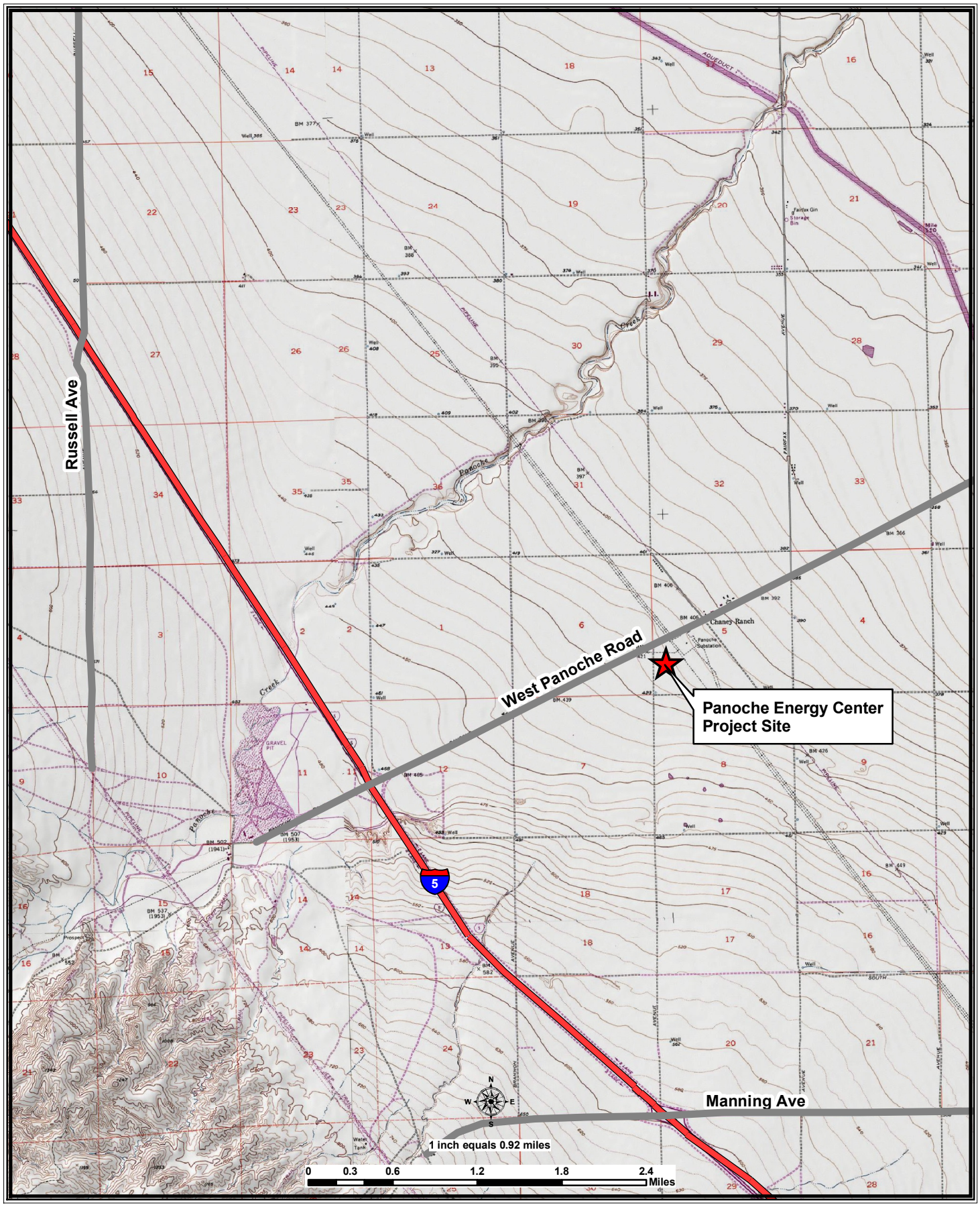
Source: Ex. 100, p. 4.10-4.

1. Construction

The Applicant anticipates that construction will take fourteen months. Based on regional demographics and availability of skilled laborers, the construction workers would probably come from Fresno County, however, some workers could come from Madera, Tulare, and Kings Counties. All plant construction workers would park on an eight acre parcel of land directly south of the PEC site. (Ex. 100, p. 4.10-5.) This would also serve as a laydown area for materials and equipment. (See Ex. 1, Figure 3.4-1.)

To reach the project site, construction workers coming from Fresno County would likely use I-5 and exit onto West Panoche Road. They would then go east until reaching the PEC access road. A right turn (heading south) would lead to the

TRAFFIC AND TRANSPORTATION - FIGURE 1
Panoche Energy Center - Local Transportation Network



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SOURCE: Ex. 100

project site. PEC construction workers could travel on several other state highways to reach the PEC site beside I-5, such as SR-152 (north of Fresno), and SR-198 (south of Fresno). Workers living in or near the City of Fresno could travel east on SR-180 to reach SR-33 and then proceed south on SR-33 to Panoche Road. The LOS for those state highways ranges from LOS A to C; all acceptable levels. (Ex. 100, p. 4.10-6.)

The average number of construction workers would be approximately 180, while the peak workforce would consist of 383 workers (including 19 substation expansion workers) during a three month period. (Ex. 100, p. 4.10-5 - 4.10-6.)

Total average construction traffic impact (workforce and trucks) would be 201 vehicle trips (180 workers plus 21 passenger car equivalent (PCE) trips for trucks and deliveries), or 402 one-way vehicle trips. Total peak construction traffic impact would be 428 vehicle trips (383 workers plus 45 PCE for trucks and deliveries), or 856 one-way vehicle trips. The average construction total is about a 38% increase in traffic (peak construction total is about an 81% increase) when compared to 2005 average daily traffic counts (1,060). (Ex. 100, p. 4.10-6.)

Heavy equipment will be used throughout the construction period. This includes trenching and earthmoving equipment, forklifts, cranes, cement mixers and drilling equipment. Project construction is expected to require seven trucks on average and fifteen trucks during peak construction (PCE of 21 and 45, respectively) per day (URS 2007a). In-bound and out-bound truck traffic would arrive and depart the project site using the same route as construction workers.

Condition of Certification **TRANS-1** will require repair of any damage to West Panoche Road from construction traffic, particularly heavy trucks. (Ex. 100, p. 4.10-6.)

Deliveries of hazardous materials during construction will be conducted in accordance with federal and state laws. The preferred transportation route for hazardous materials delivery would be via I-5, West Panoche Road, and PEC access road. This is the shortest and most direct route from I-5. (Ex. 100, p. 4.10-7.)

Approximately 2,400 feet of natural gas pipeline will be installed along the east side of the PEC site and will not impact West Panoche Road. The pipeline would connect to a PG&E line east of the existing substation (Ex. 1, pp. 1-3.) Water for all the project needs would be supplied by existing wells onsite. The 300 feet of new 230-kV transmission line for interconnection to the adjacent substation will be constructed within the project site boundaries. (Ex. 100, p. 4.10-6 - 4.10-7.)

The record also contains a discussion of two projects whose construction periods could coincide with that of the PEC. The proposed Starwood Power Project would be located on the east side of the PG&E substation and northeast of the PEC site. Starwood construction would commence in June 2008, approximately five months after the PEC construction would begin. The Starwood project would involve an average of 75 workers and 7 truck trips per day. Corresponding peak numbers are 110 workers and 42 trucks. With LOS A and B for West Panoche Road and I-5, the combination of workers and trucks for both projects arriving and departing during peak traffic periods (7 to 9 AM and 4 to 6 PM) would not cause a cumulatively significant degradation in LOS. (Ex. 100, p. 4.10-10.)

The Federal Correctional Institution (FCI), a medium security federal prison is slated to be built near Mendota, about 12 miles from the PEC site. Major construction of the new FCI was scheduled to begin in 2005 and completion was expected in 2008. Phase I was completed in March 2007 but the construction status of Phase II is unknown. There are no additional planned construction projects in this part of Fresno County. (Ex. 100, p. 4.10-10.)

2. Operation

During project operations, the 12 full-time employees will generate a maximum of 24 one-way trips daily. Other project-related trips (such as deliveries and visitors) will generate only a minor addition to the normal traffic on the surrounding streets. (Ex. 100, p. 4.10-8.)

Transportation of hazardous materials to and from the site will be conducted in accordance with all applicable LORS. The California Department of Motor Vehicles specifically licenses all drivers who carry hazardous materials. Drivers are required to check for weight limits and conduct periodic brake inspections. Commercial truck operators handling hazardous materials are required to take instruction in first aid and procedures on handling hazardous waste spills. Drivers transporting hazardous waste are required to carry a manifest which is available for review by the California Highway Patrol at inspection stations along major highways and interstates. Assuming compliance with existing federal and state standards, deliveries of hazardous materials such as aqueous ammonia and water treatment chemicals will not likely create significant impacts. (Ex. 100, p. 4.10-8.)

A licensed hazardous waste transporter would haul any hazardous waste from the project site to one of three Class 1 hazardous waste landfills in western Kern County near the communities of Buttonwillow and Kettleman City, and in Imperial County near the community of Westmoreland. (Ex. 100, p. 4.10-8.) The handling and disposal of hazardous substances are also addressed in the **WASTE MANAGEMENT, WORKER SAFETY AND FIRE PROTECTION** and **HAZARDOUS MATERIALS** sections of this proposed decision.

The closest major airport is Eagle Field Airport which is fourteen miles north of the PEC site. The existing flight pattern does not bring aircraft at low altitude over the project site. The CTG stacks, cooling tower and transmission line support

towers would not penetrate navigable airspace for any airport. The hot exhaust generated by a power plant can disturb atmospheric stability above the facility up to 1,000 above ground level, resulting in turbulence with the potential to affect aircraft maneuverability. However, the agricultural fields near the project area are not sprayed by crop-dusting aircraft and there are few (if any) aircraft that fly over or near I-5 in the project area. The project is located within Lemoore NAS's Military Operational Airspace; however, representatives from the military have reviewed the project and have concluded that it would not have any impact on the military mission in the area. (Ex. 100, p. 4.10-9.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude as follows:

1. The project as proposed would comply with all applicable LORS related to Traffic and Transportation, and would not degrade the LOS A and B on West Panoche Road and I-5.
2. Because of the distance from the nearest airports, minimal agricultural aviation (i.e., aerial spraying) activity, and no impact on the Lemoore NAS Military Operational Airspace, the project would not impact aviation safety.
3. Condition of Certification **TRANS-1** requires a mitigation plan to repair West Panoche Road if it is damaged by project related traffic.
4. There would be no significant direct or cumulative traffic and transportation impacts and therefore no environmental justice issues.

We therefore conclude that construction and operation of the project, as mitigated herein, will not result in any significant, direct, indirect, or cumulative impacts to the local or regional traffic and transportation system, nor will the project cause significant degradation in the LOS on area roads.

CONDITION OF CERTIFICATION

TRANS-1 Prior to site mobilization activities, the project owner shall prepare a mitigation plan for West Panoche Road should it be damaged by project construction. The intent of this plan is to ensure that if West

Panoche Road is damaged by project construction it will be repaired and reconstructed to original or as near original Condition as possible.

This plan shall include:

- Documentation of the pre-construction Condition of West Panoche Road from I-5 to the access road to the site. Prior to the start of site mobilization, the project owner shall provide to the CPM photographs or videotape of West Panoche Road.
- Documentation of any portions of West Panoche Road that may be inadequate to accommodate oversize or large construction vehicles, and identify necessary remediation measures;
- Provide for appropriate bonding or other assurances to ensure that any damage to West Panoche Road due to construction activity will be remedied by the project owner; and
- Reconstruction of portions of West Panoche Road that are damaged by project construction due to oversize or overweight construction vehicles.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a mitigation plan focused on restoring West Panoche Road to its pre-project Condition to the Fresno County Public Works and Planning Department for review and comment, and to the CPM for review and approval.

Within 90 days following the completion of construction, the project owner shall provide photo/videotape documentation to the Fresno County Planning Department, and the CPM that the damaged sections of West Panoche Road have been restored to their pre-project Condition.

TRANS-2 Worker Traffic Safety Training

The project owner shall brief and train all construction workers that commute to the site, and all truck drivers and delivery drivers that drive to and from the site during construction, on safety awareness and standards with regard to the nearby bus stop(s) and with regard to school children safety. The briefing and training shall be conducted for such workers and drivers before they begin working at the site and shall include the following elements:

- California highway and driving laws and regulations that relate to school busses and school children;

- The locations of bus stops and residences along the traffic routes in the vicinity of the site;
- The approximate times that school bus routes are driven to pick up and to drop off students;
- The type of risks to school children that can arrive on rural highways and roads during elevated construction traffic periods;
- The particular risks that can arise during low visibility conditions such as when foggy or at night;
- The need to be exceptionally careful and patient when following a slower moving vehicle to ensure heightened danger activities such as passing do not endanger school children crossing or walking along the road; and
- The need to be exceptionally alert and cautious during the morning and afternoon school bus periods and also the need to be alert for shortened days that result in school buses being present at unusual times.

Verification: The project owner shall report the results of the school bus andschool children safety training in its monthly compliance reports submitted to the CPM, beginning with the first report after site mobilization and continuing until construction is completed

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 in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings. (Cal. Code of Regs., tit. 14 § 15382, Appendix G.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed PEC project would be built in an agricultural area on the San Joaquin valley floor in western Fresno County. To the north, east, and south is a mosaic of irrigated farmland, orchards, and open space with scattered single family residences. To the west are U.S. Interstate 5 (I-5), a small area of highway service commercial related operations, farmland, rangeland, the Panoche Hills (including the Panoche Hills Wilderness Study Area) and Panoche Mountain (elevation 2,300 feet). Major concentrations of population are relatively isolated in the region. The closest population center is the City of Mendota, approximately 12 miles to the northeast.

To the east of the project site is Pacific Gas & Electric (PG&E) Company's Panoche Substation, a 230-kV electric substation. Further east, approximately 900 feet and 1,500 feet respectively are the operating CalPeak Power Panoche No. 2, a 49.5 MW peaking plant, the Wellhead Power Panoche, a 49.9 MW peaking plant, and the site of the proposed Starwood 120 MW peaking plant.

The PEC project would be constructed on a 12.8-acre portion of a 128-acre parcel (subject property). The subject property consists of a producing pomegranate orchard with trees six to eight feet in height and operating electric generation facilities and infrastructure. A portion of the orchard will be removed to

allow the construction of the power plant and provide for a construction laydown area. (See **Visual Resources Figure 1** – Aerial View of Site and Vicinity.)

The most visible components of the PEC include four 90-foot tall combustion turbine generator exhaust stacks, four 53-foot tall combustion turbine variable bleed valve (VBV) silencer stacks, a 44-foot tall raw water tank, a 42-foot tall by 154-foot long 5-cell cooling tower, and four 40-foot tall combustion turbine inlet air filters. (See **Project Description Figure 4** – Artist Rendering of Proposed Facility.)

The proposed project would interconnect to the Panoche Substation by a 300-foot long 230-kV overhead electric transmission line supported by four onsite 60-foot tall steel dead-end structures, and a single steel tubular tower approximately 60-80 feet tall that would be located adjacent to the substation.

During the construction period, the 8-acre construction laydown area which adjoins the south side of the project site would be used for vehicle parking, and the storage of construction equipment and materials. Vehicle access to the construction laydown area would be from West Panoche Road by a private road.

A visual resources analysis has an inherently subjective aspect. However, the evidence indicates that the use of an ascertainable methodology is also necessary to accurately evaluate visual impacts. This methodology includes an assessment of compliance with applicable laws, the extent of any alteration to the existing viewshed including blockage of desirable views, creation of a decrease in visual quality, and 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 a visual resources analysis. (Ex. 100, pp. 4.12-23 - 4.12-26.)

To assess the significance of a visual impact, it is necessary to determine whether the project would:

- have a substantial adverse effect on a scenic vista; substantially damage scenic resources including, but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- create a new source of substantial light or glare which would adversely affect day or night time views in the area. (14 Cal. Code of Regs., App. G and I.)

Scenic Vistas. A scenic vista for the purpose of visual impact analysis is defined in the evidence as a distant view through and along a corridor or opening that exhibits a high degree of pictorial quality. There are no scenic vistas in any of the Key Observation Points (KOP 1, KOP 2, and KOP 3) viewsheds. The evidence shows that the proposed project would not have a substantial adverse effect on a scenic vista, and would thus cause a less than significant visual effect. (Ex. 100, p. 4.12-4.)

Scenic Resources. A scenic resource for the purpose of visual impact analysis includes 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.

In the KOP 1, KOP 2, and KOP 3 viewsheds there are no identified scenic resources. The proposed project would not cause a significant visual impact to a scenic resource. (Ex. 100, p. 4.12-4.)

Visual Character or Quality. Evaluation under this criterion includes an analysis of the impacts of the construction of the project and its appurtenant facilities, as well as the effect of the completed project, including plumes, upon the existing viewshed.

The PEC site is surrounded on all sides by orchards (pomegranates, other fruits, and nuts). Although the visibility of the construction site and ground level activities thereon is limited by the surrounding orchard, project structures would become fully visually exposed as they exceed the height of the orchard. There are three residences located on the north side of West Panoche Road approximately 800 feet north of the construction site. At least one of these residences would be exposed for a temporary duration to a partial unobstructed view of ongoing construction activities taking place on the site. Specifically, residents would have an unscreened view of the tops of the project's tallest structures during the latter part of the 24 month construction period.

During pipeline construction, the ground surface along the proposed alignments would be temporarily disrupted by the presence of construction equipment, excavated piles of dirt, concrete and pavement, as well as construction personnel and vehicles. After construction, the ground surfaces would be restored. The evidence indicates that the restored ground surfaces and buried pipelines would not create a change to the existing visual Condition.

KOP 1 represents the view the from three single family residences that may have a view of structures on the project site. (See **Visual Resources Figure 2 – KOP 1 Existing.**)

This number of potentially affected residences is considered to be low and their view towards the project site is obstructed to the degree of having a low visibility of the site. However, structures extending above the orchard; specifically, two steel 90-foot tall Unit 3 and Unit 4 stacks, two 53-foot tall combustion turbine VBV

silencer stacks, and two 40-foot tall air inlet filters above the 6-8-foot height of the orchard, would be a highly visible and an unobstructed visual presence to the KOP 1 location. The duration of view of the potential tops of the power plant structures from a residence(s) would be considered high (extended). Overall, the residential view exposure is considered moderate.

From KOP 1, the stacks would extend into a skyline above rows of dark green small trees comprising the pomegranate orchard. The proposed non-reflective neutral gray color and smooth steel surfaces would introduce a degree of contrast. Though the contrast of the project structures could be seen, it would not attract attention that is, instantaneously draw eye movement towards it. When compared to existing manmade and natural elements in the KOP viewshed the contrast is considered moderately low. Furthermore, project structures would occupy a small portion of the total field-of-view of KOP 1and would appear subordinate when compared to other elements in the KOP view. The relative visual scale of the structures as simulated in the KOP 1 viewshed is considered to be low. (See **Visual Resources Figure 3 – KOP 1 Proposed.**)

KOP 2 represents the existing view from the backyard of a five unit residential building that fronts the south side of West Panoche Road, approximately 1,500 feet east of the proposed power plant site. (See **Visual Resources Figure 4 – KOP 2 Existing.**) The number of potentially affected residences is considered to be low. The duration of view to an exposure of power plant structures from the backyard of the residential units at the necessary view angle would also be considered moderately low. The view of the proposed project site is obstructed and disrupted by manmade structures, including the 60-foot tall tubular steel structure of the Panoche Substation, several 110-foot tall electric overhead transmission line towers, several 50-75-foot tall metal and wood vertical poles and overhead transmission wires, such that it is considered to be a moderately low visibility from the KOP. Overall, residential viewer exposure is considered moderately low.

From KOP 2, the proposed non-reflective neutral gray color and smooth steel flat finished surface of project structures would be obstructed by the Panoche Substation and disrupted by other structures in the view. The potential contrast introduced by project structures is considered to not be visible from this KOP. The degree of contrast introduced by the project's structures is diffused by other contrasting structures, and considered low when compared to existing manmade and natural elements in the KOP viewshed. The project structures would occupy a small portion of the total field-of-view of KOP 2. In addition, the structures would visually appear subordinate when compared to other elements in the KOP view. The relative visual scale of the structures as simulated in the KOP 2 viewshed is considered to be low. (See **Visual Resources Figure 5 – KOP 2 Proposed.**)

KOP 3 represents the view of motorists near the northbound I-5 on and off-ramps, near the top of an elevated overpass of I-5 on West Panoche Road, two-miles west of the proposed project site. (See **Visual Resources Figure 6 – KOP 3 Existing.**) There are no residences at the KOP location. The estimated duration of view for a motorist traveling east on West Panoche Road from I-5 to an exposure of potential power plant structures on the site to be two minutes which is considered to be high. The view from KOP 3 toward the proposed project site includes West Panoche Road, a highway off-ramp, a line of 110-foot tall tubular steel electric overhead transmission towers and wires, a windbreak consisting of a row of 20 to 30-foot tall cypress trees, a variety of orchards, and a distant view of the structure of the Panoche Substation. The estimated public appeal of the visual quality of the KOP 3 viewshed is considered to be moderately low because motorists on a freeway system have a moderate to low sensitivity to the visual environment due to their concentration on driving and their focus on their destination. The view of the proposed project site is obstructed by orchards and non-native vegetation to the degree of having what is considered a moderately low visibility from the KOP. Overall viewer exposure

from I-5 is considered moderately low while viewer exposure from West Panoche Road is considered moderate. (See **Visual Resources Figure 7 – KOP 3 Proposed.**)

From KOP 3, the vertical, cylindrical form of the proposed project's 90-foot tall Units 1 and 2 exhaust stacks would be barely visible. The degree of contrast introduced by the project's structures is considered low when compared to existing manmade and natural elements in the KOP viewshed. The proportionate size compared to other manmade and natural elements in the view indicate that the project structures would occupy a very small portion of the total field-of-view of KOP 3. In addition, the structures would visually appear subordinate when compared to other elements in the KOP view. The relative visual scale of the structures as simulated in the KOP 3 viewshed is considered to be low. (Ex. 100, p. 4.12-7 - 4.12-11.)

On adjoining properties to the east of the project site are the Panoche Substation, the CalPeak Power Panoche No. 2 and Wellhead Power Panoche peaking plants. The Starwood Peaker plant is a potential development project 1,500 feet east of the project. The CalPeak, Wellhead, and the proposed Starwood peaking plants do not use cooling towers and do not operate around the clock. The cumulative visual impact from publicly visible water vapor plumes introduced by the proposed peaking plants and generated by the operating peaking plants is considered to be low.

The addition of publicly visible structures by the proposed Starwood and Panoche electric generation projects would add to an existing grouping of industrial structures next to the Panoche Substation. The existing and planned projects are visually limited to an existing small industrial "island" surrounded by an expanse of agriculture.

Impacts may also result from visible plumes from the cooling tower exhausts. The evidence shows that in a worst-case operating profile, visible water vapor plumes from the cooling tower are predicted to occur 30.1 percent of the time during seasonal (November through April) daylight clear hours. However, the plume dimensions for the project's cooling tower plumes are predicted to visually appear subordinate when compared to other elements in the KOP viewsheds. Condition of Certification **VIS-4** is designed to verify the cooling tower design parameters and ensure that visible plume impacts remain insignificant. (Ex. 100, pp. 4.12-11 - 4.12-13, 4.12-20 - 4.12-21.)

Light or Glare. Project construction activities would take place largely during daylight hours however, during the startup phase of the project some activities may occur 24 hours a day, 7 days a week. If there are periods of nighttime construction, illumination that meets state and federal worker safety regulations will be used. Condition of Certification **VIS-2** limits lighting during construction to conduct construction activities safely, and requires shielded and highly directional lighting.

During operation, lighting at the facility will be restricted to areas required for safety, security, and operation. Exterior lights are to be hooded, and lights will be directed onsite to minimize light or glare. Condition of Certification **VIS-3** limits lighting during operation and requires submittal of a lighting control plan. (Ex. 100, pp. 4.12-13 - 4.12-14, 4.12-18 - 4.12-20.)

FINDINGS AND CONCLUSIONS

Based on the evidence, we find and conclude as follows:

1. The introduction of proposed PEC structures including its associated linear facilities would generate a less than significant visual effect at the three selected Key Observation Points.

2. The introduction of the proposed PEC including its associated linear facilities would generate a less than significant new source of light or glare to night-time or daytime views.

3. Publicly visible water vapor plumes generated by the PEC's cooling towers and combustion turbine exhaust stacks based on the information provided by the Applicant for the project would cause a less than significant visual impact.

4. The cumulative visual impact of publicly visible water vapor plumes emitted by the PEC, and other existing and planned electric generation facilities on neighboring properties would be less than significant. Except for the project, existing and planned electric generation facilities do not involve the use of cooling towers. In addition, under normal weather conditions no visible water vapor plumes would form from the power plant exhaust stacks due to the very high exhaust temperature from their turbines.

5. With mitigation, the construction and operation of the PEC would not cause any significant visual impacts to adjacent land uses, or contribute considerably to a cumulative visual impact.

We therefore conclude that, with implementation of the following Conditions of Certification, the project will not cause any significant direct, indirect, or cumulative impacts to visual resources.

CONDITIONS OF CERTIFICATION

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-1 The project owner shall color and finish the surfaces of all project structures and buildings visible to the public to ensure that they: (1) minimize visual intrusion and contrast by blending with the landscape; (2) minimize glare; and (3) comply with local design policies and ordinances. The transmission line conductors shall be non-specular and non-reflective, and the insulators shall be non-reflective and non-refractive.

The project owner shall submit a surface treatment plan to the Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

A. A description of the overall rationale for the proposed surface treatment, including the selection of the proposed color(s) and finishes;

B. A list of each major project structure, building, tank, pipe, and wall; transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system;

C. One set of color brochures or color chips showing each proposed color and finish;

D. One set of 11" x 17" color photo simulations at life size scale of the proposed treatment for project structures, including structures treated during manufacture, from the Key Observation Points;

E. A specific schedule for completing the treatment; and

F. A procedure to ensure proper treatment maintenance for the life of the project.

The project owner shall not request vendor treatment of any buildings or structures during their manufacture, or perform final field treatment on any buildings or structures, until the project owner has received treatment plan approval by the CPM.

Verification: At least 90 days prior to specifying vendor color(s) and finish(es) for structures or buildings to be surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and Planning, Development Services Division for review and comment. The project owner shall provide the CPM with the County's comments at least 30 days prior to the estimated date of providing paint specification to vendors.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revision(s) for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Within ninety (90) days after the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed and is ready for inspection; and shall submit one set of electronic color photographs from the Key Observation Points.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify a): the condition of the surfaces of all structures and buildings at the end of the reporting year; b) maintenance activities that occurred during the reporting year; and c) the schedule of maintenance activities for the next year.

CONSTRUCTION LIGHTING

VIS-2 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

A. All lighting shall be of minimum necessary brightness consistent with worker safety and security;

B. All fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and obtrusive spill light beyond the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries;

C. Wherever feasible and safe and not needed for security, lighting shall be kept off when not in use; and

D. Complaints concerning adverse lighting impacts will be promptly addressed and mitigated.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection. If the CPM requires modifications to the lighting, the project owner shall implement the necessary modifications within 15 days of the CPM's request and notify the CPM that the modifications have been completed.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 10 days after completing implementation of the proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report following complaint resolution.

PERMANENT EXTERIOR LIGHTING

VIS-3 To the extent feasible, consistent with safety and security considerations and commercial availability, the project owner shall design and install all permanent exterior lighting such that a) light fixtures do not cause obtrusive spill light beyond the project site; b) lighting does not cause excessive reflected glare; c) direct lighting does not illuminate the nighttime sky; d) illumination of the project and its immediate vicinity is minimized, and e) lighting complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and

Planning, Development Services Division for review and comment a lighting mitigation plan that includes the following:

A. A process for addressing and mitigating complaints received about potential lighting impacts;

B. Lighting shall incorporate commercially available fixture hoods/shielding, with light directed downward or toward the area to be illuminated;

C. Light fixtures shall not cause obtrusive spill light beyond the project boundary;

D. All lighting shall be of minimum necessary brightness consistent with operational safety and security; and

E. Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches, timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to determine the required documentation for the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to the County of Fresno Department of Public Works and Planning, Development Services Division for review and comment a lighting mitigation plan. The project owner shall provide the County's comments to the CPM at least 10 days prior to the date lighting materials are ordered.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been installed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 10 days of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule

for implementation. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days of complaint resolution.

PLUME FORMATION

VIS-4 The project owner shall ensure that the cooling tower is designed and operated as presented to the Energy Commission during the licensing of the PEC project.

The cooling tower shall be designed and operated so that that the exhaust air flow rate per heat rejection rate (1) will not be less than 11.1 kilograms per second per megawatt when the ambient conditions are 16.8 degrees F and 60% relative humidity, (2) will not be less than 14.6 kilograms per second per megawatt when the ambient conditions are 63.3 degrees F and 60% relative humidity, and (3) will not be less than 12.5 kilograms per second per megawatt when the ambient conditions are 114 degrees F and 60% relative humidity. The project owner shall provide a cooling tower fogging frequency curve from the cooling tower manufacturer for this project's final cooling tower design.

Verification: At least 90 days prior to ordering the cooling towers, the project owner shall provide to the CPM for review the final design specifications of the cooling tower to confirm that design mass flow rates for the cooling tower cells meet these requirements. The project owner shall not order the cooling tower until notified by the CPM that this design requirement has been satisfied.

The project owner shall provide the CPM written documentation demonstrating that the cooling towers have consistently been operated within the above-specified design parameters (except as necessary to prevent damage to the cooling tower) in the project's Annual Compliance Report, and at anytime as requested by the CPM. If requested by the CPM, the project owner shall provide the requested cooling tower operating data to the CPM at a date determined by the CPM.

The project owner's demonstration of compliance shall be determined using vendor supplied fan flow data, the number of cooling tower cells in operation, and hourly heat rejection values. In addition, compliance for ambient conditions between the three ambient points listed in the condition of certification shall be determined through interpolation.

If it is determined that the cooling tower has not operated within the specified design parameters, the project owner shall provide proposed remedial actions for CPM review and approval.

VISUAL RESOURCES - FIGURE 1

Panoche Energy Center Project - Aerial View Of Site And Vicinity

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 2 - KOP 1

Panoche Energy Center Project - Existing Front Yard View From One Of Three Residences On West Panoche Road, Across The Street From The Proposed Project Site

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 3 - KOP 1

Panoche Energy Center Project - Photo Simulation Of Front Yard View Taken From One Of Three Residences On West Panoche Road, Across The Street From The Proposed Project Site

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 4 - KOP 2

Panoche Energy Center Project - Existing Backyard View From One Of Five Residences On West Panoche Road

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 5 - KOP 2

Panoche Energy Center Project - Photo Simulation Of Backyard View From One Of Five Residences On West Panoche Road

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 6

Panoche Energy Center Project - Existing Motorist View From The Overpass Of Interstate 5 And West Panoche Road

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100

VISUAL RESOURCES - FIGURE 7

Panoche Energy Center Project - Photo Simulated View From The Overpass Of Interstate 5 And West Panoche Road

CALIFORNIA ENERGY COMMISSION

SOURCE: Ex. 100