STATE OF CALIFORNIA
Energy Resources Conservation
and Development Commission

In the Matter of:	)	**Docket No. 99-AFC-7**
	)	
Application for Certification for the PASTORIA ENERGY FACILITY (PEF)	)	**NOTICE OF AVAILABILITY OF PRESIDING MEMBER S PROPOSED DECISION and NOTICE OF COMMITTEE CONFERENCE**
	)	

I. NOTICE OF AVAILABILITY

The Committee released the Presiding Member s Proposed Decision (PMPD) for the Pastoria Energy Facility on November 17, 2000. Copies have been sent to the Proof of Service List, and are also available from the Commission s Publications Unit, 1516 9th Street, MS-13, Sacramento, CA 95814. You may telephone the Publications Unit at (916) 654-5200 and ask for Publication No. P800-00-009. The PMPD may also be viewed on the Commission Internet Web Site at: **<www.energy.ca.gov/sitingcases/pastoria>**

Members of the public and interested governmental agencies may submit written comments on the PMPD. The public comment period ends on December 18, 2000. All comments must be received ***no later than 3:00 p.m. on December 18, 2000***, by the Commission s Docket Unit, 1516 9th Street, Sacramento, CA 95814. Identify all comments with Docket No. 99-AFC-7.

II. NOTICE OF CONFERENCE

The Committee will also hold a public Conference to receive comments on the PMPD as follows:

Friday, December 15, 2000
Beginning at 2 p.m.
California Energy Commission
Hearing Room B
1516 Ninth Street
Sacramento, California

OR

Via TELEPHONE CONFERENCE CALL: Toll Free: 1-888-791-2132
Participant Pass Code: PASTORIA
The Conference Leader is Susan Gefter

Applicant, Staff, and all other formal parties wishing to participate at this Conference must file written comments on the PMPD. These comments shall be served and filed ***no later than 3:00 p.m., December 18, 2000***. Members of the general public wishing to participate at this Conference are encouraged, but not required, to submit their written comments by the same date.

For information concerning public participation, contact the Commission s Public Adviser, Roberta Mendonca, at (916) 654-4489 or, toll free, at (800) 822-6228; or e-mail: **<pao@energy.state.ca.us>**

Media inquiries should be directed to Claudia Chandler at (916) 654-4989. If you require special accommodations, contact Robert Sifuentes at (916) 654-5004 at least five days prior to the Conference.

Technical questions should be directed to the Commission s Project Manager, Kae Lewis, at (916) 654-4176, or email: **<klewis@energy.state.ca.us>**

Questions of a legal or procedural nature should be addressed to Susan Gefter, the Hearing Officer, at (916) 654-3893, or email: **<sgefter@energy.state.ca.us>**

Dated:_____

ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION

_____
ROBERT A. LAURIE, Commissioner
Presiding Committee Member
Pastoria AFC Committee

_____
MICHAL C. MOORE, Ph.D., Commissioner
Associate Committee Member
Pastoria AFC Committee

PRESIDING MEMBER S PROPOSED DECISION

APPLICATION FOR CERTIFICATION

PASTORIA
ENERGY FACILITY

Docket No 99-AFC-7

NOVEMBER 2000

CALIFORNIA ENERGY COMMISSION

Gray Davis, *Governor*

P 800-00-009

CALIFORNIA ENERGY COMMISSION
1516 NINTH STREET
SACRAMENTO, CA 95814-5512

The Committee hereby submits its Presiding Member's Proposed Decision for the Pastoria Energy Facility Power Project (Docket Number 99-AFC-7). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (20 Cal. Code of Regs.,// 1749-1752. 5).

Based solely upon the evidence of record, we conclude that project construction and operation will comply with all applicable laws, ordinances, regulations, and standards.

Therefore, we recommend the Application for Certification for the Pastoria Energy Facility Power Project be approved, and that the Commission grant the Applicant a license to construct and operate the project.

Dated: _____

ENERGY RESOURCES CONSERVATION
AND DEVELOPMENT COMMISSION

_____
ROBERT A. LAURIE, Commissioner
Presiding Committee Member
Pastoria AFC Committee

_____
MICHAL C. MOORE, Ph.D., Commissioner
Associate Committee Member
Pastoria AFC Committee

INTRODUCTION

A. SUMMARY OF THE PROPOSED DECISION

This Decision contains our rationale for determining that the Pastoria Energy Facility (PEF) complies with all applicable laws, ordinances, regulations, and standards, and may therefore be licensed. It is based exclusively upon the record established during these certification proceedings and summarized in this document. We have independently evaluated this evidence, provided references to the record[1] supporting our findings and conclusions, and specified the measures required to ensure that the PEF is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

PEF, as proposed by Enron North America Corporation (Applicant), will be located in southeastern Kern County on the Tejon Ranch property about 30 miles south of Bakersfield. The project is a combined cycle 750 (nominal) megawatt (MW) natural gas-fired power plant sited on a 31-acre parcel owned by Tejon Ranchcorp. Associated facilities include a new 1.38-mile, 230 kilovolt (kV) electric overhead transmission line that will interconnect to Southern California Edison s existing Pastoria Substation; a new 11.65-mile natural gas fuel supply line that connects with the Kern-Mojave Pipeline; and a 0.2-mile water supply pipeline that connects to the Wheeler-Ridge-Maricopa Water Storage District s pipeline network. PEF will also construct a new 0.85-mile access road from the Edmonston Pump Plant Road.

PEF is the seventh merchant power plant to be licensed by the Energy Commission. Its electrical output will be sold into the California Power Exchange, as well as to wholesale power consumers pursuant to bilateral sales agreements. Project construction is expected to commence in the first quarter of

2001; capital costs are estimated at $400 million. The project will provide 325 construction jobs at peak employment, as well as 25 permanent operational jobs. Full-scale commercial operation is anticipated by mid-2003. The Kern County Building and Construction Trades Council has a project labor agreement with PEF to supply qualified workers from the local region for project construction, maintenance, and operation. Condition **SOCIO-2** ensures that the project owner will make a good faith effort to recruit employees and purchase materials/supplies in Kern County.

Extensive coordination occurred in the process with numerous local, state, and federal agencies. Applicant and Commission staff worked with the Kern County Planning Department, the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or Air District), the California Air Resources Board (CARB), the U.S. Environmental Protection Agency (USEPA), the United States Fish & Wildlife Service, the California Department of Fish and Game, the California Department of Health Services, U.S. Army Corps of Engineers, the Regional Water Quality Board, the Wheeler Ridge-Maricopa Water Storage District, the California Independent System Operator (Cal-ISO), Southern California Edison (SCE), California Unions for Reliable Energy, as well as Intervenors Kern Audubon Society and Kern-Kaweah Sierra Club.

SJVUAPCD was responsible for coordinating input from the USEPA and CARB, in consultation with Commission staff, in drafting its Final Determination of Compliance (FDOC) on the project s conformity with state and federal air quality standards. PEF has provided more than sufficient offsets to comply with SJVUAPCD s requirements. The project will use the best available control technology (BACT), identified by SJVUAPCD, to reduce emissions to levels of insignificance. The conditions imposed by SJVUAPCD are incorporated into this Decision.

---

[1] All references to the Reporter s Transcript appear as date RT page. The dates refer to 2000 unless otherwise noted.

Project BACT includes the proposal to employ XONON™ technology to reduce NOx emissions. Since this is a new technology that has not yet been proven on the large turbines used by PEF, the Applicant has proposed Selective Catalytic Reduction (SCR) control technology in the event that XONON™ is not feasible for scale-up when the project is ready for commercial operation. SCR, the industry standard emission control technology, relies on ammonia in the NOx cleansing process.

Intervenors Kern Audubon Society and Kern-Kaweah Sierra Club were active Intervenors in this proceeding. Both were concerned that project-related emissions would degrade air quality and cause detrimental health effects from ammonia slip during the SCR process. The evidence of record clearly establishes, however, that the project complies with all applicable federal, state, and local regulatory programs that are designed to protect air quality and public health.

PEF will provide habitat compensation funds to mitigate potential impacts on the San Joaquin kit fox and other sensitive species found in the region. Mitigation also includes the creation of an open space easement to provide a kit fox corridor. Additional mitigation measures will reduce potential avian electrocution and collision with the project s transmission line. Intervenors Kern Audubon Society and Kern-Kaweah Sierra Club asserted that Applicant and Staff failed to identify several species of concern that could be impacted by project activities. The evidentiary record, however, reveals a complete examination of potential impacts to protected species under federal, state, and local laws, ordinances, regulations, and standards (LORS). Condition **BIO-10** requires PEF to provide a Biological Resources Mitigation Implementation and Monitoring Plan that will include all mitigation measures identified by federal, state, and local regulatory agencies.

The Kern County Board of Supervisors approved a cancellation of the Williamson Act contract for a new 31.05-acre parcel originally held by Tejon Ranchcorp that will be dedicated to the project site. The new parcel is subject to the provisions of the California Subdivision Map Act, which requires a new parcel map for this property. A zoning variance is also required since the site is located in a zoning district that designates lands previously held under Williamson Act contracts as 80-acre parcels. The County Planning Department approved the parcel map and zoning variance, and also delineated the zoning conditions of approval it would have imposed as part of a conditional use permit if it were the permitting agency. Condition **LAND-USE-1** requires PEF to submit a Site Development Plan that incorporates the conditions identified by the county.

PEF will provide approximately $3.1 million per year in property taxes, which will accrue to Kern County and be allocated on a pro rata basis to county government, the Kern County Fire Department, city governments, special districts, and county schools. Applicant will negotiate mitigation fees with the Fire Department to purchase equipment necessary to respond to emergencies at the project site. Condition **WORKER SAFETY-3** ensures that PEF will execute a final agreement with the Fire Department prior to the start of construction activities.

Ms. Dee Dominguez, Chairwoman of the Kitanemuk Tribe, the Tinoqui Chalola Council of Kitanemuk and Yowlumne Tejon Indians, presented public comment to express her view that the record on cultural resources did not accurately characterize the ethnographic background of Native American peoples in the project vicinity. To remedy her concerns about accurate historical reporting, the parties stipulated and the Committee agreed to accept her interpretation of the historical data as Exhibit 60.

B. SITE CERTIFICATION PROCESS

The PEF and its related facilities are subject to Energy 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 process and associated documents are functionally equivalent to the preparation of the traditional 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 and timely review and analysis of all aspects of this proposed project. During this process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

Specifically, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally, or on a more formal level as an Intervenor with the same legal rights and duties as the project developers. Public participation is encouraged at every stage of the process.

The process begins when an Applicant submits the Application for Certification (AFC). Commission staff reviews the data submitted as part of this AFC, and recommends to the Commission whether the AFC contains adequate information to begin the review. Once the Commission determines that an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the licensing process. This process includes public conferences and evidentiary hearings, as well as providing a recommendation (the Presiding

Member s Proposed Decision) to the full Commission concerning a project's conformity with applicable laws, ordinances, regulations, and statutes.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such further technical information as 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 then publicizes its initial technical evaluation of a project in a document called the "Staff Assessment".

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the various participants. Information presented at this event becomes the basis for a Hearing Order that announces and schedules formal evidentiary hearings. At these hearings, all entities that have formally intervened as parties are eligible to present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public may present comments at these hearings. Evidence adduced during these hearings provides the basis for the Committee s analysis and recommendation to the full Commission.

The Committee s analysis and recommendation appear in the Presiding Member's Proposed Decision (PMPD), which is available for a public review period of at least 30 days. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may then 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

Public Resources Code, sections 25500 et seq. and Commission regulations (20 Cal. Code of Regs.,／1701, et seq.) mandate a public process and specify the occurrence of certain necessary events. The key procedural elements that occurred in the present case are summarized below.

On November 30, 1999, Applicant filed its Application for Certification (AFC) seeking approval from the Commission to construct and operate the 750-megawatt facility. On January 6, 2000, the full Commission accepted the AFC as data adequate in order to commence the 12-month review process.

The Committee published a notice of "Informational Hearing and Site Visit" on February 10, 2000. The notice was sent to all entities who were known to be interested in the proposed project, including the owners of property adjacent to, or in the near vicinity of, PEF. The notice was also published in local general circulation newspapers.

The Committee conducted the Informational Hearing at the Petrol Travel Center at the Laval/I-5 exit in Lebec on March 13, 2000. At this event, the Committee and other participants discussed the proposed project, described the Energy

Commission's review process, and identified the opportunities for public participation. The parties also toured the site where the project will be situated.

Entities that intervened as formal parties in this proceeding include CURE, Kern Audubon Society, and the Kern-Kaweah Sierra Club.

Subsequently, Commission staff scheduled several public workshops to discuss project details with agencies and members of the public. These workshops were held either in Bakersfield or via teleconference in Sacramento. The Staff-sponsored workshops were scheduled on March 14, 15, 16, 29, June 13, and August 3.

The Committee issued its required Scheduling Order on April 10. Pursuant to this Order, and following additional case development, Commission staff released its Preliminary Staff Assessment (PSA) on July 14. Subsequent to the release of the PSA, the Committee conducted a Status Conference on August 16 to review the 12-month schedule. Thereafter, on August 28, the Committee conducted a Prehearing Conference to assess the status of the case and determine whether substantive issues required adjudication.

After considering the comments of all parties, the Committee subsequently scheduled the dates for issuance of the Final Staff Assessment, which was filed on September 5, and the commencement of formal evidentiary hearings, which were conducted in Bakersfield on September 18 and 19, 2000. The Committee received testimony and evidence at the evidentiary hearings. After reviewing the evidentiary record, the Committee published its Presiding Member's Proposed Decision on November 17, 2000.

I. PROJECT PURPOSE AND DESCRIPTION

The Pastoria Energy Facility Limited Liability Company (Applicant), a subsidiary of Enron North America Corporation (Enron), was established to develop the Pastoria Energy Facility (PEF), a nominal 750 megawatt (MW) natural gas fired, merchant-class electrical generating project on Tejon Ranch property in southern Kern County. (Ex. 1, / 1.1.) Pursuant to an option agreement with Tejon Ranchcorp, Applicant will lease the project site for the limited purpose of developing PEF. (Ex. 1, / 3.1; Ex. 6; Memorandum of Option, filed with Kern County Recorder, May 3, 1999.) Although Tejon Ranch property is under the Williamson Act, Tejon Ranchcorp obtained a cancellation of its Williamson Act contract for the acreage dedicated to the PEF site. (Ex. 59.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

PEF will be situated on a 31-acre parcel owned by Tejon Ranchcorp. (Ex. 38, Testimony of Joe Patch.) The site is located about 30 miles south of Bakersfield at the base of the Tehachapi Mountains, 6.5 miles east of Interstate Highway 5 at Grapevine. The site is adjacent to an existing gravel mining operation, approximately 0.85 mile north of the California Aqueduct and about 1.3 miles north of the Edmonston Pumping Plant. Applicant will use a temporary 25-acre construction laydown area south of the site. Access to the site will be provided from the Edmonston Pumping Plant Road via a new 0.85-mile Plant Access Road constructed as part of the project. (Ex. 1, / 3.1.) The site is currently undeveloped, vegetated with non-native grassland, and is used for cattle grazing.

The major features of the 750 MW (nominal)[2] power plant include three 168 MW (nominal) natural gas fired, F-class combustion turbine generators (CTG), each operating in combined cycle mode.[3] Two CTGs will be installed in a two-on-one configuration with one steam turbine generator (STG) at 185 MW and one CTG will be installed in a one-on-one configuration with one STG at 90 MW. The heat from hot exhaust gas that flows from each CTG through a heat recovery steam generator (HRSG) is extracted to produce steam to power the STG. Each of the three HRSG exhaust stacks will be 200 feet tall. The project also includes 24 cooling towers, arranged in two tower banks. The 64-feet tall towers incorporate plume abatement coils and high efficiency drift eliminators. (Ex. 1, p. 14.)

Applicant proposes to use XONON™ as the Best Available Control Technology to control NO_x emissions from the gas turbines. Since the performance of XONON™ on F-class turbines is not yet determined, the selective catalytic reduction (SCR) method of reducing NO_x emissions is considered the default option. (Ex. 35, p. 14.)

The project will interconnect its new 230 kilovolt (kV) switchyard with Southern California Edison s (SCE) electrical system at the existing Pastoria Substation via a 1.38-mile long, double circuit 230 kV overhead transmission line mounted on 120-feet tall steel lattice towers that will parallel an existing transmission

[2] Note that this nominal rating is based upon preliminary design information and generating equipment manufacturers' guarantees. The project's actual maximum generating capacity may differ from, and possibly exceed, this figure. If the project s actual generating capacity should exceed this nominal rating using the equipment described in the record of evidence, no conditions of certification would be violated.

[3] Applicant has reserved space for a fourth CTG, in a one-on-one configuration, which may be added at a future date. Applicant understands that an additional CTG will require a new application for certification. (Ex. 1, p. 3.1-4.)

corridor.[4] Map 3.2-1, replicated from Exhibit 1 shows the transmission line route that runs south of the project site. (Ex. 1, p. 3.1-3.)

PEF will use natural gas supplied through an 11.65 mile, 16-24 inch diameter interconnection pipeline to the existing 42-inch diameter pipeline jointly owned by the Kern River Gas Transmission Company and the Mojave Pipeline Company (Kern-Mojave Pipeline). The pipeline runs northeast of the project site. The project will utilize up to an estimated 120 million standard cubic feet per day of pipeline quality natural gas. The gas line is shown on Map 3.2-1 below.

PEF will contract its water supply from the Wheeler Ridge-Maricopa Water Storage District (WRMWSD or District) under a new rate for large industrial customers. Water will come from the California Aqueduct at a tie-in located about one mile southwest of the PEF site and delivered through an existing District pipeline network via a new 0.2-mile water supply pipeline. See Map 3.2-1. PEF has the option to purchase up to 5,000 acre feet of water from WRMWSD s pool water, which is made available when other District customers do not take their full entitlement. When this surface water is not available, PEF will use backup water from the Westside Mutual Water Company contracted through the services of Azurix, a water brokering firm co-owned by Enron. Westside Mutual, a member of the Kern County Water Agency (KCWA) has agreed to deliver up to an annual 5,000 acre feet of surface water exchanged from their State Water Project allocation for groundwater from the Kern Water Bank. (Ex. 35, p. 15; Ex. 28.)

[4] If PEF obtains a contract to sell electric power directly to the Edmonston Pumping Station, a new line may be required from the Pastoria Substation to the pumping station switchyard. Applicant acknowledges that it must file a request to amend the certification if this new line is necessary. (Ex. 1, p. 3.1-4.)

Legend

R1 MP 0.0 — **Route 1 (1.38 mi)** Proposed 230 kV Transmission Line

R2 MP 0.0 — **Route 2 (0.05 mi)** Proposed Water Supply Line **(DELETED 2/00)**

R2A MP 0.0 — **Route 2A (0.15 mi)** Proposed Water Supply Line **(ADDED 2/00)**

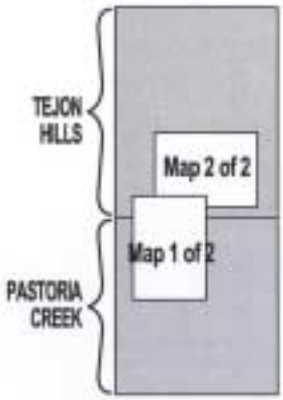
R3 MP 0.0 — **Route 3 (11.65 mi)** Proposed Fuel Gas Pipeline

R3A,3B MP 8.35 — **Route 3A (13.8 mi), 3B (18.5 mi)** Alternative Fuel Gas Pipelines **(DELETED 2/00)**

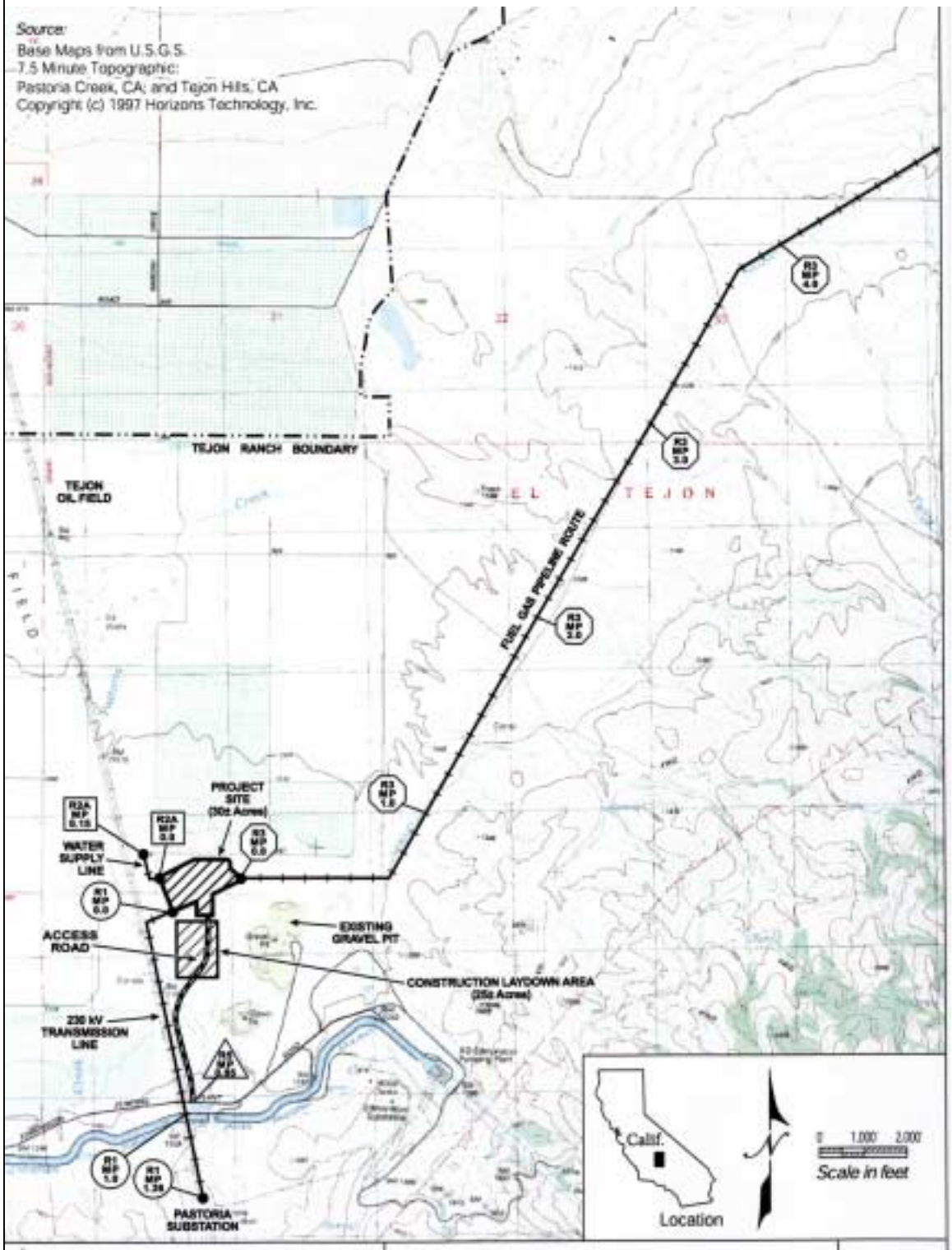
R4 MP 0.0 — **Route 4 (1.7 mi)** Proposed Wastewater Discharge Line **(DELETED 2/00)**

R5 MP 0.0 — **Route 5 (0.85 mi)** Proposed Access Road

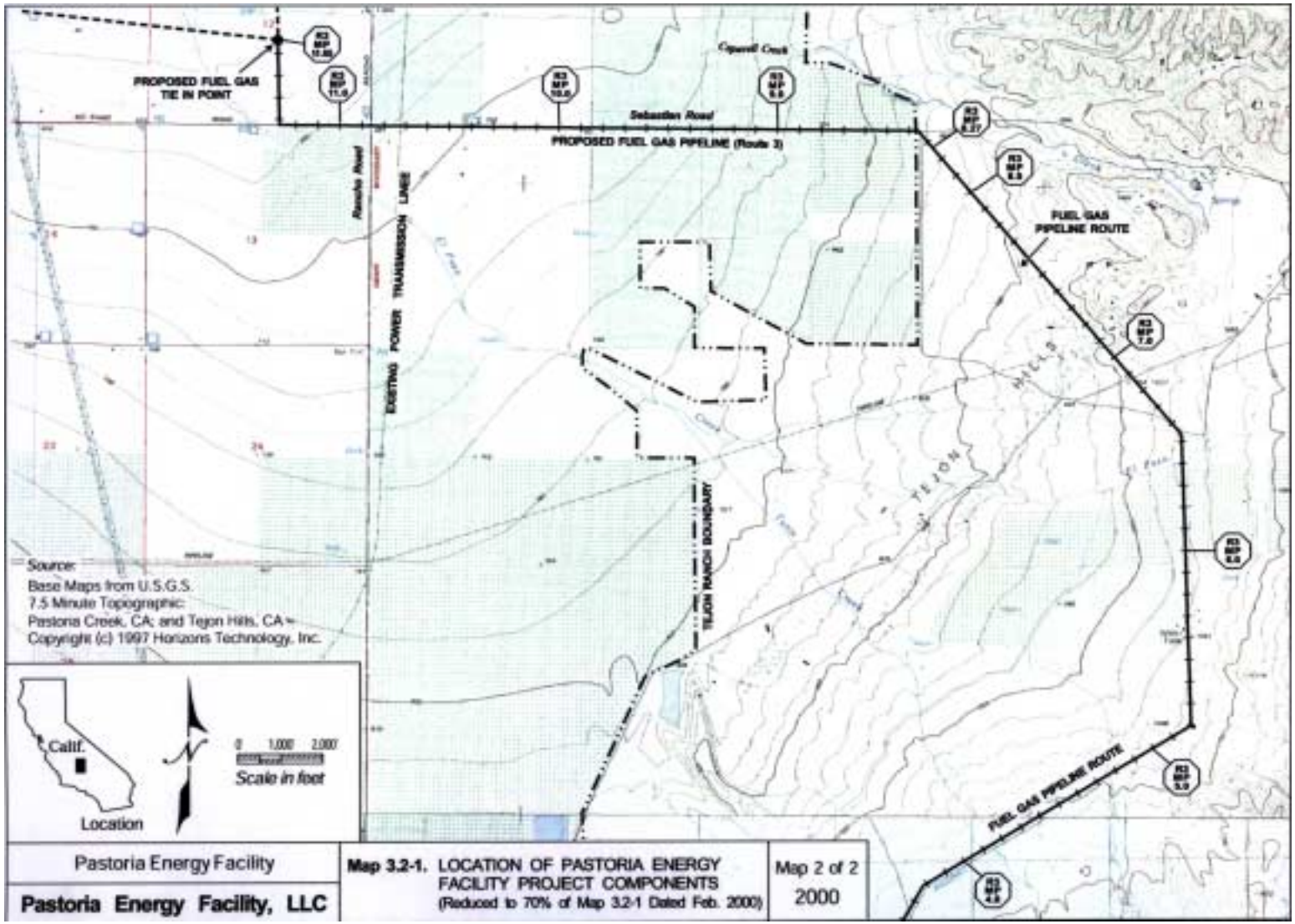
NOTE: **Route 2A (new 2/00) is a subset of deleted Route 4.**



Pastoria Energy Facility	**Map 3.2-1.** LOCATION OF PASTORIA ENERGY FACILITY PROJECT COMPONENTS (Legend)	2000
Pastoria Energy Facility, LLC		



Pastoria Energy Facility	Map 3.2-1. LOCATION OF PASTORIA ENERGY FACILITY PROJECT COMPONENTS (Reduced to 70% of Map 3.2-1 Dated Feb. 2000)	Map 1 of 2
Pastoria Energy Facility, LLC		2000


PROPOSED FUEL GAS TIE IN POINT
Sebastian Road
PROPOSED FUEL GAS PIPELINE (Route 3)
Rancho Road
EXISTING POWER TRANSMISSION LINES
FUEL GAS PIPELINE ROUTE
TEJON HILLS
TEJON RANCH BOUNDARY
FUEL GAS PIPELINE ROUTE
Source:
Base Maps from U.S.G.S.
7.5 Minute Topographic:
Pastoria Creek, CA; and Tejon Hills, CA
Copyright (c) 1997 Horizons Technology, Inc.
Calif.
Location
0 1,000 2,000
Scale in feet
Pastoria Energy Facility
Pastoria Energy Facility, LLC
Map 3.2-1. LOCATION OF PASTORIA ENERGY FACILITY PROJECT COMPONENTS
(Reduced to 70% of Map 3.2-1 Dated Feb. 2000)
Map 2 of 2
2000

Applicant will employ a zero liquid discharge (ZLD) system to process all project wastewater streams except for sanitation and storm water streams.[5] The ZLD process, which concentrates the dissolved and suspended constituents in the wastewater through a combination of evaporation and crystallization, will result in two to eight cubic yards per day of non-hazardous salt cake. The ZLD system consists of filtration, an evaporator-condenser, a brine crystallizer, and related equipment. Sanitary wastewater will be disposed onsite by a septic system and leach field. (Ex. 35, p. 15; Ex. 38, Testimony of Joe Patch.) The site will also include storm water detention ponds to control storm water drainage. (Ex. 35, pp. 373, 384, 410-412.)

The capital cost of the project is estimated at $400 million. Construction will take about two years. Applicant expects to begin operation in mid-2003. The project will contribute to the local economy by creating 325 construction jobs during the peak employment period and approximately 25 permanent jobs to operate the plant. The power plant is designed as a baseload facility to sell electricity in the deregulated market via bilateral contracts or through the California Power Exchange. (Ex. 1, p. 3.9-1.)

FINDINGS AND CONCLUSIONS

1. Applicant proposes to construct and operate the Pastoria Energy Facility (PEF), a 750 MW (nominal) power plant consisting of three combined cycle natural gas fired, F-class combustion turbine generators, three heat recovery steam generators with exhaust stacks 200 feet in height, two steam turbine generators, 24 cooling towers each 64 feet in height, a high voltage switchyard, other power generation equipment, and auxiliary facilities.

[5] Applicant s water treatment process is shown in a flow diagram (Exhibit 44) described in testimony presented by Mr. Patch, the chief engineer for the project. (9/18 RT 24-30.) Exhibit 44 traces the water flow as it is taken from the aqueduct and moved through the complete system into the plant until it reaches the project s zero discharge system. (*Id*., at p. 24.)

2. The project site will be located in southern Kern County on a 31-acre parcel on Tejon Ranch property leased to Applicant for the limited purpose of developing the PEF.

3. Linear facilities include a new 11.65 mile gas pipeline, a new, 0.85 access road, a new 0.2 mile water supply pipeline, and a new 1.38 mile 230 kV double circuit overhead transmission line.

We conclude that the Pastoria Energy Facility is described in sufficient detail to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act (CEQA).

II. NEED CONFORMANCE

Prior to January 1, 2000, the Public Resources Code directed the Commission to perform an integrated assessment of need, taking into account 5 and 12-year forecasts of electricity supply and demand, as well as various competing interests, and to adopt the assessment in a biennial electricity report. In certification decisions, the Commission was required to find that a proposed power plant was in conformance with the Commission s integrated assessment of need for new resource additions. [Pub. Resources Code,∕∕25523 (f) and 25524(a).]

Effective January 1, 2000, Senate Bill 110 (Stats. 1999, ch. 581) repealed Sections 25523(f) and 25524(a) of the Public Resources Code, and amended other provisions relating to assessment of need for new resources. Specifically, it removed the requirement that the Commission make a finding of need conformance in a certification decision. Senate Bill 110 states in pertinent part:

> Before the California electricity industry was restructured, the regulated cost recovery framework for power plants justified requiring the commission to determine the need for new generation, and site only power plants for which need was established. Now that power plant owners are at risk to recover their investments, it is no longer appropriate to make this determination. (Pub. Resources Code,∕25009, added by Stats. 1999, ch. 581,∕1.)

As a result of this legislation, an application for certification (AFC) that reaches final Commission decision after January 1, 2000 is not subject to a determination of need conformance. Since the final decision on the AFC in this case will occur *after* January 1, 2000, the Commission is not required to include a need conformance finding.

III. PROJECT ALTERNATIVES

For projects such as the Pastoria Energy Facility that have been exempted from the Notice of Intention requirements of Public Resources Code section 25540.6, the Commission is required to examine the feasibility of available site and facility alternatives which substantially lessen the significant adverse impacts of the proposal on the environment. (Cal. Code of Regs., tit. 20,／1765.) This inquiry must also comply with California Environmental Quality Act (CEQA) guidelines, which require an evaluation of the comparative merits of range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project as well as an evaluation of the no project alternative. [Cal. Code of Regs., tit. 14,／15126(d).]

The range of alternatives, which we are required to consider, is governed by a rule of reason. This means that our consideration of alternatives may be limited to those that would avoid or substantially lessen any of the significant effects while continuing to attain most of the basic objectives of the project, 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(d) (5).]

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence of record describes the methodology used to analyze project alternatives and includes a discussion of alternative technologies and alternative project sites as well as the no project alternative.

1. Methodology

Staff used the following methodology in preparing the alternatives analysis:

- Identify basic project objectives (Ex. 35, p. 484);
- Identify project s potential significant adverse impacts (Ex. 35, p. 487);
- Identify and evaluate feasible alternative generation technologies (Ex. 35, pp. 488-489);
- Identify and analyze alternative site locations (Ex. 35, pp. 489-490);
- Evaluate the no project alternative (Ex. 35, pp. 492-493); and
- Evaluate whether alternative technologies and/or sites would reduce or avoid any significant impacts. (Ex. 35, p. 494.)

Staff initially found that the project posed potential significant adverse impacts in the technical areas of air quality, biological resources, land use, soil and water resources, and visual resources. (Ex. 35, p. 487.) However, Applicant agreed to implement measures that will mitigate all potential impacts to levels of insignificance. (*Ibid*.) Thus, there are no unmitigated impacts.

2. Project Objectives

Analysis of project alternatives begins with an identification of Applicant s project objectives, which include the following:

- Construct and operate a merchant power plant in Southern California Edison s (SCE s) service area that supplies economic, reliable, and environmentally sound electrical energy and capacity to southern California in the deregulated power market.
- Operate a baseload facility at maximum continuous output in a profitable manner.
- Locate near key infrastructure elements, such as transmission line interconnections, and supplies of process water and natural gas supplies at competitive prices.
- Sell electricity at a price that provides a clear benefit to customers while returning a profit that justifies the private investment and risk incurred by the project owner.

- Utilize tested and reliable technology, but also explore and utilize new technology where economically and commercially feasible. (Ex. 35, p. 484; Ex. 1,/3.11.)

2. Generation Technology Alternatives

Staff considered options that do not require the construction of a natural gas-fired facility such as demand side management[6] and the use of non-fossil fuel technologies.

Staff compared various non-fossil fuel technologies with the proposed project, scaled to meet the project s objectives. These included solar, wind, and biomass.[7] Staff determined that solar and wind technologies would require large land areas resulting in significant land use, biological, and visual impacts that are not feasible alternatives. Biomass technology was also rejected due to the higher level of air emissions resulting from burning wood chips or agricultural waste compared to use of natural gas. Moreover, biomass plants typically produce under 10 MW and would not meet project objectives. (Ex, 35, p. 489.)

[6] Public Resources Code section 25305(c) excludes consideration of demand side management measures as alternatives in a siting case. Staff, however, provided a discussion of demand side management for consideration by the air quality regulatory agencies in their Prevention of Significant Deterioration (PSD) permit review. (Ex. 35, p. 487, fn. 1.)

[7] There are no geothermal or hydroelectric resources in the target area of southern San Joaquin Valley, and therefore, these technologies do not meet project objectives. (Ex. 35, p. 488, fn. 2.)

3. Alternative Design

Applicant considered changing the project design, equipment, or technologies to possibly reduce potential adverse impacts.[8] (Ex. 1,/3.11 et seq.) While some of the alternatives were found to be feasible, most would not result in fewer environmental effects that the preferred project proposal. Further, each alternative was less cost effective than the plant configuration described in the AFC and, therefore, would not be as competitive in the deregulated electricity market. (*Ibid*.)

4. Alternative Sites

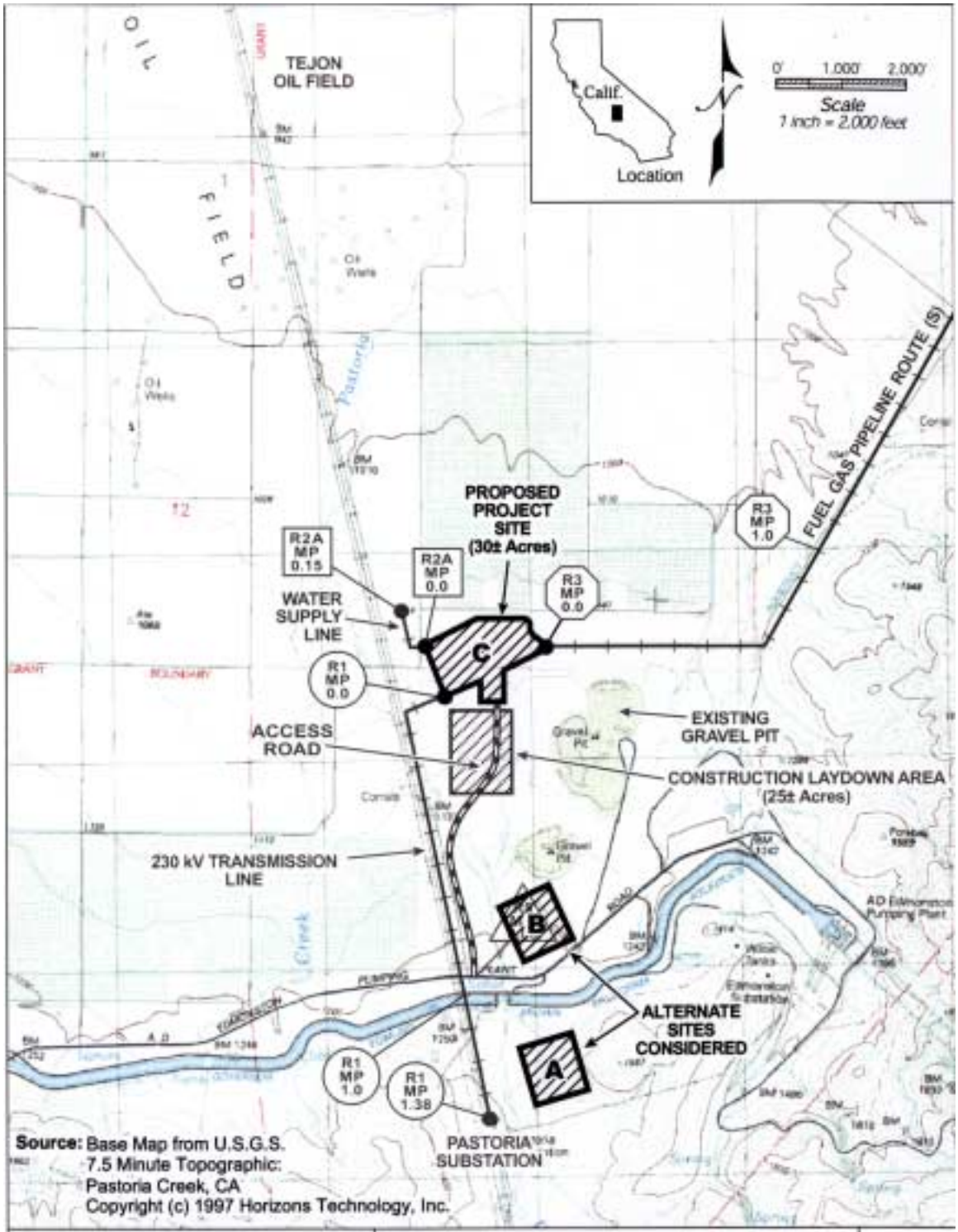
In evaluating alternative sites, consideration was given to the underlying objectives of the project, as well as several criteria identified by Applicant for choosing the preferred site location:

- A supportive landowner with available land and appropriate zoning;
- A minimal number of involved landowners for project linears;
- Access to natural gas at competitive pricing;
- Access to electric transmission interconnection to SCE;
- Minimal impact on visual resources; and
- Access to potential baseload customer. (Ex. 1,/3.11.2.)

[8] These alternatives included: non-fossil fuel technologies, alternative emissions control, alternative plant configuration, alternate inlet air cooling, alternative heat rejection systems, alternative water supply, alternative cooling tower water treatment, demineralized water treatment, transmission alternatives, and wastewater disposal alternatives. (Ex. 1,/3.11 et seq.)

Applicant considered two alternative sites on Tejon Ranch property in addition to the proposed site.[9] (See **Figure 3.11-1**, replicated from Exhibit 6.) In particular, Applicant was interested in locating the site near the Edmonston Pumping Plant based on the possibility of selling electricity to that facility. (Ex. 1,/3.11.2; 9/18 RT 42-42.) The comparative features of alternative sites A, B, and C (proposed site) were analyzed in tabular form as shown in Exhibit 6. (See **Alternatives Tables 1, 2, 3**, replicated from Exhibit 6.) According to Table 1, all three sites met the Applicant s siting criteria; however, sites A and B were removed from consideration due to their proximity to elevated terrain in the Tehachapi Mountains, which would result in significant concentration levels of criteria air pollutants and associated impacts on air quality. (Ex. 1,/3.11.2; Ex. 35, p. 490.)

[9] Applicant confined its site alternatives analysis to the boundaries of Tejon Ranch, which covers 270,000 acres in Kern and Los Angeles Counties. (Ex. 35, p. 484.) Staff initially explored a site alternative outside Tejon Ranch, but this was unnecessary because all potential adverse impacts at the preferred site have been mitigated to levels of insignificance. (*Ibid.*)



Pastoria Energy Facility	**Figure 3.11-1.** LOCATION OF ALTERNATE SITES CONSIDERED FOR PASTORIA ENERGY FACILITY (Based Map Consistent with Map 3.2-1 Filed February 2000)	1999
Pastoria Energy Facility, LLC		

ALTERNATIVES TABLE 1

SITE A (ALTERNATE): FEASIBILITY/ASSESSMENT

NO	ITEM	CONSIDERATION/EVALUATION	FEASIBILITY		
			TECH	ECON	ENV
1.	Land Area	• Adequate non-agricultural land area available. • Land area disturbed ± 30 acres. • Site grading required	Yes	Yes	Yes
2.	Storm Water Runoff	• Site located at the very foot of the Techachapi Mountains • Site located in the watershed area that, exiting north through a gap in the Aqueduct, forms Pastoria Creek. • Potential hydrological changes to the area caused by the Site will effect the site, Pastoria Creek and the Pastoria Substation.	No	No	No
3.	Plant Access Road	• Short length • Crosses the California Aqueduct and must accommodate heavy hauls.	No At this location	No	Yes
4.	Makeup Water Supply	• Short length • Pumping required	Yes	No	Yes
5.	Electrical Transmission Line	• Short length • Towers must accommodate flooding.	Yes	Yes	Yes
6.	Fuel Gas Pipeline	• Requires ± 1.5 miles of additional underground pipeline • Crosses the California Aqueduct and Edmonston Pump Plant Road.	Yes	No	No
7.	Wastewater To Injection Wells	• Requires ± 1.5 miles of additional pipeline • Crosses the California Aqueduct	Yes	No	Yes
8.	Visual	• Terrain helps obscure visibility of site	N/A	Yes	Yes
9.	Air Quality	• Site located at the very foot of the Techachapi Mountains • The mountainous terrain located south, east and west of the site results in significant concentration levels of NOx, PM_{10} and CO emissions.	No	No	No

Source: Ex. 6

ALTERNATIVES TABLE 2

SITE B (ALTERNATE): FEASIBILITY/ASSESSMENT

NO	ITEM	CONSIDERATION/EVALUATION	FEASIBILITY		
			TECH	ECON	ENV
1.	Land Area	• Adequate non-agricultural land area available • Land area disturbed ± 30 acres • Site grading required	Yes	Yes	Yes
2.	Storm Water Runoff	• Site located very near the base of the Techachapi Mountains • Site located at the head of the Pastoria Creek. • Potential hydrological changes to existing creek flow patterns will occur/be required.	Yes	Yes	Yes
3.	Plant Access Road	• Short length • Access requires crossing Pastoria Creek on Edmonston Pump Plant Road.	Yes	Yes	Yes
4.	Makeup Water Supply	• Short length • Pumping required	Yes	Yes	Yes
5.	Electrical Transmission Line	• Short length • Crosses Aqueduct • Towers must accommodate flooding	Yes	Yes	Yes
6.	Fuel Gas Pipeline	• Requires ± 1 mile of additional underground pipeline.	Yes	No	Yes
7.	Wastewater To Injection Wells	• Requires ± 1mile of additional pipeline	Yes	No	Yes
8.	Visual	• Plant will be slightly visible from I-5 approximately 6.5 miles to the west	Yes	Yes	Yes
9.	Air Quality	• Site located very near the base of the Techachapi Mountains • The proximity of the mountainous terrain located south, east and west of the site results in significant concentration levels of NO_x, PM_{10} and CO emissions.	No	No	No

SOURCE: EX. 6

ALTERNATIVES TABLE 3

SITE C (PROPOSED): FEASIBILITY/ASSESSMENT

NO	ITEM	CONSIDERATION/EVALUATION	FEASIBILITY		
			TECH	ECON	ENV
1.	Land Area	• Adequate land area available • Land area disturbed ± 30 acres located in non-agriculture area adjacent to both an abandoned and an operating gravel quarrying operation. • Site grading required	Yes	Yes	Yes
2.	Storm Water Runoff	• Site located downstream and east of the Pastoria Creek drainage channel. • The use small berms south of the site provides storm water runoff protection to the Plant. • Very minor, if any, hydrological changes occur in the area south of the Plant.	Yes	Yes	Yes
3.	Plant Access Road	• Requires ± 1 mile of roadway • The intersection of Edmonston Pump Plant Road and the Plant Access Road is west of Pastoria Creek. • The Plant Access Road crosses Pastoria Creek.	Yes	No	Yes
4.	Makeup Water Supply	• Requires a ± 1 mile pipeline from the Aqueduct • Gravity flow eliminates the requirement to pump • Pipeline crosses Pastoria Creek adjacent to the Plant Access Road.	Yes	Yes	Yes
5.	Electrical Transmission Line	• Requires ± 1 mile of transmission line • New transmission line will parallel 3 existing SCE transmission lines • New transmission line located behind (west) of existing transmission lines • Several of the new transmission towers will be installed in the flood plain.	Yes	No	Yes
6.	Fuel Gas Pipeline	• Reduces underground pipeline length by ± 1.5 miles • Eliminates the crossing of Pastoria Creek.	Yes	Yes	Yes
7.	Wastewater To Injection Wells	• Reduces pipeline length by ± 1.5 miles	Yes	Yes	Yes
8.	Visual	• Plant will be slightly visible from I-5 approximately 6.5 miles to the west • Extending the existing tree line north and south of the Plant will reduce plant visibility from I-5. • Site abuts on-going gravel quarrying operations visible from I-5.	Yes	Yes	Yes
9.	Air Quality	• Site located ± 1.5 miles north of the foot of the Techachapi Mountains • Acceptable concentration levels of NO_x PM_{10}, and CO emissions are achieved.	Yes	Yes	Yes

Source: Ex. 6

5. Linear Facilities

Staff found no need to consider alternate transmission line routes because the majority of the proposed line parallels an existing transmission corridor. (Ex. 35, p. 492.) Alternatives to the proposed water supply plan included dry cooling or hybrid cooling but these options were found to be economically infeasible. (*Ibid*.; See, **Soil and Water Resources** section.) Applicant s initial wastewater disposal plan was changed to the Zero Liquid Discharge (ZLD) option to avoid the potentially significant environmental impacts of wastewater well injection. Finally, Applicant s preferred gas pipeline route avoids the potential biological and cultural impacts that were likely to occur using alternative routes. (Ex. 35, p. 492.)

6. No Project Alternative

Applicant asserts that the no project alternative would result in no project being built at the proposed site by the project developer. This would not be consistent with Applicant s goals of developing a project to provide a fair return on the project investment nor would it provide 750 MW of new capacity and energy to the state s electricity market. (Ex. 1,/3.11.7.) Moreover, Staff notes that the no project alternative would eliminate economic benefits to Kern County, including increased property taxes, employment, sales taxes, and sales of services, manufactured goods, and equipment. (Ex. 35, p. 493.)

Staff s analysis shows that if the project were not built, the currently uncultivated site could remain rural in character. There would be no interference with kit fox habitat, no increased air emissions, and no increased water usage. However, Kern County has rezoned the parcel from agricultural to industrial so it is speculative to assume that the no project alternative would preserve the site in its present undeveloped condition. (Ex. 35, p 493; Exs. 58, 59.) Both Intervenors Kern-Kaweah Chapter of Sierra Club and the Kern Audubon Society

believe that the rezoning of this property will bring industrial development to the Tejon Ranch area. (9/19 RT 48:16-18; 60-61.) While this may be the long-term result of permitting the Pastoria project, the County s zoning decisions are local in nature. Moreover, if the project is not built on this site, the need for new generation resources in the state may bring other power plant proposals to this region that could have either greater or fewer impacts than the current proposal. It is thus impossible to compare the undeveloped site with other unknown future developments.

FINDINGS AND CONCLUSIONS

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

1. The project site, which is located on the Tejon Ranch property, is an undeveloped parcel that has been rezoned from agricultural to industrial uses.

2. The evidentiary record contains a review of alternative technologies, fuels, and the no project alternative.

3. No feasible technology alternatives such as geothermal, hydroelectric, solar, or wind resources are located near the project or are capable of meeting project objectives.

4. The use of alternative generation technologies or cooling technologies would not prove efficient, cost effective or mitigate any significant environmental impacts to greater levels of insignificance than the proposed project description.

5. The evidentiary record does not establish that significant environmental impacts would be avoided under the no project alternative.

6. The evidentiary record contains an adequate analysis of alternative site locations.

7. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the Pastoria Energy Facility will not create any significant direct, indirect, or cumulative adverse environmental impacts.

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

IV. 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 contained in this Decision.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The evidence of record contains a full explanation of the purposes and intent of the Compliance Plan (Plan). The Plan is the administrative mechanism used to ensure that the Pastoria Energy Facility 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 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. (Ex. 35, pp. 506-508.)

The Compliance Plan is composed of two broad elements. The first element is the "General Conditions". These General Conditions basically:

- 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 second general element of the Plan is 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 measures required to mitigate potentially adverse project impacts 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. Applicant has acknowledged the applicability of all conditions imposed in this Decision. (9/19 RT 204 et. seq.)

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

1. The Compliance Plan and the specific Conditions of Certification contained in this Decision assure that the Pastoria Energy Facility 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.

COMPLIANCE PLAN

GENERAL CONDITIONS OF CERTIFICATION

COMPLIANCE PROJECT MANAGER (CPM) RESPONSIBILITIES

A CPM will oversee the compliance monitoring and shall be responsible for:

1. Project facilities is in compliance with the terms and conditions of the 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, it should be understood that the approval would involve all appropriate staff and management.

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

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

The CPM may schedule 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 shall ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight or inadvertence and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process may need to be publicly noticed unless they are confined to administrative issues and process.

ENERGY COMMISSION RECORD

The Energy Commission shall maintain as a public record, in either the Compliance file or Docket 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 changes and the resulting staff or Energy Commission action taken.

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the conditions of certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate.

ACCESS

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

The project owner shall maintain project files on-site or at an alternative site approved by the CPM, for the life of the project. The files shall contain copies of all as-built drawings, all documents submitted as verification for conditions, and all other project-related documents for the life of the project, unless a lesser period is specified by the conditions of certification.

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

COMPLIANCE VERIFICATIONS

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. appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audit of project records; and/or
4. Energy Commission staff inspection of mitigation and/or other evidence of mitigation.
5. 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
Pastoria Energy Facility Project
Docket No. 99-AFC-7(C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

If the project owner desires Energy Commission staff action by a specific date, they shall so state in their submittal and include a detailed explanation of the effects on the project if this date is not met.

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 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

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 compliance conditions 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 for each condition (e.g., not started , in progress or completed date).
8. Completed or satisfied conditions do not need to be included in the compliance matrix after they have been identified as completed/satisfied in at least one monthly or annual compliance report.

PRE-CONSTRUCTION MATRIX

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. It will be in the same format as the compliance matrix referenced above.

TASKS PRIOR TO START OF CONSTRUCTION

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. Project owners frequently anticipate starting project construction as soon as the project is certified. In

some cases it may be necessary for the project owner to file submittals prior to certification if the required lead-time extends beyond the date anticipated for start of construction. It is also important that the project owner understand that pre-construction activities that are initiated prior to certification are performed at the owner s own risk. Failure to allow specified lead-time may cause delays in start of construction.

Various lead times for verification submittals 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.

MONTHLY COMPLIANCE REPORT

The first Monthly Compliance Report is due the month following the Energy Commission business meeting date that the project was approved, unless the 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 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 five 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 should be submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
4. a list of conditions which have been satisfied during the reporting period, and a description or reference to the actions which 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 with, 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 conditions of certification;
9. a listing of the month s additions to the on-site compliance file; and
10. any requests to dispose of items that are required to be maintained in the project owner s compliance file.
11. a listing of complaints, notices of violation, official warnings, and citations received during the month; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

ANNUAL COMPLIANCE REPORT

After the air district has issued a Permit to Operate, 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 which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
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 should be 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 made 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, and
9. an evaluation of the on-site contingency plan for unexpected facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section].

10. a listing of complaints, notices of violation, official warnings, and citations received during the year; a description of the resolution of any complaints which have been resolved, and the status of any unresolved complaints.

CONFIDENTIAL INFORMATION

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

DEPARTMENT OF FISH AND GAME FILING FEE

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of eight hundred and fifty dollars ($850). The payment instrument shall be provided to the Commission s Project Manager at the time of project certification and shall be made payable to the California Department of Fish and Game. The Commission s Project Manager will submit the payment to the Office of Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS

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. The telephone number shall be posted at the project site and easily visible to passersby during construction and operation.
In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies of all complaint forms, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt, to the CPM. 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 on the following page.

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.)

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 which provide the flexibility to deal with the specific situation and project setting which will exist at the time of closure. LORS pertaining to facility closure are identified in the sections dealing with each technical area. Facility closure will be consistent with LORS in effect at the time of closure.

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

PLANNED CLOSURE

This planned closure occurs at the end of a project s life, 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.

UNEXPECTED TEMPORARY CLOSURE

This unplanned 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.

UNEXPECTED PERMANENT CLOSURE

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

GENERAL CONDITIONS FOR FACILITY CLOSURE

PLANNED CLOSURE

In order that a planned facility closure does not create adverse impacts, a closure process, that will provide 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 twelve

months prior to commencement of closure activities (or other period of time agreed to by the CPM). The project owner shall file 120 copies (or other number of copies agreed upon by the CPM) of a proposed facility closure plan with the Energy Commission.

The plan shall:

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site.
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;
3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

Also, 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 Commission may hold public hearings as part of its approval procedure.

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

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 or the environment, but shall not commence any other closure activities, until Commission approval of the facility closure plan is obtained.

UNEXPECTED TEMPORARY CLOSURE

In order to ensure that public health and safety and the environment are protected in the event of an unexpected 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, 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 unexpected 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 unexpected temporary closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., 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 circumstances and expected duration of the closure.

If the CPM determines that a temporary closure is likely to be permanent, or for a duration of more than twelve months, a closure plan consistent with that 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).

UNEXPECTED PERMANENT CLOSURE

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

In the event of an unexpected permanent closure, the project owner shall notify the CPM, as well as other responsible agencies, by telephone, fax, e-mail, etc., 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 that for a planned closure shall be developed and submitted to the CPM within 90 days of the permanent closure (or other period of time agreed to by the CPM).

DELEGATE AGENCIES

To the extent permitted by law, the Energy Commission may delegate authority for compliance verification and enforcement to various state and local agencies that have expertise in subject areas where specific requirements have been established as a condition of certification. If a delegate agency does not participate in this program, the Energy Commission staff will establish an alternative method of verification and enforcement. Energy Commission staff reserves the right to independently verify compliance.

In performing construction and operation monitoring of the project, the Energy Commission staff acts as, and has the authority of, the Chief Building Official (CBO). The Commission staff retains this authority when delegating to a local CBO. Delegation of authority for compliance verification includes the authority for enforcing codes, the responsibility for code interpretation where required, and the authority to use discretion as necessary, in implementing the various codes and standards.

Whenever an agency s responsibility for a particular area is transferred by law to another entity, all references to the original agency shall be interpreted to apply to the successor entity.

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 Commission Decision. The specific action and amount of any fines the 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, inadvertence, unforseeable events, and other factors the Commission may consider.

Moreover, to ensure compliance with the terms and conditions of certification and applicable laws, ordinances, regulations, and standards, delegate agencies are authorized to take any action allowed by law in accordance with their statutory authority, regulations, and administrative procedures.

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 1230 et. seq., 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 current law or regulations.

INFORMAL DISPUTE RESOLUTION PROCEDURE

The following procedure is designed to informally resolve disputes concerning 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 1230 et. seq., 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 referred to 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 of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. 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 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 agency 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 which 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

If either the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint or a request for an investigation with the Energy Commission s General Counsel. Disputes may pertain to actions or decisions made by any party including the Energy Commission s delegate agents. Requirements for complaint filings and a description of how complaints

are processed are in Title 20, California Code of Regulations, section 1230 et. seq.

The Chairman, upon receipt of a written request stating the basis of the dispute, may grant a hearing on the matter, consistent with the requirements of noticing provisions. The Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Title 20, California Code of Regulations, sections 1232 - 1236).

POST CERTIFICATION CHANGES TO THE COMMISSION DECISION: AMENDMENTS, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES

The project owner must petition the Energy Commission, pursuant to Title 20, California Code of Regulations, section 1769, to 1) delete or change a condition of certification; 2) modify the project design or operational requirements; and 3) transfer ownership or operational control of the facility.

A petition is required for **amendments** and for **insignificant project changes**. 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 Commission s Docket in accordance with Title 20, California Code of Regulations, section 1209. The criteria that determine which type of change process applies are explained below.

AMENDMENT

A proposed change will be processed as an amendment if it involves a change to the requirement or protocol (and in some cases the verification) portion of a condition of certification, an ownership or operator change, or a potential significant environmental impact.

INSIGNIFICANT PROJECT CHANGE

The proposed change will be processed as an insignificant project change if it does <u>not</u> require changing the language in a condition of certification, have a potential for significant environmental impact, and cause the project to violate laws, ordinances, regulations or standards.

VERIFICATION CHANGE

The proposed change will be processed as a verification change if it involves only the language in the verification portion of the condition of certification. This procedure can only be used to change verification requirements that are of an administrative nature, usually the timing of a required action. In the unlikely event that verification language contains technical requirements, the proposed change must be processed as an amendment.

KEY EVENT LIST

PROJECT _____ DATE ENTERED _____

DOCKET # _____ PROJECT MANAGER _____

EVENT DESCRIPTION	***DATE ASSIGNED***
Date of Certification	
Start of Construction	
Completion of Construction	
Start of Operation (1st Turbine Roll)	
Start of Rainy Season	
End of Rainy Season	
Start T/L Construction	
Complete T/L Construction	
Start Fuel Supply Line Construction	
Complete Fuel Supply Line Construction	
Start Rough Grading	
Complete Rough Grading	
Start of Water Supply Line Construction	
Completion of Water Supply Line Construction	
Start Implementation of Erosion Control Measures	
Complete Implementation of Erosion Control Measures	

V. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the Pastoria Energy Facility consists of separate analyses that examine facility design, as well as the efficiency and reliability of the proposed power plant. These analyses include the onsite power generating equipment and the project-related linear facilities (transmission line, natural gas supply pipeline, and water supply pipeline).

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 Application for Certification (AFC) describes the preliminary facility design for the project.[10] The Commission s analysis is limited, therefore, to assessing whether the power plant and linear facilities are described with sufficient detail to assure that the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The analysis also considers whether special design features will be necessary to deal with unique site conditions that could impact public health and safety, the environment, or the operational reliability of the project.

Staff proposed several Conditions of Certification, adopted by the Commission,[11] which establish a design review and construction inspection process to verify compliance with applicable design standards and special design requirements.

---

[10] Ex. 1,// 1, 3, 7, 7.3, Appendices C — H, L (Ex. 7), and R; Exs. 9, 16, 17, and 18.

[11] Conditions **GEN-1 — GEN-8**

(Ex. 35, pp. 428-429.) The project will be designed and constructed in conformance with the latest edition of the California Building Code (currently the 1998 CBC) and other applicable codes and standards in effect at the time construction actually begins. (Ex. 35, p. 423; 9/18 RT 60-61.) Condition **GEN-1** incorporates this requirement.

Staff reviewed the preliminary project design with respect to site preparation and development; major project structures, systems and equipment; mechanical systems; electrical systems; linear facilities such as the gas pipeline, water pipeline, and transmission route; and geologic hazards. (Ex. 35, pp. 423-427.)

The project will employ 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. (*Id.,* at p. 423.) 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 or facilities used for storage of hazardous or toxic materials. Condition **GEN-2** includes a list of the major structures and equipment for the project.

The power plant site and ancillary facility corridors are located in Seismic Zone 4, the highest level of potential ground shaking in California. (Ex. 1,／5.3.1.1.6 et seq.; Table 5.3-4; Ex. 7.) The 1998 CBC requires specific lateral force procedures for different types of structures to determine their seismic design. (Ex. 35, p. 424.) To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the Chief Building

Official (CBO)[12] for review and approval prior to the start of construction. (*Id.*, p. 425.)

Applicant proposes and Staff concurs that small, lightly loaded structures, not subject to vibratory loading, may be supported on shallow footings or mat foundations on properly compacted fill or undisturbed native soils, at least 12 inches below the lowest adjacent grade. (Ex. 35, p. 424.) If any portion of the foundation bears on bedrock, the entire foundation should be deepened to bear on bedrock. Large, heavily loaded structures, and those subjected to vibratory loading should be constructed on deepened foundations that bear on bedrock. These foundations shall be designed to meet the seismic requirements of the latest edition of the CBC. (*Ibid.*)

The major mechanical features of the 750 MW power plant include two power trains with three natural gas fired, F-class combustion turbine generators (CTG), each operating in combined cycle mode. (Ex. 35, p. 425.) Two CTGs will be installed in a two-on-one configuration with one steam turbine generator (STG) and one CTG will be installed in a one-on-one configuration with one STG. The heat from hot exhaust gas flows from each CTG through a heat recovery steam generator (HRSG). Each HRSG will be equipped with a selective catalytic reduction system (SCR) for emissions control in the event that XONON™ technology is unavailable. The project also includes 24 cooling tower cells arranged in two tower banks. (*Ibid.*)

Other mechanical features include water and wastewater treatment facilities; pressure vessels, piping systems and pumps, aqueous ammonia storage, handling and piping system, air compressors; fire protection systems; and heating, ventilation, air conditioning (HVAC), potable water, plumbing and sanitary sewage systems. (Ex. 35, p. 426.)

---

[12] The CBO is the Commission s duly appointed representative, who may be the County Chief Building Official, or other appointed representative.

The mechanical systems for the project are designed to the specifications of applicable LORS. Conditions **MECH**-1 through **MECH**-4 ensure that the project complies with these standards.

Major electrical features other than the transmission system include generators, power control wiring, protective relaying, grounding system, cathodic protection system and site lighting. (Ex. 1, Appendix F.) Conditions **ELEC-1** and **ELEC-2** ensure that design and construction of these electrical features will comply with applicable LORS.

Ancillary facilities include the new 230 kV switchyard at the project site, the new 1.38 mile long, double circuit, 230 kV overhead electric transmission line; the new 0.2 mile water supply pipeline; the new 11.65 mile, 16-20 inch diameter fuel gas line; and the new 0.85 mile access road. The project owner will comply will all applicable LORS in the design and construction of these facilities. (Ex. 1, 7.3.1.3 et seq.) The transmission facilities will be designed, constructed, and operated according to Conditions **TSE-1** through **TSE-3** in the **Transmission System Engineering** section of this Decision.

The evidence also addresses potential project closure. (Ex. 35, p. 429.) Condition **GEN-9**, in conjunction with the general closure provisions in the Compliance Plan (*ante*), specifies closure procedures to ensure compliance with applicable LORS.

Finally, the Conditions of Certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. These Conditions require the approval of the CBO after appropriate inspections by qualified engineers. No element of construction may proceed without approval of the CBO. (Ex. 35, p. 428.)

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility is currently in the preliminary design stage.
2. The evidence of record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards set forth in the appropriate portion of Appendix A of this Decision.
3. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety.
4. 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 facility closure.

We therefore conclude that, with the implementation of the Conditions of Certification listed below, the Pastoria Energy Facility can be designed and constructed in conformance with applicable laws.

CONDITIONS OF CERTIFICATION

GEN-1 The project owner shall design, construct and inspect the project in accordance with the 1998 California Building Code (CBC)[13] and all other applicable LORS in effect at the time initial design plans are submitted to the CBO for review and approval. The CBC in effect is that edition that has been adopted by the California Building Standards Commission and published at least 180 days previously. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification **TSE-1**, **TSE-2** and **TSE-3** in the **Transmission System Engineering** Section of this document.

---

[13] The Sections, Chapters, Appendices and Tables, unless otherwise stated, refer to the Sections, Chapters, Appendices and Tables of the 1998 California Building Code (CBC).

Protocol: In the event that the PEF is submitted to the CBO when a successor to the 1998 CBC is in effect, the 1998 CBC 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.

Verification: Within 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) after receipt of the Certificate of Occupancy, the project owner shall submit to the California Energy Commission 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 [1998 CBC, Section 109 — Certificate of Occupancy.]

GEN-2 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 description of, and a list of proposed submittal packages for design, calculations, and specifications for major structures and equipment (see a list of major structures and equipment in **Table 1: Major Equipment List**). 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 rough grading, the project owner shall submit the schedule, a Master Drawing List, and a Master Specifications List to the CBO and to the CPM. The project owner shall provide schedule updates in the Monthly Compliance Report.

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection, equivalent to the fees listed in the 1998 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. If Kern County has adjusted the CBC fees for design review, plan check and construction inspection, the project owner shall pay the adjusted fees.

Verification: The project owner shall make the required payments to the CBO at the time of submittal of the plans, design calculations, specifications, or soil reports. 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 **TSE-1, TSE-2 and TSE-3** 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.

Table 1: Major Equipment List

Equipment/System	Quantity Plant	Size/ Capacity*	Remarks
Combustion Turbine (CT) Generator	3	168 MW each	Dry Low NO_X combustion control
Steam Turbine (ST)	2	185/90 MW	Single shaft HPT, IPT and LPT (2x1 configuration and 1x1 configuration)
Generators	5		Included with CT and ST
CT Inlet Air Filter	3	3,600,000 lb/hr	
Inlet Air Cooling	3		Evaporative/Refrigeration/Fogging
Fuel Gas Filter — Separator	3	150,000 lb/hr	
Turbo expander	1	230,000 lb/hr	
Heat Recovery Steam Generator (HRSG)	3	550,000 lb/hr	HP, IP, LP with reheat
HRSG Stack	3		18 -0 dia.x213 high
Catalytica CO Emission Control	3		Achieve BACT/LAER
Catalytica NO_X Emission Control	3		Achieve BACT/LAER
Ammonia Injection Skid	3		Two blowers per HRSG-alternate
Aqueous Ammonia Storage Tank	3	20,000 gal	Double walled tanks — alternate, for NO_x control

HP/IP HRSG feedwater pumps	6	1,700 gpm	HP with interstage bleed
Make-up Water Clarifier	1	5,6000 gpm	Gravity flow
Make-up Water Storage Tank	1	2,300,000 gal	Includes firewater storage
Demineralized Water Pumps	3	170 gpm	
Equipment/System	**Quantity Plant**	**Size/ Capacity***	**Remarks**
Demineralized Water Treatment Package	1	350 gpm	
Demineralized Water Storage Tank	1	150,000 gal	
Condensate Pumps	5	1300 gpm	1 spare per condenser
Circulating Water Pumps	6	60,000 gpm/ 30,000 gpm	2x1 Configuration/1x1 Configuration
Wet Cooling Tower Banks	2	1.100mm BTU/hr / 600 mm BTU/hr	2x1 Configuration/1x1 Configuration
Fire Water Pump Skid	1	3,000 gpm	
Auxiliary Cooling Water Pumps	3	750 gpm	
Plant Air Compressors & Dryers	2	750 cfm	
Step-up Transformers	4	18/20 kV	To electrical grid
Emergency Backup Standby Generator	1	66 kW	Natural Gas Fired

***All capacities and sizes are approximate and may change during project final design.**

The RE shall:

1. Monitor construction progress to ensure compliance with LORS;
2. Ensure that construction of all the facilities 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 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 name, qualifications 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 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.

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 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 powerplant structures and equipment supports; D) a mechanical engineer; and E) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730 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 **TSE-1, TSE-2** and **TSE-3** 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, powerplant 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 engineers assigned to the project. [1998 CBC, Section 104.2, Powers and Duties of Building Official.]

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.

A: The civil engineer shall:

1. Design, or be responsible for design, stamp, and sign all plans, calculations, and specifications for proposed site work, civil works, and related facilities. 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

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

1. Review all the engineering geology reports, and prepare final soils grading report;
2. Prepare the soils engineering reports required by the 1998 CBC, Appendix Chapter 33, Section 3309.5 — Soils Engineering Report, and Section 3309.6 — Engineering Geology Report;
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33, section 3317, Grading Inspections;
4. Recommend field changes to the civil engineer and RE;
5. Review the geotechnical report, field exploration report, laboratory tests, and engineering analyses detailing the nature and extent of the site soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load; and
6. Prepare reports on foundation investigation to comply with the 1998 CBC, Chapter 18 section 1804, Foundation Investigations.

7. 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. [1998 CBC, section 104.2.4, Stop orders.]

C: 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 LORS;
4. Evaluate and recommend necessary changes in design; and
5. Prepare and sign all major building plans, specifications and calculations.

D: 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.

E: 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 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.

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 1998 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 **TSE-1, TSE-2** and **TSE-3** in the **Transmission System Engineering** Section of this document.

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; 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.

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).

Verification: At least 15 days 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 The project owner shall keep the CBO informed regarding the status of engineering and construction. If any discrepancy in design

and/or construction is discovered, the project owner shall document the discrepancy and recommend the corrective action required. 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 submit monthly construction progress reports to the CBO and CPM. The project owner shall transmit a copy of the CBO s approval or disapproval of any corrective action taken to resolve a discrepancy 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.

GEN-8 The project owner shall obtain the CBO s final approval of all completed work. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the as-built and as graded plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO s final approval. The marked up as-built drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the as-built drawings [1998 CBC, Section 108, Inspections.]

Verification: Within 15 days of the completion of any work, the project owner shall submit to the CBO, with a copy to the CPM, (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.

GEN-9 The project owner shall file a closure/decommissioning plan with Kern County and the CPM for review and approval at least 12 months (or other mutually agreed to time) prior to commencing the closure activities. If the project is abandoned before construction is completed, the project owner shall return the site to its original condition.

The closure plan shall include a discussion of the following:

1. The proposed closure/decommissioning activities for the project and all appurtenant facilities constructed as part of the project;
2. All applicable LORS, all local/regional plans, and a discussion of the conformance of the proposed decommissioning activities to the applicable LORS and local/regional plans;
3. Activities necessary to restore the site if the PEF decommissioning plan requires removal of all equipment and appurtenant facilities; and

4. Closure/decommissioning alternatives, other than complete restoration of the site.

Verification: At least 12 months prior to closure or decommissioning activities, the project owner shall file a copy of the closure/decommissioning plan with Kern County and the CPM for review and approval. Prior to the submittal of the closure plan, a meeting shall be held between the project owner and the CPM for discussing the specific contents of the plan.

CIVIL-1 Prior to the start of site grading, 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 as required by the 1998 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report and Section 3309.6, Engineering Geology Report.

Verification: At least 15 days prior to the start of site grading, the project owner shall submit the documents described above to the CBO for 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 geotechnical engineer or 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. [1998 CBC, Section 104.2.4, Stop orders.]

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

CIVIL-3 The project owner shall perform inspections in accordance with the 1998 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 shall be subject to inspection by the CBO and the CPM.

If, in the course of inspection, it is discovered that the work is not being done in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

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. 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 facilities, the project owner shall obtain the CBO s approval of the final as-graded grading plans, and final as-built plans for the erosion and sedimentation control facilities [1998 CBC, Section 109, Certificate of Occupancy.]

Verification: Within 30 days of the completion of the erosion and sediment control mitigation and drainage facilities, the project owner shall submit to the CBO the responsible civil engineer s signed statement that the installation of the facilities and all erosion control measures were completed in accordance with the final approved combined grading plans, and that the facilities are adequate for their intended purposes. The project owner shall submit a copy of this report to the CPM in the next Monthly Compliance Report.

STRUC-1 Prior to the start of any increment of construction, the project owner shall submit to the CBO for 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:

1. Major project structures;
2. Major foundations, equipment supports and anchorage;
3. Large field fabricated tanks; and
4. Turbine/generator pedestal.

In addition, the project owner shall, prior to the start of any increment of construction, get approval from the CBO of the lateral force

procedures proposed for project structures to comply with the lateral force provisions of the CBC.

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 [1998 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 at least 90 days (or a lesser number of days mutually agreed to by the project owner and the CBO), prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2, Retention of plans and Section 106.3.2, Submittal documents.]; and
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 [1998 CBC, Section 106.3.4, Architect or Engineer of Record.]

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 any increment of construction, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer s signed statement that the final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission s Decision.

If the CBO discovers non-conformance with the stated requirements, the project owner shall resubmit the corrected plans to the CBO within 20 days of receipt of the nonconforming submittal with a copy of the transmittal letter to the CPM.

The project owner shall submit to the CPM a copy of a statement from the CBO that the proposed structural plans, specifications, and calculations have

been approved and are in conformance with the requirements set forth in the applicable LORS.

STRUC-2 The project owner shall submit to the CBO the required number of sets of the following:

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 structure activities requiring special inspections shall be in accordance with the 1998 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 to the CBO, with a copy of the transmittal letter to the CPM. The NCR shall reference the condition(s) of certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

The project owner shall transmit a copy of the CBO s approval or disapproval of the corrective action to the CPM within 15 days. If disapproved, the project owner shall advise the CPM, within five days, 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 1998 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 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 1998 CBC shall, at a minimum, be designed to comply with Occupancy Category 2 of the 1998 CBC. Chapter 16, Table 16—K of the 1998 CBC requires use of the following seismic design criteria: I˚=˚1.25, I_p = 1.5 and I_w = 1.15.

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 installation of the tanks or vessels containing the above specified quantities of highly toxic or explosive substances that would be hazardous to the safety of the general public if released, the project owner shall submit to the CBO for 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 Prior to the start of any increment of piping construction, the project owner shall submit, for CBO review and approval, the proposed final design drawings, specifications and calculations for each plant piping system (exclude domestic water, refrigeration systems, and small bore piping, i.e., piping and tubing with a diameter less than two and one-half inches). The submittal shall also include the applicable QA/QC procedures. The project owner shall design and install all piping, other than domestic water, refrigeration, and small bore piping to the applicable edition of the CBC. Upon completion of construction of any piping system, the project owner shall request the CBO s inspection approval of said construction [1998 CBC, Section 106.3.2, Submittal documents, Section 108.3, Inspection Requests.]

The responsible mechanical engineer shall submit a signed and stamped statement to the CBO when:

1. The proposed final design plans, specifications and calculations conform with all of the piping requirements set forth in the Energy Commission s Decision; and

2. All of the other piping systems, except domestic water, refrigeration systems and small bore piping have been designed, fabricated and installed in accordance with all applicable ordinances, regulations, laws and industry standards, including, as applicable:

- 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); and
- Specific City/County code.

The CBO may require the project owner to employ special inspectors to report directly to the CBO to monitor shop fabrication or equipment installation [1998 CBC, Section 104.2.2, Deputies.]

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 any increment of piping construction, the project owner shall submit to the CBO for approval, with a copy of the transmittal letter to the CPM, the above listed documents for that increment of construction of piping systems, including a copy of the signed and stamped engineer s certification of conformance with the Energy Commission s Decision. The project owner shall transmit a copy of the CBO s inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

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 [1998˚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 a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for review and approval, final design plans, specifications and calculations, 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 send copies of the CBO plan check approvals to the CPM in the following Monthly Compliance Report. The project owner shall also transmit a copy of the CBO s and/or Cal-OSHA inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-3 Prior to the start of construction of any heating, ventilating, air conditioning (HVAC) or refrigeration system, the project owner shall submit to the CBO for review and approval the design plans, specifications, calculations and quality control procedures for that 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 applicable edition of the CBC. 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 [1998 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record.]

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 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 applicable edition of the CBC, with a copy of the transmittal letter to the CPM.

The project owner shall send copies of CBO comments and approvals to the CPM in the next Monthly Compliance Report. The project owner shall transmit a copy of the CBO s inspection approvals to the CPM in the Monthly Compliance Report following completion of any inspection.

MECH-4 Prior to the start of each increment of plumbing construction, the project owner shall submit for CBO s approval the final design plans, specifications, calculations, and QA/QC procedures for all plumbing systems, potable water systems, drainage systems (including sanitary drain and waste), toilet rooms, building energy conservation systems, and temperature control and ventilation systems, including water and sewer connection permits issued by the local agency. Upon completion of any increment of construction, the project owner shall request the CBO s inspection approval of said construction [1998 CBC, Section 108.3, Inspection Requests, Section 108.4, Approval Required.]

The project owner shall design, fabricate and install:

1. Plumbing, potable water, all drainage systems, and toilet rooms in accordance with Title 24, California Code of Regulations, Division 5, Part 5 and the California Plumbing Code (or other relevant section(s) of the currently adopted California Plumbing Code and Title 24, California Code of Regulations); and
2. Building energy conservation systems and temperature control and ventilation systems in accordance with Title 24, California Code of Regulations, Division 5, Chapter 2-53, Part 2.

The final plans, specifications and calculations shall clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall stamp and sign all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission s Decision.

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 construction of any of the above systems, the project owner shall submit to the CBO the final design plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable edition of the CBC, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

The project owner shall transmit a copy of the CBO s inspection approvals to the CPM in the next Monthly Compliance Report following completion of that increment of construction.

ELEC-1 For the 480 volts and higher systems, the project owner shall not begin any increment of electrical 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 [1998 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 TSE-1, TSE-2 and TSE-3 in the **Transmission System Engineering** Section of this document.

The following activities shall be reported in the Monthly Compliance Report:

- receipt or delay of major electrical equipment;
- testing or energization of major electrical equipment; and
- 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 electrical construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for electrical equipment and systems 480 volts and greater, including a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

ELEC-2 The project owner shall submit to the CBO the required number of copies of items A and B for review and approval and one copy of item C [CBC 1998, Section 106.3.2, Submittal documents.] All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification TSE-1, TSE-2 and TSE-3 in the **Transmission System Engineering** Section of this document.

A. Final plant design plans to include:

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

2. system grounding drawings;
3. general arrangement or conduit drawings; and
4. other plans as required by the CBO.

B. Final plant calculations to 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;
7. lighting energy calculations; and
8. other reasonable calculations as customarily required by the CBO.

C. 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 a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of electrical equipment installation, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations, for electrical equipment and systems 480 volts and greater enumerated above, including a copy of the signed and stamped statement from the responsible electrical engineer certifying compliance with the applicable LORS. The project owner shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

B. POWER PLANT EFFICIENCY

The California Environmental Quality Act (CEQA) requires the Commission to examine whether the project s consumption of energy will result in significant adverse environmental impacts on non-renewable energy sources and if so, whether feasible mitigation measures are available to minimize impacts through increased efficiency of design and operation. (Pub. Resources Code,/21002.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Staff reviewed whether PEF s use of natural gas would result in 1) an adverse effect on local and regional energy supplies and resources; 2) a requirement for additional energy supply capacity; 3) noncompliance with existing energy standards; or 4) the wasteful, inefficient and unnecessary consumption of fuel or energy.[14] (Ex. 35, p. 458.)

1. Potential Effects on Energy Supplies and Resources

The project will burn natural gas at a maximum rate up to 126 billion Btu per day lower heating value (LHV). (Ex. 35, p. 458.) Although this is a substantial rate of energy consumption, PEF will purchase gas from the Kern River/Mojave interstate pipeline, drawing from an extensive gas supply infrastructure with access to large gas reserves from the Rocky Mountains, the northwest, and the southwest.[15] Since these gas reserves greatly exceed project demand, PEF s use of natural gas will not cause significant impacts to energy supplies and resources. (*Id*., p. 459.)

---

[14] See, CEQA Guidelines, 14 California Code of Regulations, Section 15000 et seq., Appendix F.

[15] Applicant provided testimony of Stephanie Miller, regional vice president for natural gas transportation for Enron North America, who confirmed Staff s gas supply assessment. Ms. Miller relied on the Commission s 1999 Fuels Report as well as independent research tools employed by Enron to determine that an adequate supply of natural gas will be available to meet the

2. Depletion of Energy Supply

Natural gas will be supplied to the project via a new 11.65-mile long, 16-24 inch pipeline interconnected to the existing Kern River/Mojave 42-inch pipeline. Since the gas supply system is vast and well-established, there is no likelihood that PEF will require development of new energy sources. (Ex. 35, p. 459.)

3. Compliance with Energy Standards

No standards apply to the efficiency of PEF or other non-cogeneration projects. (Ex. 35, p. 459.) See, Public Resources Code, section 25134.

4. Alternatives to Wasteful or Inefficient Energy Consumption

Applicant considered alternative generating technologies such as oil-burning, coal-burning, solar, wind, hydroelectric, biomass, and geothermal technologies. (Ex. 1,/3.11.3.1 et seq.) Given the project objectives, location, and air pollution control requirements, Staff agreed with Applicant s conclusion that only natural gas-burning technologies are feasible. (Ex. 35, p. 461.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by selection of equipment to generate power. (Ex. 35, p. 461.) PEF is configured as a compound-train combined cycle power plant. Electricity will be generated by three gas turbines and two heat recovery steam generators that operate on heat energy recuperated from gas turbine exhaust. By recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of any combined cycle power plant is increased considerably from that of either gas turbines or

---

anticipated gas consumption increase in California and nationwide over the next 20 years. (Ex. 38, Testimony of Stephanie Miller; 9/19 RT 4-17.)

steam turbines operating alone. Staff concluded that this configuration is well suited to the large, steady loads met by a baseload plant. (Ex. 35, p. 459.)

The multiple power train configuration will also provide the option of shutting down one or more of the individual generating components while the remaining turbine(s) will continue to run at full load. Thus, the plant can generate at part load while maintaining optimal efficiency. (Ex. 35, p. 460.)

Applicant will employ F class gas turbines from General Electric, Siemens-Westinghouse, or ASEA Brown-Boveri, all of which produce highly fuel-efficient machines. The evidence indicates that Applicant also considered the alternative G-class and H-class turbines, which represent newly developed technologies. Although both the G-class and H-class turbines are slightly more efficient than the F-class turbine, their new technologies could potentially restrict PEF s operating flexibility. Given the likelihood that PEF would frequently be dispatched at less than full load, and the lack of a proven track record for the G-class and H-class turbines, Applicant s choice of the F-class machine is considered reasonable. (Ex. 35, p. 461.)

Applicant will select one of four alternative methods of gas turbine inlet air cooling to increase power output. The evidence establishes that the difference in efficiency among the four techniques is relatively insignificant and therefore, none of the alternatives would result in significant adverse impacts. (Ex. 1, / 3.11.3.4.)

According to the evidentiary record, if PEF is constructed and operated as proposed, the project would generate 750 MW (nominal) of electricity at a peak load efficiency of approximately 54.9 percent LHV (using F-class turbines) compared with the average fuel efficiency of a typical utility company baseload power plant at 35 percent LHV. (Ex. 35, p. 458.)

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility (PEF) will not create a substantial increase in demand for natural gas.

2. Available gas supplies exceed the fuel requirements of the proposed project.

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

4. The project s design, incorporating multiple power trains, will allow the power plant to generate electricity at less than full load while maintaining optimal efficiency.

5. PEF will employ F-class turbines, which are highly efficient and provide the option of operating the project at less than full load.

6. The anticipated operational efficiency of the proposed project is consistent with that of comparable power plants using similar technology and significantly more efficient than the older utility power plants.

7. PEF will not require the development of any new fuel resources.

The Commission therefore concludes that PEF will not cause any significant direct or indirect adverse impacts upon energy resources. The project will conform with all applicable laws, ordinances, regulations, and standards relating to fuel efficiency as identified in the pertinent portions of APPENDIX A of this Decision. No Conditions of Certification are required for this topic.

C. POWER PLANT RELIABILITY

The Warren-Alquist Act requires the Commission to examine the safety and reliability of the proposed power plant, including provisions for emergency operations and shutdowns. [Pub. Resources Code, ⁄ 25520(b)]. There are presently no laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Commission must determine whether the project will be designed, sited, and operated to ensure safe and reliable operation. [Cal. Code of Regs., tit. 20, ⁄ 1752(c)(2).] In this regard, the Commission considers whether the proposed project will degrade the reliability of the utility system to which it is connected. If the project exhibits reliability at least equal to that of other power plants in the system, it is presumed not likely to degrade the system.

In California s competitive electric power industry, the California Independent System Operator, (Cal-ISO) has the primary responsibility for maintaining system reliability. To provide an adequate supply of reliable power, Cal-ISO has imposed certain requirements on power plants selling ancillary services and those holding reliability must-run contracts, such as: 1) filing periodic reports on reliability; 2) reporting all outages and their causes; and 3) scheduling all planned maintenance outages with the Cal-ISO. The Commission believes that merchant power plant owners should continue to maintain the same levels of reliability that the power industry has achieved in recent years.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Staff examined the project s design criteria to determine whether it will be built in accordance with typical power industry norms for reliable electricity generation. (Ex. 35, p. 449.) According to Staff, project safety and reliability are achieved by ensuring equipment availability, plant maintainability, fuel and water availability, and adequate resistance to natural hazards. *(Id.*, p. 451.)

1. Equipment Availability

PEF will ensure equipment availability by use of quality assurance/quality control programs (QA/QC), which include inventory review, and equipment inspection and testing on a regular basis during design, procurement, construction, and operation. (Ex. 1, // 3.8.1.2.1, 3.9.2.6.1; 4.3.5.1, 4.3.5.2.) Qualified vendors of plant equipment and materials will be selected based on past performance to ensure acquisition of reliable equipment. *(Ibid.*; Ex. 35, p. 451.) Implementation of these programs will be monitored by appropriate Conditions of Certification, which are included in the **Facility Design** section of this Decision.

Staff is concerned that Applicant s proposal to use XONON™ technology to control gas turbine NO_x emissions has not demonstrated adequate reliability on a scaled-up basis compatible with the design requirements of PEF.[16] (Ex. 35, p. 451.) The evidentiary record indicates that Applicant will employ SCR and dry low-NO_x combustors if XONON™ proves unusable. (Ex. 1, // 3.4.1, 3.4.4.3.2, 3.4.11.5.) SCR and dry-low NO_x combustors are well-established reliable technologies that would mitigate Staff s concerns. (Ex. 35, p. 452.)

2. Plant Maintainability

The evidentiary record indicates that project design includes sufficient redundancy of equipment and systems for the combined cycle to ensure continued operation in the event of equipment failure. (Ex. 35, p. 452; 9/18 RT 143-144; Ex. 1, Tables 3.4-1 and 4.3-1.) The three parallel trains of gas turbine generators/HRSGs provide inherent reliability. (*Ibid.*) Failure of a non-redundant component of one power train will not cause the other trains to fail; rather, the plant will continue to generate at reduced output. This ability to continue

[16] Evidence regarding the anticipated feasibility of XONON™ technology indicates that a demonstration unit on a 1.5 MW gas turbine has been operating with a reliability factor of 98.5 percent. Applicant anticipates that XONON™ will be ready for scale-up by the time installation of project components is scheduled. (9/18 RT 146-147; Ex. 5, p. REL-1 et seq.)

operation even with equipment failure demonstrates adequate equipment redundancy to meet typical industry reliability standards. (Ex. 35, p. 452.) Project maintenance outages will be planned for periods of low electricity demand and will conform to industry standards. (*Ibid.*)

3. Fuel and Water Availability

Evidence demonstrates that there is adequate natural gas supply and pipeline capacity to deliver natural gas for project operations. (Ex. 35, p. 453; See, **Power Plant Efficiency** in this Decision.) PEF will obtain water from the California Aqueduct through the Wheeler Ridge-Maricopa Water Storage district, which supports an extensive underground storage capacity and represents a reliable supply of water for the project. (Ex. 35, p. 453; See, **Soil & Water Resources** in this Decision.)

4. Natural Hazards

Given the geological location of the project site, there is potential for high winds, flooding, and seismic shaking to threaten reliable operation. (Ex. 35, p. 453.) The project will be designed to withstand strong winds and potential flooding[17] by complying with applicable building code LORS. (Ex. 1,// 3.5.1; 4.1.1.1; 4.1.1.2.)

The project site is located in Seismic Zone 4, where several active earthquake faults are found. (Ex. 35, p. 454.) PEF will be designed and constructed to comply with the current applicable LORS for seismic design, thus representing a reliability upgrade compared with older power plants.[18] Condition of Certification

[17] Although flood insurance maps indicate that the site lies within a 100-year flood zone, Applicant presented evidence to show this is not the case. Nevertheless, Applicant will design PEF to withstand a hypothetical 100-year flood in accordance with applicable LORS. (Ex. 1,/ 3.5.8.) See, the **Geology and Paleontology** portion of this Decision.

[18] Staff expects the project, designed to current seismic standards, will perform at least as well as or better than existing plants in a seismic event. Staff noted that California s electric system has typically been reliable during seismic events. (Ex. 35, p. 454.)

STRUC-1 in the **Facility Design** portion of this Decision ensures that the project will conform with seismic design LORS. The evidence therefore establishes that none of the potential natural hazards identified herein will present significant obstacles to the project s safe and reliable operation. (*Ibid*.)

5. Availability Factors

Applicant predicts the project will have an annual availability factor of 95-98 percent. (Ex. 1, ⁄ 3.9.2.6.) Industry statistics for power plant availability are compiled by the North American Electric Reliability Council (NERC). (Ex. 35, p. 454.) NERC s statistics show an availability factor of 91.49 percent for combined cycle units of all sizes. *(Ibid*.) Although the NERC figure is lower than Applicant s proposed availability factor, Staff expects that a modern, baseload facility such as PEF will likely outperform the NERC average, especially since maintenance will occur when full plant output is not required to meet market demand. *(Ibid*.) The evidentiary record thus supports a finding that the proposed 95-98 percent availability factor is consistent with industry norms for power plant reliability. *(Ibid*.; Ex. 1, ⁄⁄ 3.9.2.1.2, 3.9.2.6.1, 4.3.1.1, and 4.3.1.4.)

Since the project is designed to conform to industry norms, Staff concluded that PEF would perform reliably in baseload duty and cause no significant impacts to electric system reliability. *(*Ex. 35, p. 455.)

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility (PEF) will ensure equipment availability by implementing quality assurance/quality control programs and by providing adequate redundancy of auxiliary equipment to prevent unplanned off-line events.

2. PEF s three parallel trains of gas turbine generators/HRSGs provide inherent reliability.

3. Planned outages for each of the turbine generators can be scheduled in sequence during times of low regional electricity demand.

4. There is adequate fuel and water availability for project operations.

5. High winds, flooding, or earthquakes do not present significant hazards to the project s safety or reliability.

6. The project s estimated 95-98 percent availability factor is consistent with industry norms for power plant reliability.

7. PEF will perform reliably in baseload duty and cause no significant impacts to electric system reliability.

The Commission, therefore, concludes that the project will not have an adverse effect on system reliability. No Conditions of Certification are required for this topic. To ensure implementation of the QA/QC programs 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 reviewed the engineering and planning design of PEF s proposed transmission facilities to ensure that they will be designed, constructed, and operated in compliance with applicable law. These transmission facilities include the power plant switchyard, the transmission outlet lines, and the point of interconnection to the power grid system.

The California Independent System Operator (Cal-ISO) works in conjunction with the Participating Transmission Owners, in this case Southern California Edison (SCE), to determine appropriate mitigation for reliability and congestion impacts associated with new generation. SCE prepared a Detailed Facilities Study (DFS) to assess the potential reliability and congestion impacts associated with the project.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Transmission Facilities

PEF will generate a nominal electrical output of 750 MW. The transmission system consists of a 230 kV switchyard and an overhead double circuit 230 kV transmission line that will interconnect with SCE s Pastoria Substation about 1.38 miles south of the site (Ex. 35, pp. 467-468.)

The overhead 230 kV outlet line to the Pastoria Substation will exit PEF s switchyard and travel south along existing SCE right-of-way. (Ex. 35; p. 468.) The overhead line will be carried on 120-foot tall steel lattice towers. (10/13 RT 24.) Conductor size for the transmission lines will be 1590 kcmil aluminum conductor with steel reinforcement (ASCR). (*Ibid.*)

The Applicant analyzed an alternative route connecting to the Pardee Substation 39 miles away. This alternative is inferior to the proposed route because of the added line length. (*Ibid.*)

The project s switchyard configuration will consist of ten 230 kV circuit breakers, arranged in a ring bus scheme using ten bays. (Ex. 35, p. 467.)

2. System Reliability

SCE s DFS evaluated whether the addition of PEF to the electrical system would cause thermal overloads, voltage violations, and/or electric system instability. (Ex. 35, p. 469.) SCE used the following reliability criteria to measure transmission system performance: the Cal-ISO Grid Planning Criteria, the Western Systems Coordinating Council (WSCC) Reliability Criteria, and the North American Electric Reliability Council (NERC) Planning Standards. (*Ibid.*)

The DFS determined that PEF could reliably interconnect to the Cal-ISO controlled grid, except under various emergency conditions which will cause overloads. These overloads will require mitigation either through the construction of a new transmission line or the implementation of a new remedial action scheme (RAS). The RAS would automatically reduce generation at the PEF under specified conditions. In its Preliminary Approval Letter, the Cal-ISO recommended the PEF participate in a fully redundant RAS and in operating procedures which mitigate overloads when the RAS fails to operate. (*Ibid.*) Condition **TSE-1(h)** requires PEF s participation in this new RAS and operating procedures to mitigate potential facility overloads and to avoid adding new downstream facilities. (Ex. 35, p. 469 - 470.)

Short-circuit analyses are conducted to assure that breaker ratings are sufficient to withstand high levels of current during a fault (such as when a line touches the ground). SCE has not completed a short-circuit analysis for the PEF. Generally when circuit breakers are not adequate, project owner must replace them. The

replacement of circuit breakers is usually a within the fence modification and does not warrant further environmental analysis. Staff expects the short-circuit analysis will show that several circuit breakers near the Pastoria Substation will need to be replaced and **TSE 1(e)** requires compliance with the recommendations of the Cal-ISO when the results of the study are available. (Ex. 35, p. 470.)

Condition **TSE-1(h)** requires PEF to provide the final approved Detailed Facilities Study, (including the additional sensitivity studies) and Interconnection Agreement to the Commission prior to construction of any transmission facilities.

3. Cumulative Impacts

There is only one proposed project (Antelope Valley) that could have significant cumulative transmission system impacts with the PEF. Several other projects have either been approved (La Paloma Generating Project) or are seeking Energy Commission Certification (Sunrise Cogeneration and Power Project, Elk Hills Power Project, and the Midway Sunset Cogeneration Company Project). These projects are geographically close to the proposed PEF, but are not electrically close. Other proposed projects in California are either located far enough away from the PEF that they do not significantly impact transmission lines affected by the PEF or are located in areas with robust transmission networks that can accommodate generation from many new power plants before significant downstream facilities are required.

The Pastoria Substation, to which PEF proposed to connect, is part of SCE s radial electric system that primarily delivers power from the Big Creek hydroelectric plants and several qualifying facilities to southern California. The Antelope Valley Project proposed an interconnection at the Antelope Valley Substation that is also part of the Big Creek radial system. According to the initial Facility Study for the PEF, if both Pastoria and Antelope Valley connect to

this radial system, significant transmission facility upgrades and replacements will be required. These facility requirements would be so costly that Staff did not expect that both projects will connect to the Big Creek Radial network. (Ex. 35, p. 470 — 471.)

Staff does expect any cumulative impacts resulting from other proposed power plants operating in southern California and PEF. The PEF would connect to the Big Creek radial system, and the power it generates functions electrically like an import into the rest of the Edison system. Except for a few radial networks, the Edison electric system is highly redundant and will be able to accommodate the generation of many new power plants without requiring downstream electric facilities. (*Ibid.*)

The California Department of Water Resources (CDWR) has expressed concerns about the effect of the PEF project on the CDWR facilities near the Pastoria Substation. The potential impacts of the PEF on CDWR facilities are being analyzed in the final Facilities Study. The short-circuit analyses is not yet complete; however, **TSE 1(b)** ensures that significant impacts to CDWR circuit breakers are mitigated by the Applicant. A second letter from CDWR requested that the impacts of the construction of PEF facilities be minimized**. TSE 1(i)** ensures that PEF coordinate construction-related service interruptions with CDWR and that the impacts of these interruptions on CDWR are minimized.

4. Closure

Procedures for planned, unexpected temporary, or permanent closure will be developed to facilitate effective coordination between the project owner, the PTO, and Cal-ISO to ensure safety and system reliability. The California Public Utilities Commission (CPUC) has promulgated rules under General Order (GO-95) that apply to project closure procedures. Condition **TSE-1(c)** requires PEF to comply with these CPUC rules. (Ex. 35, pp. 471 - 472.) Condition **GEN-9** in the **Facility Design** section requires PEF to provide a Closure Plan at least 12

months prior to commencing closure activities. The **Compliance Plan** section of this Decision contains additional provisions to ensure that project closure would be consistent with applicable law.

COMMISSION DISCUSSION

The uncontroverted evidence of record establishes that PEF s transmission facilities will be designed, constructed, and operated in conformance with applicable law. The Commission relies on Cal-ISO s determinations regarding the project s potential reliability and/or congestion impacts and has adopted Cal-ISO s finding that PEF can reliably connect to the grid.

FINDINGS AND CONCLUSIONS

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

1. Pastoria Energy Facility will interconnect with the Cal-ISO controlled grid at SCE s Pastoria Substation.
2. The project s double circuit overhead line will provide 750 MW of transfer capability.
3. The overhead lines will be constructed in conformance with CPUC General Order 95.
4. SCE performed a Detailed Facilities Study to analyze the potential reliability and congestion impacts likely to occur when PEF interconnects to the grid.
5. Cal-ISO reviewed the Detailed Facilities Study and determined that PEF can reliably interconnect to the Cal-ISO Controlled Grid.
6. The issuance of the Cal-ISO s final interconnection approval will assure conformance with NERC, WSCC and Cal-ISO reliability criteria. Condition of Certification **TSE-1(h)** provides for Energy Commission review of the Cal-ISO final interconnection approval letter and the Edison/Applicant Facility Interconnection Agreement.

The Commission therefore concludes that implementation of the measures specified in the Conditions of Certification listed below will ensure that PEF s transmission facilities are designed, constructed, and operated in compliance with all applicable laws, ordinances, regulations, and standards relating to transmission system engineering as identified in **APPENDIX A** of this Decision.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to requirements listed below. The substitution of Compliance Project Manager (CPM) approved equivalent equipment and equivalent switchyard configurations is acceptable.

a. The power plant switchyard, outlet line and termination shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95, Title 8, CCR, Articles 35, 37 and 37 of the, High Voltage Electric Safety Orders , National Electric Code (NEC), and related Industry Standards.

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

c. The PEF 230 kV switchyard shall include 10 breakers in a ring bus scheme.

d. The new transmission line will be a 230 kV double circuit line overhead terminating at the Pastoria Substation

e. Termination facilities at the interconnection shall comply with applicable Cal-ISO and SCE interconnection standards (SCE Interconnection Handbook and CPUC Rule 21).

f. 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.

g. The outlet line will use conductors similar to the 1590 kcmil ACSR conductors.

h. The applicant shall provide a Detailed Facilities Study including a description of remedial action scheme sequencing and timing and an executed Service Agreement for Interconnection Facilities for the transmission interconnection with Edison. The Detailed Facilities Study and an Interconnection Facilities Agreement shall be coordinated with the Cal-ISO.

i. The applicant shall coordinate construction outages with the California Department of Water Resources (CDWR) to insure that the impacts of PEF construction and interconnection on CDWR resources are minimized.

Verification: At least 60 days prior to start of construction of transmission facilities, the project owner shall submit for approval to the CPM:

a. Design drawings, specifications and calculations conforming with CPUC General Order 95 and related industry standards, where applicable, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.

b. For each element of the transmission facilities as identified above, the submittal package to the CPM shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on worst case conditions and a statement by the registered engineer in responsible charge (signed and sealed) that the transmission element(s) will conform with CPUC General Order 95, Title 8, CCR, Articles 35, 37 and 37 of the, High Voltage Electric Safety Orders , the NEC, Edison Interconnection Handbook, CPUC Rule 21 and related industry standards.

c. Electrical one-line diagrams signed and sealed by the registered professional electrical engineer in responsible charge, a route map, and an engineering description of equipment and the configurations covered by requirements **1(a)** through **1(i**) above. The Detailed Facilities Study and an Interconnection Facilities Agreement shall concurrently be provided. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CPM approval.

d. A signed letter from the CDWR indicating that construction and service interruptions have been coordinated and are adequate.

TSE-2 The project owner shall inform the CPM of any impending changes, which may not conform to the requirements **1(a)** through **1(i)** of **TSE-1**, and have not received CPM approval, and request approval to implement such changes. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment, transmission facilities or switchyard configurations shall not begin without prior written approval of the changes by the CPM.

Verification: At least 60 days prior to construction of transmission facilities, the project owner shall inform the CPM of any impending changes which may not conform to requirements of **TSE-1** and request approval to implement such changes.

TSE-3 The project owner shall be responsible for the inspection of the transmission facilities during and after project construction and any subsequent CPM approved changes thereto, to ensure conformance with CPUC General Order 95, Title 8, CCR, Articles 35, 37 and 37 of the, High Voltage Electric Safety Orders , the NEC, Edison Interconnection Handbook, CPUC Rule 21 and related industry standards. In case of non-conformance, the project owner shall inform the CPM 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:

a. As built engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC General Order 95, Title 8, CCR, Articles 35, 37 and 37 of the, High Voltage Electric Safety Orders , the NEC, Edison Interconnection Handbook, CPUC Rule 21 and related industry standards, and these conditions shall be concurrently provided.

b. An as built engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge.

c. A summary of inspections of the completed transmission facilities, and identification of any nonconforming work and corrective actions taken, signed and sealed by the registered engineer in responsible charge.

E. TRANSMISSION LINE SAFETY AND NUISANCE

The project transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This analysis reviews the potential impacts of the project transmission line on aviation safety, radio-frequency interference, audible noise, fire hazards, nuisance shocks, hazardous shocks, and electric and magnetic field exposure.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Description of Transmission Line

The project s 1.38 mile overhead transmission line is located parallel to SCE s existing Pastoria-Magunden transmission line and terminates at the Pastoria Substation. The transmission line route is described in the **Transmission System Engineering** section of this Decision. No residential developments or communities are proposed near the route. (Ex. 35, p. 101.)

2. Potential Impacts

a. Electric and Magnetic Field Exposure

The possibility of health effects from exposure to electric and magnetic fields (EMF) has increased public fears about living near high-voltage lines. (Ex. 35, p. 99.) The available data evaluated by the California Public Utilities Commission (CPUC) and other regulatory agencies do not definitively establish that EMF poses a significant health risk nor prove the absence of health hazards.[19] (*Ibid*.) In light of the present uncertainty regarding EMF exposure, Staff testified that most of the regulatory agencies, including the CPUC, have implemented policies to ensure that transmission lines are designed to minimize EMF without

[19] Although several states regulate EMF levels for new transmission lines, California has not specified a maximum EMF limit. (Ex. 1,/4.2.4.2.)

impacting transmission efficiency. (Ex. 35, p. 99; Ex. 36, p. 7.) Under CPUC policy, the regulated utilities have established EMF-reducing design criteria for new and upgraded electrical facilities. New transmission lines are not permitted to create EMF levels greater than that of existing transmission lines. (*Ibid*.)

Applicant s testimony confirmed that its proposed transmission line is designed according to applicable Transmission Line EMF Guidelines for the SCE area. (Ex. 1,/4.2.4.4.) Applicant calculated the relevant field strengths at the center line and at the right-of-way and found them typical for the field-reducing configuration in the transmission area. (9/18 RT 82:2-15; Ex. 38, testimony of Joe Patch.) Applicant concluded and Staff agreed that the estimated electric and magnetic forces associated with the transmission line are significantly below levels typically used as standards in states that regulate EMF exposure. (Ex. 35, p. 103.) This is consistent with existing CPUC policy.[20] (*Ibid*.) Condition **TLSN-3** requires Applicant to measure the strengths of the electric and magnetic fields along the transmission line route before and after energization.

b. Aviation Safety

There are no major airports in the project vicinity.[21] (Ex. 35, p. 102.) The Federal Aviation Administration (FAA) requires notification for any construction over 200 feet above ground level or for any construction within restricted airspace in the approach to airports. Applicant s testimony indicated that PEF s overhead transmission line would be less than 120 feet tall and would not encroach into restricted airspace. (Ex. 1,/4.2.2.) Staff, therefore, agreed with Applicant that the proposed line would not pose a significant hazard to area aviation. (Ex. 35, p. 102.)

[20] The CPUC has determined that only no-cost or low-cost EMF-reducing measures for new or upgraded transmission facilities are presently justified in any effort to reduce EMF fields beyond existing levels. (CPUC Decision No. 93-11-013.)

[21] The nearest airport in Bakersfield is about 35 miles from the site. (Ex. 35, p. 102.)

c. Interference With Radio-Frequency Communication

Interference with radio and television reception can be caused by spark gap discharges around the line that produce noise and interference. Such interference can generally be avoided by appropriate line maintenance. (Ex. 35, p. 102.) Applicant will implement a maintenance program to minimize these occurrences. (Ex. 1, ⁄ 4.2.3.) Applicant will also employ a corona-reducing design that should prevent radio interference. (*Ibid*.) Federal Communication Commission (FCC) regulations require transmission line operators to resolve incidents of radio or television interference on a case-by-case basis. Condition **TLSN-2** ensures that PEF will mitigate any interference-related complaints on a case-specific basis.

d. Audible Noise

Energized electric transmission lines can generate audible noise in a process called corona discharge, most often perceived as a buzz or a hum. (Ex 1., ⁄ 4.2.3.) Transmission line noise during fair weather will likely be inaudible. Noise levels become noticeable during humid or rainy weather when the conductors are wet. (*Ibid*.) Applicant does not expect noise from its transmission line to add significantly to existing ambient noise levels. Staff agrees with Applicant s assessment. (Ex. 35, p. 102; see the **Noise** section in this Decision.)

e. Fire Hazards

Operation of the transmission line represents a low fire risk. Fires could occur by sparks from overhead conductors coming into contact with combustible material. Applicant will comply with CPUC General Order (GO) 95 that requires maintaining the clearance necessary to prevent fires caused by contact with combustible material. (Ex. 35, p. 103.) Condition **TLSN-4** ensures that the transmission line right-of-way will be kept free of combustible material.

f. Nuisance and Hazardous Shocks

Nuisance or hazardous shocks can result from direct or indirect contact with an energized line or metal objects located near the line. (Ex. 1, / 4.2.4.1.) Applicant will employ mitigation measures for hazardous and nuisance shocks that include: 1) grounding of metal objects on or near the right-of-way, and 2) providing sufficient clearances at roadways and parking lots to prevent vehicles from conducting currents from the energized line. Condition **TLSN-1** ensures compliance with applicable LORS that require implementation of the mitigation measures proposed by Applicant.

COMMISSION DISCUSSION

The evidentiary record establishes that PEF s transmission line design will conform with all established requirements to ensure aviation safety, prevent radio and television interference, limit audible noise, eliminate fire hazards, and prevent hazardous and nuisance shocks. Since adverse health effects from electric and magnetic fields (EMF) have not been established or ruled out, the public health significance of project-related field exposure cannot be characterized with certainty. The estimated exposures from the project transmission line are significantly below field levels associated with lines of the same voltage, current-carrying capacity, and field levels established by states with regulatory limits for such fields. There is no evidence that the line will pose a danger from EMF exposure.

FINDINGS AND CONCLUSIONS

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

1. The project transmission line, which will connect to SCE s transmission system, is a 1.38 mile overhead double circuit 230kV line that parallels an existing SCE transmission line and terminates at the Pastoria Substation.

2. The possibility of health effects from exposure to electric and magnetic fields (EMF) has increased public fears about living near high-voltage lines.

3. Neither the California Public Utilities Commission nor any other regulatory agency in California has established limits on pubic exposure to electric and magnetic fields from power lines.

4. PEF s transmission line will be designed in accordance with the electric and magnetic field reducing guidelines applicable to SCE s transmission service area.

5. The estimated EMF exposures from the transmission line are below field levels associated with similar lines in the SCE area, and significantly below field levels established by states with regulatory limits for such fields.

6. The Conditions of Certification reasonably ensure that the transmission line will not have significant adverse environmental impacts on public health and safety nor cause impacts in the areas of aviation safety, radio/tv communication interference, audible noise, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

The Commission, therefore, concludes 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 as identified in the pertinent portions of **APPENDIX A** of this Decision.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of CPUC General Orders (GO)-95, GO-128, GO-52 and Title 8, California Code of Regulations, Section 2700, et seq.

Verification: At least 30 days before the start of transmission line construction, the project owner shall submit to the Commission s Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the transmission line will be constructed according to the requirements of GO-95, GO-128 and Title 8, California Code of Regulations section 2700 et seq.

TLSN-2 The project owner shall make every reasonable effort to identify and correct, on a case-specific basis, all complaints of interference with radio or television signals from operation of the line and related facilities. In addition to any transmission repairs, the relevant corrective actions should include, but shall not be limited to, adjusting or modifying receivers, adjusting or repairing, replacing or adding antennas, antenna signal amplifiers, filters, or lead-in cables.

The project owner shall maintain written records for a period of 5 years of all complaints of radio or television interference attributable to 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 and included in the Annual Compliance Report to the CPM.

TLSN-3 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields from the line before and after they are energized. Measurements should be made at representative points along the edge of the right-of-way for which field strength estimates were provided.

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

TLSN-4 The project owner shall ensure that the transmission line right-of-way is kept free of combustible material as required under the provisions

of Public Resources Code Section 4292; Title 14 of the California Code of Regulations, Section 1250 et seq.; and GO-95.

Verification: The project owner shall provide a summary of inspection results and any fire prevention activities along the right-of-way in the annual compliance report.

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

Protocol: 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 line is energized, the project owner shall transmit to the CPM a letter confirming compliance with this Condition.

VI. PUBLIC HEALTH AND SAFETY ASSESSMENT

Operation of the Pastoria Energy Facility will create combustion products and utilize certain hazardous materials that could expose the general public and workers at the facility to potential health effects. 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. The Commission must find that the project complies with all applicable laws, ordinances, regulations, and standards related to air quality. National ambient air quality standards (NAAQS) have been established for six air contaminants identified as criteria air pollutants. These include sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), and particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$) and their precursors: nitrogen oxides (NO_x), volatile organic compounds (VOC), and SO_x. California s ambient air quality standards (CAAQS) for these pollutants are generally more stringent than the national standards. (Ex. 1,/5.2.1.2.1.)

The federal Clean Air Act[22] requires new major stationary sources of air pollution to comply with federal New Source Review (NSR) requirements in order to obtain permits to operate. The U.S. Environmental Protection Agency (USEPA), which administers the Clean Air Act, has designated all areas of the United States as attainment (air quality better than the NAAQS) or non-attainment (worse than the NAAQS) for criteria air pollutants. (Ex. 1,/5.2.1.2.1.)

---

[22] Title 42, United States Code section 7401 et seq.

Air Quality Table 1, below, compares state and federal ambient air quality standards.

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O3)	1 Hour	0.12 ppm (235 $\mu g/m^3$)	0.09 ppm (180 $\mu g/m^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO_2)	Annual Average	0.053 ppm (100 $\mu g/m^3$)	---
	1 Hour	---	0.25 ppm (470 $\mu g/m^3$)
Sulfur Dioxide (SO_2)	Annual Average	80 $\mu g/m^3$ (0.03 ppm)	---
	24 Hour	365 $\mu g/m^3$ (0.14 ppm)	0.04 ppm (105 $\mu g/m^3$)
	3 Hour	1300 $\mu g/m^3$ (0.5 ppm)	---
	1 Hour	---	0.25 ppm (655 $\mu g/m^3$)
Respirable Particulate Matter (PM10)	Annual Geometric Mean	---	30 $\mu g/m^3$
	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	Annual Arithmetic Mean	50 $\mu g/m^3$	---
Sulfates (SO_4)	24 Hour	---	25 $\mu g/m^3$
Lead	30 Day Average	---	1.5 $\mu g/m^3$
	Calendar Quarter	1.5 $\mu g/m^3$	---
Hydrogen Sulfide (H_2S)	1 Hour	---	0.03 ppm (42$\mu g/m^3$)
Vinyl Chloride (chloroethene)	24 Hour	---	0.010 ppm (26 $\mu g/m^3$)
Visibility Reducing Particulates	1 Observation	---	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: Ex. 1, p. 27.

The project site is located within the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or Air District), which is designated non-attainment for both the state and federal ozone and PM_{10} standards and attainment for all other criteria pollutants. Since NO_2 and SO_2 are precursors, they are essentially treated as non-attainment pollutants under state and local regulations. At the same time, both are officially attainment pollutants and subject to PSD requirements under federal regulations. (Ex. 1,/5.2.12.1.) PSD review is also required for CO emissions. (*Id*., /5.2.1.2.4.)

Ozone Violations. Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants. Nitrogen oxides (NO_x) and hydrocarbons (Volatile Organic Compounds [VOCs]) interact in the presence of sunlight to form ozone. Data provided by the Air District indicate that ozone violations occur primarily during the months of March through October. (Ex. 35, pp. 27-29.)

The San Joaquin Valley Air Basin contributes measurably to ambient ozone levels in other districts, and other districts contribute to San Joaquin Valley s ozone problems. This widespread contribution from one geographic area to another demonstrates the regional nature of the ozone problem and ozone formation.[23] (Ex. 35, p. 28.) The Air District s Permit Manager, Thomas Goff, testified that the district has focused on ozone precursor control to alleviate the severe ozone ambient air quality problem in the San Joaquin Valley. (9/19 RT 140.)

Ambient PM_{10}. The project area also experiences a number of violations of the state 24-hour PM_{10} standard on an annual basis, although violations of the federal 24-hour standard occur only occasionally. Violations of the state 24-hour standard occur

[23] The California Air Resources Board (CARB) has found that sources within the San Joaquin Valley Air Basin contribute to ozone levels in Mountain County districts to the northeast, the South Central Air Basin to the south, the Mojave Desert to the east, the Sacramento area to the north, the Great Basin Valleys to the east, and the North Central Coast Air Basin to the west. Conversely, emissions

throughout the year, usually in the period of September through December. (Ex. 35, p. 28.)

PM_{10} can be emitted directly or it can be formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Under certain meteorological conditions, gaseous emissions of NO_x, SO_x and VOC from turbines, and ammonia from NO_x control equipment can form particulate matter such as nitrates (NO_3), sulfates (SO_4), and organics. These pollutants are known as secondary particulates because they are not directly emitted but are formed through complex chemical reactions in the atmosphere. NO_x emissions contribute significantly to the formation of particulate nitrates in the region. Ammonia nitrate is the largest contributor to PM_{10} during the winter months when ambient PM_{10} levels are typically elevated.

1. Potential Impacts

The USEPA, the Air District, and CARB worked together with the Applicant and Commission staff to determine whether project emissions of criteria pollutants would cause significant air quality impacts and to identify appropriate mitigation measures that would reduce potential impacts to levels of insignificance. (Ex. 1, pp. 5.2-5, 5.2-9; 9/19 RT 123, 160.) The Air District s Final Determination of Compliance (FDOC) concludes that the project will comply with all applicable air quality requirements and imposes certain conditions necessary to ensure compliance. (Ex. 29) Pursuant to Commission regulations, the conditions contained in the FDOC are incorporated into this Decision. (Cal. Code of Regs., tit. 20, // 1744.5, 1752.3.) See, Conditions of Certification **AQ-1** through **AQ-86**.

The Commission not only reviews compliance with Air District rules but also evaluates potential air quality impacts according to CEQA requirements. The CEQA

---

from districts such as the Bay Area Air Quality Management District and the Sacramento Air Quality Management District contribute to San Joaquin Valley s ozone problems. (Ex. 35, p. 28.)

Guidelines provide a set of significance criteria to determine whether a project will violate or contribute to an existing air quality violation. (Cal. Code of Regs., tit. 14, Appendix G.) Staff found that PEF would not violate any local, state, or federal air quality standards nor contribute to significant cumulative impacts. The following discussion provides an overview of the analyses that support the conclusions reached by the Air District and Staff.

Methodology. Applicant used EPA-approved air dispersion modeling to calculate the worst case turbine configuration that would result in the highest emission impacts. These results were included in a more refined modeling analysis using meteorological data provided by the Air District that report ambient pollutant concentrations from air monitoring stations at Bakersfield California Street, Bakersfield-Golden, and Arvin. (Ex. 1, p. 5.2-9; Ex. 35, p. 36.) These calculations describe project emissions prior to installation of control technology.

Construction. The primary emission sources during construction will be diesel exhaust from heavy equipment and fugitive dust from disturbed areas at the site. (Ex. 1, p. 5.2-24.) Applicant s modeling results indicate that maximum concentrations of construction-related emissions (PM_{10}, CO, and NO_x) will occur at the property boundary. Under worst-case conditions these emissions would cause violations of the one-hour NO_2 standard and the 24-hour and annual PM_{10} standards. However, these are temporary impacts that will not occur simultaneously with emissions associated with operation. (Ex. 1, / 5.2.3.1.) Although the Air District does not typically regulate temporary construction impacts, Staff proposed mitigation measures including fugitive dust control and installation of soot filters. These measures are included in Conditions **AQ-C1** through **AQ-C3**.

Commissioning. Initial commissioning operations of the power plant starts with the first firing of fuel in the gas turbines and HRSGs to test equipment and emission control systems. During this period, which lasts a few months, the project will operate without emission control. Although other Air Districts such as BAAQMD

have regulations that limit emissions during commissioning, the SJVUAPCD does not regulate emissions during this initial testing period. Commissioning ends with the start of commercial operation, which requires a Permit to Operate from the Air District. (Ex. 35, p. 34.)

Commercial Operation. Applicant s modeling results showed that pollutant concentrations during operation would be highest in the terrain south of the site. Although the facility s emissions would not violate state or federal ambient air quality standards, the PM_{10} impact, when added to existing background levels, will further violate the 24-hour state standard. The project s NO_2 and VOC emissions also contribute to violations of the state and federal ozone standard. A summary of the modeling results is shown in the following table, which is replicated from Staff s **Air Quality Table 9**. (Ex. 35, p. 38.)

AIR QUALITY Table 9
ISC Modeling Results (Without Mitigation)

Pollutant	Averaging Time	Facility Maximum Impact ($\mu g/m^3$)	Maximum Background ($\mu g/m^3$)	Maximum Total Impacts ($\mu g/m^3$)	State Limiting Standard ($\mu g/m^3$)	Federal Limiting Standard ($\mu g/m^3$)	Percent of Standard (%)
NO_2	1-hour	35.7	207	242.7	470		51.6
	Annual	0.3	55	55.3	-	100	55.3
CO	1-hour	309.9	10307	10617	23000	40000	46
	8-hour	40	8818	8858	10000	10000	88.58
PM_{10}	24-hour	2.56	153	155.56	50	150	311
	Annual	0.42	23	23.42	30	-	78
SO_2	1-hour	2.43	157	159.43	650	-	24.5
	24-hour	0.51	29	29.51	109	365	27
	Annual	0.09	5	5.09	-	80	6.3
Source: Ex. 35, p. 38.							

2. Mitigation

Pursuant to USEPA regulations, Best Available Control Technology (BACT) emission limits are required for facilities that emit attainment pollutants. The Air District defines BACT as the most stringent emission limit or control technology that has been achieved in practice[24]. (Ex. 1, / 5.2.2.) In this case, the District has limited NO_x emissions during project operation to 2.5 ppmvd (at 15% O_2) with a rolling average under steady state conditions. (*Id*., / 5.2.2.4.3; Ex. 29; 9/19 RT 141-142.) Typically, power plants employ Selective Catalytic Reduction (SCR) technology, which uses ammonia (NH_3) for NO_x reduction to achieve BACT. Newer technologies such as SCONOX™ and XONON™ can reduce NO_x and CO emissions without the use of ammonia or oxidation catalyst. (Ex. 35, p. 39.) The USEPA currently requires consideration of these alternatives in the BACT analysis. (*Ibid*.)

Applicant investigated SCONOX™ technology, a post-combustion control system that has not yet been demonstrated on large turbines.[25] (Ex. 1, / 5.2.2.4.2.) In the analysis, Applicant identified several mechanical concerns about the viability of this technology and did not pursue it further. (*Ibid*.)

---

[24] For facilities that emit non-attainment pollutants, USEPA requires the Lowest Achievable Emission Rate (LAER), which is even more stringent than federal BACT. In California, however, state BACT is equivalent to federal LAER limits. (Ex. 1, / 5.2.2.)

[25] SCONOX™ is produced by Goal Line Environmental Technologies, which developed a pilot system that began commercial operation in 1996 on a 32 MW generator at Sunlaw s Federal Plant in Vernon, CA. (Ex. 1, / 5.2.2.4.2.)

Applicant believes that Catalytica s new XONON™ technology is a more feasible alternative. Although XONON™ has not been demonstrated on large turbines, it is operating on smaller engines under combustor conditions that are representative of larger turbines.[26] (Ex. 1, ⁄ 5.2.2.4.1.) The XONON™ system improves the combustion process by lowering peak combustion temperature and preventing the formation of NO_x. It also avoids the increases in CO and UHC associated with other control technologies and results in low levels of NO_x, CO, and UHC emissions in the turbine exhaust. (*Ibid*.) If feasible at the time of project start-up, the project owner will install XONON™ technology. (*Ibid*.)

In the event that XONON™ technology is not available, Applicant proposes the industry standard SCR, which chemically reduces NO_x by injecting ammonia (NH_3) over a catalyst in the presence of oxygen. If the temperature is too low, NH_3 emissions will increase, resulting in ammonia slip to the environment. The Air District established a limit of 10 ppm ammonia slip for the project, the same limit imposed on the recently certified La Paloma project. (Ex. 35, p. 40.) Staff initially challenged this limit as too high and proposed reducing it to 5 ppm. However, the USEPA and CARB agreed with the District s 10 ppm limit as a worst case scenario since similar projects now in operation typically emit about 1 to 3 ppm under normal conditions. (9/19 RT 124-127; Ex. 57.)

Intervenor Kern-Kaweah Sierra Club was concerned about adding ammonia to the already ammonia rich environment in the project vicinity. Mr. Goff from the Air District testified that ammonia reduces NO_x on a one-to-one basis in the SCR process. Since limiting NO_x emissions is the goal, enough ammonia must be

---

[26] The first commercial version of the XONON™ combustion system for the Kawasaki M1A-13A GT (1.55 MW) is presently operating in a GT at Silicon Valley Power in Santa Clara, CA. The combustion systems have demonstrated NOx emission levels of less than 2.5 ppm NOx, less than 6 ppm CO, and less than 2 ppm UHC. The target for the GE Frame 7FA XONON™ combustion system is to match or improve on emission levels achieved by conventional control technology. (Ex. 1, ⁄ 5.2.2.4.1.)

injected to achieve the 2.5 ppm NO_x limitation. The health risk assessment conducted by Applicant established that no potential risk to public health would occur as a result of ammonia slip.[27] (9/19 RT 139-145.) Moreover, the insertion of ammonia into the ammonia-rich atmosphere would not result in the creation of additional PM_{10} because the ambient conditions are NO_x limited. (9/19 RT 129, 132-133.)

Applicant will install an oxidation catalyst and low dry NO_x combustors with the SCR system to control CO and VOC emissions. CO emissions will be limited to 6 ppmvd (at 15% oxygen) on a three-hour average. VOCs will be limited to 2 ppmvd on a 24-hour basis. (Ex. 1, / 5.2.2.5 et seq.) Cooling tower PM_{10} emissions will be controlled by achieving 0.0005% drift eliminator efficiency. (Ex. 35, p. 41.)

Emission reduction credits (ERCs or offsets) are created when existing permitted emission sources cease or reduce their operations below permitted levels. The ERCs are approved and banked by the Air District. ERCs are required for NO_x, PM_{10}, SO_x, and VOC to ensure that the project will not interfere with the District s overall attainment strategy. (Ex. 35, p. 41.) Applicant will use NO_x ERCs to offset most of its PM_{10} liability. Since there are few PM_{10} offsets available, the District allows interpollutant trading at a ratio of 2.72 pound of NO_x for 1 pound of PM_{10}. Applicant has secured all the required offsets to fully mitigate this project. (Ex. 35, p. 42.) A summary of the Applicant s ERCs is shown below.

Using the U.S. Forestry Service Guidance for Class I Wilderness Areas, Applicant found that the maximum modeled airborne concentrations of NO_2 and SO_2 from all combustion sources at PEF would result in potential gaseous concentrations and total nitrogen and sulfur depositions values well below levels of concern for California plants and soils. (Ex. 1,/5.2.3.2.12.)

---

[27] The Discussion of the health risk assessment is found in the Public Health section of this Decision.

PASTORIA ENERGY FACILITY
EMISSION REDUCTION OFFSET CREDIT SUMMARY
(PEF ANNUAL REQUIREMENTS INCLUDES DISTANCE RATION OF 1.5:1)

Criteria Pollutant	Pre Transfer Certificate Numbers	Post Transfer Certificate numbers	Qtr 1	Qtr 2	Qtr 3	Qtr 4	Total LBS per year	Total PEF Emission Offset in TPY	PEF Total Emission Offset Requirement w/distance ratio (TPY)	PEF Potentia to Emit per application
)x	S-0205-2	S-1340-2	45,68	47,92	46,19	44,81	184,61	92.31		
	S-0262-2	S-1341-2	4,319	5,348	5,007	4,447	19,12	9.56		
	S-0263-2	S-1342-2	3,233	0	3,511	5,006	11,74	5.87		
	S-0893-2	S-1343-2	1,847	2,417	1,590	2,044	7,898	3.95		
	C-339-2	C-363-2	41,089	41,546	42,00	42,00	166,64	83.32		
	S-0848-2		27,815	18,096	11,58	21,075	78,57	39.29		
	S-0864-2		3,986	9,681	19,140	9,076	41,88	20.94		
	S-0899-2		10,354	8,381	11,018	11,467	41,22	20.61		
	S-0913-2		3,384	2,194	2,118	3,141	10,83	5.42		
	S-1026-2		1,696	3,526	1,536	1,221	7,979	3.99		
	S-1330-2		9,477	15,464	12,57	11,993	49,51	24.76		
Total			152,881.	154,579.	156,279.	156,279.	620,020.	310.01	308.25	205.50
)x for pm10										
)x	S-0825-2		459,120.	464,220.	469,320.	469,320.	1,861,980	930.99		
72 to 1			168,794.	170,669.	172,544.	172,544.	684,551.	342.28		
Total			168,794.	170,669.	172,544.	172,544.	684,551.	342.28	620.16	228.00
)C	S-0816-1	S-1334-1	93,706.	94,728.	95,773.	95,793.	380,000.	190.00		
Total			93,706.	94,728.	95,773.	95.793.	380,000.	190.00	181.95	121.30
)x	S-259-5	S-1344-5	25,521.	30,054.	14,242.	12,127.	81,944.	40.97		
	S-257-5	S-1338-5	23,794.	19,809.	27,463.	38,284.	109,350.	54.60		
	S-256-5	S-1336-5	-	-	8,706.0	-	8,706.0	4.35		
Total			49,315.	49,863.	50,411.	50,411.	200,000.	100.00	63.45	42.30

) Includes interpollutant and distance ratio of 2.72 to 1. Source: Ex. 425, p.

There is no evidence of potential cumulative impacts because there are no foreseeable projects within a 6-mile radius of the site that are eligible for modeling under Staff s modeling protocol. (Ex. 35, p. 39.)

FINDINGS AND CONCLUSIONS

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

1. National ambient air quality standards (NAAQS) and California ambient air quality standards (CAAQS) have been established for six air contaminants identified as criteria air pollutants, including sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), and particulate matter less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$) and their precursors: nitrogen oxides (NO_x), volatile organic compounds (VOC), and SO_x.

2. The San Joaquin Valley Unified Air Pollution Control District (Air District) has jurisdiction over the area where the project site is located.

3. The Air District is a non-attainment area for both the state and federal ozone and PM_{10} standards and attainment for all other criteria pollutants.

4. Construction and operation of the project will result in emissions of criteria pollutants and their precursors.

5. Applicant will employ the best available control technology (BACT) to limit pollutant emissions by installing either XONON™ or SCR technology.

6. Project NO_x emissions are limited to 2.5 parts per million (ppm) corrected at 15 percent oxygen average over one hour.

7. Project ammonia slip emissions resulting from use of SCR are limited 10 ppm.

8. No adverse public health effects will result from the 10 ppm ammonia slip maximum limit.

9. Applicant has secured all the required offsets to fully mitigate the project.

10. Project emissions will not result in cumulative impacts to air quality in the project vicinity.

11. Project emissions are well below levels of concern for California plants and soils in Class I Wilderness Areas.

12. Implementation of the Conditions of Certification, below, ensures that PEF will not result in any significant adverse impacts to air quality.

The Commission, therefore, concludes that with implementation of the Conditions of Certification, below, and the mitigation measures described in the evidentiary record, the Pastoria Energy Facility will conform with all applicable laws, ordinances, regulations, and standards relating to air quality as set forth in the pertinent portions of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

AQ-C1 Prior to commencement of construction (defined as breaking ground at the project site) the project owner shall prepare a Construction Fugitive Dust Mitigation Plan that will specifically identify fugitive dust mitigation measures that will be employed for the construction of the PEF project and related facilities.

a. The Construction Fugitive Dust Mitigation Plan shall specifically identify measures to limit fugitive dust emissions from construction of the project site, the raw water pipeline, pump station and tank sites. Measures that should be addressed include:

- the identification of the employee parking area(s) and surface of the parking area(s);
- the frequency of watering of unpaved roads and disturbed areas;
- the application of chemical dust suppressants;
- the stabilization of storage isles and disturbed areas;
- the use of gravel in high traffic areas;
- the use of paved access aprons;
- the use of posted speed limit signs;
- the use of wheel washing areas prior to large trucks leaving the project site; and
- the methods that will be used to clean tracked-out mud and dirt from the project site onto public roads.

Verification: At least 60 days prior to the start of construction, which is defined as breaking ground at the project site, the project owner shall provide the CPM with a copy of the Construction Fugitive Dust Mitigation Plan for approval.

AQ-C2 The project owner shall ensure that the successful general contractor provide documentation to the project owner that demonstrates the contractor s heavy earthmoving equipment, that includes bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer s specifications. During construction, the project owner shall compile maintenance records that continue to demonstrate that the equipment identified above are properly maintained and that the engines are tuned to the manufacturer s specifications.

Verification: The project owner shall submit to the CPM, via the Monthly Compliance Report, documentation, which demonstrates that the contractor s heavy earthmoving equipment is properly maintained and the engines are tuned to the manufacturer s specifications. The project owner shall maintain all records on the site for six months following the start of commercial operation.

AQ-C3 The project owner shall ensure that all heavy earthmoving equipment including, but not limited to, bulldozers, backhoes, compactors, loaders, motor graders and trenchers, and cranes, dump trucks and other heavy duty construction related trucks, have been properly maintained and the engines tuned to the engine manufacturer s specifications. The project owner shall also install oxidizing soot filters on all suitable construction equipment used either on the power plant construction site or associated linear construction sites. Suitability is to be determined by an independent California Licensed Mechanical Engineer who will stamp and submit for approval an initial and all subsequent Suitability Reports as necessary containing at a minimum the following:

Initial Suitability Report:

- The initial suitability report shall be submitted to the CPM for approval 60 days prior to breaking ground on the project site.
- A list of all fuel burning, construction related equipment used,

- a determination of the suitability of each piece of equipment to work appropriately with an oxidizing soot filter,
- if a piece of equipment is determined to be suitable, a statement by the independent California Licensed Mechanical Engineer that the oxidizing soot filter has been installed and is functioning properly, and
- if a piece of equipment is determined to be unsuitable, an explanation by the independent California Licensed Mechanical Engineer as to the cause of this determination.

Subsequent Suitability Reports:

- If a piece of construction related equipment is subsequently determined to be unsuitable for an oxidizing soot filter after such installation has occurred, the filter may be removed immediately. However notification must be sent to the CPM for approval containing an explanation for the change in suitability within 10 days.
- Changes in suitability are restricted to three explanations which must be identified in any subsequent suitability report.
- The oxidizing soot filter is reducing normal availability of the construction equipment due to increased downtime, and/or power output due to increased back pressure by 20% or more.
- The oxidizing soot filter is causing or reasonably expected to cause significant damage to the construction equipment engine.
- The oxidizing soot filter is causing or reasonably expected to cause a significant risk to nearby workers or the public.

Verification: The project owner shall submit to the CPM, via the Monthly Compliance Report, documentation, which demonstrates that the contractor s heavy earthmoving equipment is properly maintained and the engines are tuned to the manufacturer s specifications. The project owner shall maintain all records on the site for six months following the start of commercial operation. The project owner will submit to the CPM for approval, the initial suitability report stamped by an independent California Licensed Mechanical Engineer, 60 days prior to breaking ground on the project site. The project owner will submit to the CPM for approval, subsequent suitability reports as required, stamped by an independent California Licensed Mechanical Engineer no later than 10 working day following a change in the suitability status of any construction equipment.

The following conditions are from San Joaquin Valley Air Pollution Control District S-3636-1-0, 2-0 and 3-0:

S-3636-1-0 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA 501F NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION OR XONON CATALYTIC COMBUSTOR TECHNOLOGY, WITH HRSG #1 AND A 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2

AQ-1 No air contaminant shall be released into the atmosphere that causes a public nuisance. [District Rule 4102]

Verification: The project owner shall make the site available for inspection by representatives of the District, California Air Resources Board (CARB) and the Commission.

AQ-2 The project owner shall submit design details of continuous emissions monitoring system and XONON catalytic combustor system or selective catalytic reduction system and oxidation catalyst to the District at least 90 days prior onsite delivery. [District Rule 2201]

Verification: The project owner shall provide copies of the drawings of the catalyst system chosen and the continuous emission monitor design detail to the CPM and the District at least 30 days prior to the construction of permanent foundations.

AQ-3 The project owner may replace XONON catalytic combustors with selective catalytic reduction system and oxidation catalyst within two years after first operation without receiving separate approval from the District subject to all conditions and emissions limits set forth in this approval. [District Rule 2201]

Verification: The project owner shall provide copies of the drawings of the catalyst system chosen to the CPM and the District at least 30 days prior to the construction of permanent foundations.

AQ-4 Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201]

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

AQ-5 Combustion turbine generator (CTG) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201]

Verification: The information above shall be included in the quarterly reports of Condition **AQ-39.**

AQ-6 CTG exhaust shall be equipped with continuously recording emissions monitor (CEM) for NOx, CO, and O2. If SCR NOx control system is used, CTG shall be equipped with an additional CEM for NOx ahead of the SCR unit or, alternatively, a continuously recording ammonia monitor. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F, and 40 CFR Part 75, and shall be capable of monitoring emissions during startups and shutdowns as well as normal operating conditions. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 15, 19 & 20. [District Rule 2201]

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

AQ-7 Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201]

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

AQ-8 Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081]

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

AQ-9 Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NO_x and CO emission limits. [District Rule 2201]

Verification: The project owner shall make the site available for inspection by representatives of the District, California Air Resources Board (CARB) and the Commission.

AQ-10 The project owner shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201]

Verification: The project owner shall record the exhaust gas and selective catalytic reduction temperatures in the daily logs.

AQ-11 CTG shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-38.**

AQ-12 Startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 17. Shutdown is defined as the period beginning with initiation of turbine shutdown sequence and ending with cessation of firing of the gas turbine engine. Duration of startup and shutdown shall not exceed three hours and one hour, respectively, per occurrence. [District Rule 2201 and 4001]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-13 Only one of CTGs S-3636-1, 2 or 3 shall be in startup at any one time. [District Rule 2201]

Verification: The project owner shall keep records of the turbine start-up sequence and make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-14 Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F¡. The project owner shall monitor and record catalyst temperature during periods of startup. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-15 During startup or shutdown CGT exhaust emissions shall not exceed any of the following: NOx (as NO2) - 130 lb., VOC — 273 lb. or CO -1235 lb., in any one hour. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-16 By two hours after turbine initial firing, CTG exhaust emissions shall not exceed any of the following: NOx (as NO2) - 12.2 ppmv @ 15% O2 and CO - 25 ppmv @ 15% O2. [District Rule 4703]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-17 Emission rates from the CTG, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 17.03 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 3.8 lb/hr and 2.0 ppmvd @ 15% O2, CO - 24.92 lb/hr and 6 ppmvd @ 15% O2, ammonia - 10 ppmvd @15%O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4001, and 4703]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-18 Emission rates from the CTG shall not exceed either of the following: PM_{10} - 18.47 lb/hr and SOx (as SO_2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201 and 4001]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-19 On any day when a startup or shutdown occurs, emission rates from CTG shall not exceed any of the following: PM10: 443 lb/day, SOx (as SO2): 84 lb/day, NOx (as NO2): 555 lb/day, VOC: 417 lb/day, and CO: 2113 lb/day. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-20 Combined annual emissions from CTGs S-3636-1, 2 and 3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 447,660 lb/year , SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 410,859 **AQ-6** /year, VOC - 244,275 lb/year, and CO - 1,220,166 lb/year. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-21 Combined annual emissions of all hazardous air pollutants (HAPS) from CTGs S-3636-1, 2 and 3, calculated on a twelve consecutive

month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from CTGs S-3636-1, 2 and 3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. HAPS are herein defined as stack emissions of formaldehyde and polycyclic aromatic hydrocarbons. [District Rule 4002]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-22 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. The twenty-four-hour average will be calculated starting and ending at twelve-midnight. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-23 Daily emissions shall 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 shall be complied from the twelve most recent calendar months. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-24 Prior to the commencement of construction, the project owner shall surrender offsets for S-3636-1-0, 2-0, 3-0, 4-0 and 5-0, for all calendar quarters in the following amounts, at the offset ratio specified in Rule 2201 (6/15/95 version) Table 1, PM10 - Q1: 112,738 lb, Q2: 113,991 lb, Q3: 115,244 lb, and Q4: 115,244 lb; SOx (as SO2) - Q1: 20,905 lb, Q2: 21,137 lb, Q3: 21,369 lb, and Q4: 21,369 lb; NOx (as NO2) - Q1: 96,376 lb, Q2: 97,447 lb, Q3: 98,518 lb, and Q4: 98,518 lb; and VOC - Q1: 55,301 lb, Q2: 55,915 lb, Q3: 56,530 lb, and Q4: 56,529 lb. [District Rule 2201]

Verification: The project owner shall submit copies of ERC surrendered to the SJVUAPCD in the totals shown to the CPM prior to no later than 30 days prior to the commencement of construction.

AQ-25 NOx and VOC emission reductions that occurred from April through November may be used to offset increases in NO_x and VOC respectively during any period of the year. [District Rule 2201]

Verification: The project owner shall submit copies of ERC surrendered to the CPM no later than 30 days prior to the commencement of construction.

AQ-26 NOx ERCs may be used to offset PM10 emission increases at a ratio of 2.42 lb NOx : 1 lb PM10 for reductions occurring within 15 miles of this facility, and at 2.72 lb NOx : 1 lb PM10 for reductions occurring greater than 15 miles from this facility. [District Rule 2201]

Verification: The project owner shall submit copies of ERC surrendered to the CPM no later than 30 days prior to the commencement of construction.

AQ-27 At least 30 days prior to commencement of construction, the the project owner shall provide the District with written documentation that all necessary offsets have been acquired or that binding contracts to secure such offsets have been entered into. [District Rule 2201]

Verification: The project owner shall submit copies of ERC surrendered to the CPM no later than 30 days prior to the commencement of construction.

AQ-28 Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, the project owner may utilize a District approved continuous in-stack ammonia monitor to monitor compliance. At least 60 days prior to using a NH3 CEM, the the project owner must submit a monitoring plan for District review and approval [District Rule 4102]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.** The project owner shall submit an ammonia CEM monitoring plan to the District for review and approval at least 60 days prior to its use.

AQ-29 Compliance with the short term emission limits (lb/hr and ppmv @ 15% O2) shall be demonstrated within 90 days of initial operation of each gas turbine engine and annually thereafter by District witnessed in situ sampling of exhaust gasses by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and

lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081]

Verification: The project owner shall provide records of compliance as part of **Condition AQ-33.**

AQ-30 Compliance with the startup NOx, CO, and VOC mass emission limits shall be demonstrated for one of the CTGs (S-3636-1, 2 or 3) upon initial operation and at least every seven years thereafter by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. [District Rule 1081]

Verification: The project owner shall provide records of compliance as part of **Condition AQ-33.**

AQ-31 The project owner shall conduct an initial speciated HAPS and total VOC source test for one of the CTGs (S-3636-1, 2 or 3), by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. The project owner shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission rate 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 by the combined VOC emissions rates for the CTGs (S-3636-1, 2 and 3) determined during initial and annual compliance source testing and the correlation between VOC emissions and HAP(S) . [District Rule 4002].

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

AQ-32 Compliance with natural gas sulfur content limit shall be demonstrated within 60 days of operation of each gas turbine engine and periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 1081, 2540, and 4001]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-33 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. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [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 the CPM and District approval 15 days prior to testing. The results and field data collected by the source tests shall be submitted to the CPM and the District within 60 days of testing.

AQ-34 Source test plans for initial and seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201]

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

AQ-35 The following test methods shall be used PM10: EPA method 5 (front half and back half), NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, and 4703]

Verification: The project owner shall provide records of compliance as part of **Condition AQ-33.**

AQ-36 The project owner shall notify the District of the date of initiation of construction no later than 30 days after such date, date of anticipated startup not more than 60 days or less than 30 days prior to such date, and the date of actual startup within 15 days after such date. [District Rule 4001]

Verification: The project owner shall notify the CPM and the District of the date of initiation of construction no later than 30 days after such date. The project owner shall notify the CPM and the District of the date of anticipated startup not more than 60 days nor less than 30 days prior to such date, and the date of actual startup within 15 days after such date.

AQ-37 The the project owner shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve-month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve-month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-38 The project owner shall maintain records of SOx lb/hr, lb/day, and lb/twelve-month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-39 The project owner shall maintain the following records for the CTG: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing, emission measurements; total daily and annual hours of operation; hourly quantity of fuel used and three hour average operating load. [District Rules 2201 & 4703]

Verification: The project owner shall compile required data and submit the information to the CPM in quarterly reports submitted no later than 60 days after the end of each calendar quarter.

AQ-40 The project owner shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period of non-operation of any continuous emissions monitor. [District Rules 2201 & 4703]

Verification: The project owner shall provide records of compliance as part of the quarterly reports of **Condition AQ-39.**

AQ-41 The project owner shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001]

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

AQ-42 All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201]

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

AQ-43 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 compile the required data in the formats discussed above and submit the results to the CPM quarterly as it is reported in **AQ 39.**

AQ-44 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 Districts satisfaction that the longer reporting period was necessary. [District Rule 1100]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM as part of the quarterly reports of **Condition AQ-39**.

AQ-45 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]

Verification: The project owner shall comply with the notification requirements of the District and submit written copies of these notification reports to the CPM as part of the quarterly reports of **Condition AQ-39**.

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 the continuous emission monitor audit results with the quarterly reports required of **Condition AQ-48**.

AQ-47 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 the continuous emission monitor results with the quarterly reports of **Condition AQ-48**.

AQ-48 The project owner shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred . [District Rule 1080]

Verification: The project owner shall compile the required data and submit the quarterly reports to the CPM and the APCO within 30 days of the end of the quarter.

AQ-49 The project owner shall submit an application to comply with Rule 2540 - Acid Rain Program 24 months before the unit commences operation. [District Rule 2540]

Verification: The project owner shall file their application with the District at least 24 months prior to the commencement of operation of any of the combustion turbine generators.

FORCED DRAFT COOLING TOWER WITH 16 CELLS AND HIGH EFFICIENCY DRIFT ELIMINATOR [S-3636-4-0]:

AQ-50 No air contaminant shall be released into the atmosphere that causes a public nuisance. [District Rule 4102]

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

AQ-51 The project owner shall submit to the District at least 30 days prior to commencement of construction, drift eliminator design details and vendor supplied justification for the correction factor to be used to correlate blowdown TDS to drift TDS and correct for the amount of drift that stays suspended in the atmosphere. Correction factor is used in the equation below to calculate cooling tower PM10 emissions rate. [District Rule 2201]

Verification: 30 days prior to commencement of construction of the cooling towers, the project owner shall submit the information required above to the District and the CPM.

AQ-52 The project owner shall submit cooling tower design details including the cooling tower type and materials of construction to the District at least 30 days prior to commencement of construction and at least 90 days before the tower is operated. [District Rule 7012]

Verification: 30 days prior to commencement of construction of the cooling towers, the project owner shall submit the information required above to the District and the CPM.

AQ-53 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]

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

AQ-54 Drift eliminator drift rate shall not exceed 0.0005%. [District Rule 2201]

Verification: The project owner shall submit documentation from the selected cooling tower vendor that verifies the drift efficiency to the CPM 60 days prior to commencement of construction of the cooling towers.

AQ-55 PM_{10} emissions rate shall not exceed 17.4 lb/day. [District Rule 2201]

Verification: Please refer to condition **AQ 56**.

AQ-56 Compliance with the PM_{10} daily emission limit shall demonstrated as follows: PM_{10} lb/day = circulating water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate * correction factor. [District Rule 2201]

Verification: The project owner shall compile the required daily PM_{10} emissions data and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-57 Compliance with PM_{10} emission limit shall be determined by blowdown water sample analysis by independent laboratory within 90 days of initial operation and weekly thereafter. [District Rule 1081]

Verification: The project owner shall compile the required daily PM10 emissions data and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-58 Prior to operation the project owner shall surrender offsets for S-3636-1-0, 2-0, 3-0, 4-0 and 5-0, for all calendar quarters in the following amounts, at the offset ratio specified in Rule 2201 (6/15/95 version) Table 1, PM10 - Q1: 112,783 lb, Q2: 113,991 lb, Q3: 115,244 lb, and Q4: 115,244 lb; SOx (as SO2) - Q1: 20,905 lb, Q2: 21,137 lb, Q3: 21,369 lb, and Q4: 21,369 lb; NOx (as NO2) - Q1: 96,376 lb, Q2: 97,447 lb, Q3: 98,518 lb, and Q4: 98,518 lb; and VOC - Q1: 55,301 lb, Q2: 55,915 lb, Q3: 56,530 lb, and Q4: 56,529 lb. [District Rule 2201]

Verification: The owner/operator shall submit copies of ERC surrendered to the SJVUAPCD in the totals shown to the CPM prior to or upon startup of the CTGs or cooling tower.

FORCED DRAFT COOLING TOWER WITH 8 CELLS AND HIGH EFFICIENCY DRIFT ELIMINATOR [S-3636-5-0]:

AQ-59 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-60 The project owner shall submit to the District at least 30 days prior to commencement of construction, drift eliminator design details and vendor supplied justification for the correction factor to be used to correlate blowdown TDS to drift TDS and correct for the amount of drift that stays suspended in the atmosphere. Correction factor is used in the equation below to calculate cooling tower PM_{10} emissions rate. [District Rule 2201]

Verification: 30 days prior to commencement of construction of the cooling towers, the project owner shall submit the information required above to the District and the CPM.

AQ-61 The project owner shall submit cooling tower design details including the cooling tower type and materials of construction to the District at least 30 days prior to commencement of construction and at least 90 days before the tower is operated. [District Rule 7012]

Verification: 30 days prior to commencement of construction of the cooling towers, the project owner shall submit the information required above to the District and the CPM.

AQ-62 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]

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

AQ-63 Drift eliminator drift rate shall not exceed 0.0005%. [District Rule 2201]

Verification: The project owner shall submit documentation from the selected cooling tower vendor that verifies the drift efficiency to the CPM 60 days prior to commencement of construction of the cooling towers.

AQ-64 PM_{10} emissions rate shall not exceed 8.7 lb/day. [District Rule 2201]

Verification: Please refer to condition **AQ 56**.

AQ-65 Compliance with the PM10 daily emission limit shall demonstrated as follows: PM_{10} lb/day = circulating water recirculation rate * total dissolved solids concentration in the blowdown water * design drift rate * correction factor. [District Rule 2201]

Verification: The project owner shall compile the required daily PM_{10} emissions data and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-66 Compliance with PM_{10} emission limit shall be determined by blowdown water sample analysis by independent laboratory within 90 days of initial operation and weekly thereafter. [District Rule 1081]

Verification: The project owner shall compile the required daily PM10 emissions data and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-67 Prior to operation the project owner shall surrender offsets for S-3636-1-0, 2-0, 3-0, 4-0 and 5-0, for all calendar quarters in the following amounts, at the offset ratio specified in Rule 2201 (6/15/95 version) Table 1 PM10 - Q1: 112,738 lb, Q2: 113,991 lb, Q3: 115,244 lb, and Q4: 115,244 lb; SOx (as SO2) - Q1: 20,905 lb, Q2: 21,137 lb, Q3: 21,369 lb, and Q4: 21,369 lb; NOx (as NO2) - Q1: 96,376 lb, Q2:

97,447 lb, Q3: 98,518 lb, and Q4: 98,518 lb; and VOC - Q1: 55,301 lb, Q2: 55,915 lb, Q3: 56,530 lb, and Q4: 56,529 lb. [District Rule 2201]

Verification: The owner/operator shall submit copies of ERC surrendered to the SJVUAPCD in the totals shown to the CPM prior to or upon startup of the CTGs or cooling tower.

425 HP CATERPILLAR MODEL 3406C DITA OR CPM-APPROVED EQUIVALENT DIESEL-FIRED IC ENGINE DRIVING EMERGENCY FIRE WATER PUMP [S-3636-6-0]:

AQ-68 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-69 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 make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-70 Engine shall be equipped with a turbocharger and intercooler/aftercooler. [District Rule 2201]

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

AQ-71 Engine shall be equipped with an operational non-resettable hour meter. [District Rule 2201]

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

AQ-72 The engine shall be equipped with a positive crankcase ventilation (PCV) system or a crankcase emissions control device of at least 90% control efficiency unless UL certification would be voided. [District Rule 2201]

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

AQ-73 NO_X emissions shall not exceed 7.2 g/hp-hr. [District Rule 2201].

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission. In addition, if the District were to require a compliance source test, the project owner shall submit a copy of the results of that test no later than 60 days after completion of the test.

AQ-74 The sulfur content of the diesel fuel used shall not exceed 0.05% by weight. [District Rule 2201]

Verification: Please refer to Condition **AQ 77.**

AQ-75 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission. In addition, if the District were to require a compliance source test, the project owner shall submit a copy of the results of that test no later than 60 days after completion of the test.

AQ-76 The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 200 hours per year. [District Rules 2201 and 4701]

Verification: The project owner shall compile records of hours of operation of any of the IC engines and include those records as part of the quarterly reports of condition **AQ 39**.

AQ-77 The project owner shall maintain records of hours of non-emergency operation and of the sulfur content of the diesel fuel used. Such records shall be made available for District inspection upon request for a period of five years. [District Rules 2201 and 4701]

Verification: The project owner shall compile records of hours of operation of this IC engine and of the diesel fuel purchased that includes the sulfur content, and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

814 HP CATERPILLAR MODEL G3512 SC TA NATURAL GAS FIRED IC ENGINE DRIVING EMERGENCY ELECTRICAL GENERATOR WITH THREE-WAY CATALYST OR CPM-APPROVED EQUIVALENT [S-3636-7-0]:

AQ-78 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-79 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 make the site available for inspection by representatives of the District, CARB and the Commission.

AQ-80 The project owner shall provide a complete engine/catalyst description and specification, including manufacture s published NOx, VOC and CO post-catalyst emission rates (gram/hp.hr or ppmv @ 15% O2), at least 30 days prior to installation. [District Rule 2201]

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

AQ-81 Engine shall be equipped with an operational non-resettable hour meter. [District Rule 2201]

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

AQ-82 The engine shall be equipped with a positive crankcase ventilation (PCV) system or a crankcase emissions control device of at least 90% control efficiency unless UL certification would be voided. [District Rule 2201]

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

AQ-83 Sulfur content of natural gas fuel shall not exceed 0.75 grains/100 scf. [District Rule 2201].

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

AQ-84 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

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

addition, if the District were to require a compliance source test, the project owner shall submit a copy of the results of that test no later than 60 days after completion of the test.

AQ-85 The engine shall be operated only for maintenance, testing, and required regulatory purposes, and during emergency situations. Operation of the engine for maintenance, testing, and required regulatory purposes shall not exceed 200 hours per year. [District NSR Rule and 4701]

Verification: The project owner shall compile records of hours of operation of any of the IC engines and include those records as part of the quarterly reports submitted of condition **AQ 39.**

AQ-86 The project owner shall maintain records of hours of non-emergency operation and of the sulfur content of the natural gas fuel used. Such records shall be made available for District inspection upon request for a period of five years. [District Rules 2201 and 4701]

Verification: The project owner shall compile records of hours of operation of this IC engine and maintain the data for a period of five years. The project owner shall make the site available for inspection by representatives of the District, CARB and the Commission.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and looks at potential public health effects from project emissions of toxic air contaminants. In this analysis, the Commission considers whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[28]

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.[29] In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from TAC emissions.[30] The Air Toxics Hot Spots Information and Assessment Act requires the quantification of TACs from specified facilities that are categorized according to their emissions levels and proximity to sensitive receptors. (Health and Safety Code,/44360 et seq.)

---

[28] This Decision addresses 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 section. 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 Soils and Water Resources section. Hazardous and non-hazardous wastes are described in the Waste Management section.

[29] Criteria pollutants are discussed in the Air Quality section. They are pollutants for which ambient air quality standards have been established by local, state, and federal regulatory agencies. The emission control technologies that the project owner will employ to mitigate criteria pollutant emissions are considered effective for controlling noncriteria pollutant emissions from the same source. (Ex. 35, p. 67.)

[30] The health risk assessment protocol is set forth in the Air Toxics Hot Spot Program Risk Assessment Guidelines developed by the California Air Pollution Control Officers Association (CAPCOA) pursuant to the Air Toxics Hot Spots Information and Assessment Act (Health and Safety Code,/44360 et seq.). See, Ex. 1, p. 5.16-2.

1. Health Risk Assessment

Applicant performed a health risk assessment that was reviewed by Staff and the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD or Air District). Applicant s risk assessment employed scientifically accepted methodology that is consistent with the CAPCOA Guidelines and with methods developed by the California Office of Environmental Health Hazard Assessment (OEHHA). (Ex. 1,/5.16.2.1 et seq.; Ex. 35, p. 73.) This approach emphasizes a worst-case screening analysis to evaluate the highest level of potential impact. Applicant included the following steps in its analysis:

- Hazard identification in which each pollutant of concern is identified along with possible health effects;
- Dose-response assessment in which the relation between the magnitude of exposure and the probability of effects is established;
- Exposure assessment in which the possible extent of pollutant exposures from a project is established for all possible pathways by dispersion modeling; and
- Risk characterization in which the nature and the magnitude of the possible human health risk is assessed.

The risk assessment addresses three categories of health impacts: acute (short-term), chronic (long-term), and carcinogenic adverse health effects. (Ex. 1,/5.16; Ex. 35, pp. 70-71.)

Regulatory agencies use the hazard index method to assess the likelihood of acute or chronic non-cancer effects. In this approach, a hazard index is a numerical representation of the likelihood of significant health impacts at the reference exposure levels (RELs) expected for the source in question. After calculating the hazard indices for the individual pollutants,[31] these indices are

[31] The project s noncriteria pollutants that were considered in analyzing non-cancer effects include: ammonia, used for the SCR system alternative for NOx control, acetaldehyde, acrolein, benzene, 1,3 butadiene; ethylbenzene, formaldehyde, hexane, naphthalene, polycyclic aromatic hydrocarbons (PAHs), propylene oxide, toluene, and xylenes. (Ex. 35, p. 73; Ex. 1,/5.16, Table 5.16-1.)

added together to obtain a total hazard index. A total hazard index of 1.0 or less is considered an insignificant effect. (Ex. 35, p. 70-71.)

Potential cancer risk is calculated by multiplying the exposure estimate by the potency factors for the individual carcinogens involved.[32] The exposure estimate is based on a worst-case scenario, which assumes a maximally exposed individual (MEI) at the point of highest toxicity 24 hours a day, 365 days a year over a 70-year period. The greatest true exposure is likely to be at least 10 times lower than that calculated using the MEI assumption since no real person would be in the same spot for 70 years. (Ex. 1, / 5.16.2.4.3.) Further, annual emissions are calculated assuming simultaneous operation of all turbines at 100 percent load, which will not always occur under real operating conditions. (*Id.*, at p. 5.16-5.) Given the conservatism in the various phases of this calculation process, the numerical estimates are designed to represent the upper bounds of cancer risk. Energy Commission staff considers a potential cancer risk of one in a million as the level of significance.[33] (Ex. 35, p. 71.)

2. Potential Impacts

There is no evidence that sensitive receptors (schools, elderly, hospitals) are located within a ten-mile radius of the site. Further, no developments have been proposed within a two-mile radius of the site. (Ex. 35, p. 69.) Applicant performed EPA-approved air dispersion modeling as discussed in the **Air Quality** section and determined that the point of maximum impact for project

---

[32] The following noncriteria pollutants were considered with regard to possible cancer risk: acetaldehyde, benzene, 1,3 butadiene, formaldehyde, PAHs and propylene oxide. (Ex. 35, p. 73; Ex. 1,/5.16, Table 5.16-1.)

[33] Various state and federal agencies specify different cancer risk significance levels. Under the Air Toxics Hot Spots and the Proposition 65 programs, for example, a risk of 10 in a million is considered significant and used as a threshold for public notification. The SJVUAPCD considers the same risk of 10 in a million as acceptable for a source such as PEF where the best available control technology for air toxics (T-BACT) is used. (Ex. 35, p. 71.)

emissions would be about 1.3 miles (2.1 Km) southeast of the project site. (Ex. 1,/5.16.2.3.1.)

Construction. Potential construction impacts may result from windblown dust created by site grading activities and diesel emissions from heavy equipment and other vehicles. (Ex. 1, pp. 5.2-23 through 5.2-25 and 5.16-2.)

Condition **WASTE-5** requires the project owner to remove and dispose of contaminated soils if encountered during excavation and site grading.[34] Such safe removal ensures that construction workers will not be exposed to contaminated fugitive dust. The procedures for minimizing dust exposure are addressed in the **Air Quality** section. See, Conditions **AQ-C1** and **AQ-C2**.

No significant public health effects are expected during construction since construction-related emissions are temporary and localized. All predicted maximum concentrations of pollutants from construction vehicles and equipment will occur at locations along the immediate property boundary, resulting in no long-term impacts to the public. (Ex. 1,/5.16.2.1, Ex. 35, p. 72.) The project owner will install soot filters on construction vehicles. (Condition **AQ-C3**.) Construction worker safety measures are incorporated in the **Worker Safety** Conditions.

Operation. TACs emitted in combustion byproducts from the project s exhaust stacks have the potential to cause adverse health effects. Applicant calculated a *chronic* hazard non-cancer index of 0.14 for the maximum impact location assuming the alternative SCR for NO_x control. (Ex. 1, p. 5.16-7.) Using the proposed XONON" control technology would slightly decrease this hazard index to 0.12 because ammonia is eliminated from the calculation. (*Ibid.*) Applicant calculated an *acute* non-cancer hazard index of 0.57 for the same maximum

[34] See discussion of Applicant s Phase I Environmental Site Assessment concerning potentially contaminated soils in the Waste Management section of this Decision.

impact location using the SCR system. This index would decrease to 0.54 with the proposed XONON“ system. (*Ibid.*)

The evidence establishes that these indices are below the levels of potential health significance, indicating that no significant adverse health effects would likely be associated with the project s noncriteria pollutants whether NO_x is controlled by XONON“ technology or the alternative SCR system. (Ex. 1,／ 5.16.2.3.2 et seq.) Moreover, there are no sensitive receptors at the point of maximum impact.

The highest combined cancer risk was estimated at 0.56 in a million for the MEI at the maximum impact location. This risk value is below Staff s *de minimis* significance level and would not change with the use of SCR since the ammonia required for SCR is not a carcinogen. It is also significantly below the level considered acceptable by the Air District for sources such as PEF. (Ex. 35, pp. 73-74.)

3. Cumulative Impacts

When toxic pollutants are emitted from multiple sources within a given area, the cumulative or additive impacts of such emissions could lead to significant health impacts, even when such pollutants are emitted at insignificant levels from the individual sources involved. Analyses of such emissions have shown, however, that the peak impacts of such toxic pollutants are normally localized within relatively short distances from the source. Toxic pollutant levels beyond the point of maximum impact normally fall within ambient background levels. Since no significant pollutant sources are presently located or proposed for the project s impact area, no exposures of a cumulative nature are expected during the project operational phase. (Ex. 35, p. 74.)

4. Intervenors

Intervenor Kern Audubon Society expressed concern about the potential for PEF to exacerbate the bubonic plague, encephalitis, valley fever, and Lyme disease problems in the project area. Staff found that no aspects of the facility s operation would likely increase human exposure to these diseases (Ex. 35, pp. 74-75.)

FINDINGS AND CONCLUSIONS

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

1. Normal operation of the Pastoria Energy Facility (PEF) 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 noncriteria pollutants emitted by PEF.

4. There are no sensitive receptors within a ten-mile radius of the project site.

5. The point of maximum impact for toxic contaminant dispersion is located about 1.3 miles (2.1 kilometers) southeast of the site.

6. Acute and chronic non-cancer health risks from project emissions during construction and operational activities are insignificant.

7. The potential risk of cancer from project emissions is insignificant.

8. There is no evidence of cumulative public health impacts from project emissions.

The Commission therefore concludes that project emissions of noncriteria pollutants do not pose a significant direct, indirect, or cumulative adverse public health risk. All Conditions of Certification that control project emissions are specified in the **Air Quality** section of this Decision.

C. 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 are designed to protect industrial workers and provide adequate fire protection and emergency service response in accordance with all applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Impacts to Worker Safety

During construction and operation, workers may be exposed to chemical spills, hazardous wastes, fires, gas explosions, moving equipment, live electric conductors, confined space entry and egress problems, and exposure to contaminated soils.[35] (Ex. 35, p. 84.) PEF presents no unusual features that would require special mitigation measures in addition to those established in the applicable LORS.[36]

2. Mitigation Measures

Applicant will develop and implement a Construction Safety and Health Program and an Operation Safety and Health Program, both of which must be reviewed by the appropriate agencies prior to project construction and operation. (Ex. 1, / 5.17; Ex. 35, pp. 85-92.) Separate Injury and Illness Prevention Programs, Fire Protection and Prevention Plans, and Personal Protective

---

[35] PEF must develop a soil sampling and management plan for the excavation phase of project development and, consistent with Phase I ESA recommendations, along the gas pipeline route. See, Conditions **WASTE 5** and **WASTE 9** in the Waste Management section of this decision.

[36] California Occupational Health and Safety Administration (Cal/OSHA) regulations (Cal. Code of Regs., tit. 8, / 1500 et seq.) and other applicable federal, state, and local laws affecting industrial workers are identified in Appendix A of this Decision. See also, Ex. 35, pp. 77-79, 85-86.

Equipment Programs will also be prepared for both the construction and operation phases of the project. These comprehensive programs will contain more specific plans dealing with the site and linear facilities, such as the Emergency Action Plan, as well as additional programs under the General Industry Safety Orders, Electrical Safety Orders, and Unfired Pressure Vessel Safety Orders. (*Ibid.*) Conditions **Worker Safety-1** and **Worker Safety-2** require PEF to consult with Cal/OSHA and the Kern County Fire Department to ensure that these programs will comply with applicable LORS.

3. Fire Protection

PEF will rely on fire protection systems onsite as well as local fire protection services. Project design includes 1) a carbon dioxide fire protection system with fire detection sensors; 2) a deluge spray system; 3) fire hydrants/hose stations; 4) sprinkler system; and 5) smoke detectors and fire extinguishers. Firewater will be stored in the Makeup Water Storage Tank, which holds 500,000 gallons. A plant firewater loop will reach all parts of the facility. (Ex. 35, p. 83.)

The Kern County Fire Department has five fire stations in the project vicinity that would respond to fires and other emergencies during project construction and operation. (Ex. 35, pp. 80, 83.) Mettler Station 55, the fire station closest to the PEF site, is located 16 miles northwest of the site with an estimated response time of 22 minutes. County approval of the Tejon Industrial Complex on the eastside of Interstate Highway 5 (I-5) at the Laval Road exit includes plans for the Fire Department to move the Mettler Station to that location.[37] This will reduce response time to about 12 minutes. As a result, the newly located Mettler Station will provide the initial emergency response to both PEF and the Industrial Complex. (*Ibid.*; 9/19 RT 171-172.)

---

[37] At the evidentiary hearing, the Kern County Fire Marshall stated that the Mettler Station will move to the new location in about a year and add one more firefighter to the station. (9/19 RT 172.)

Lebec Station 56 and Arvin Station 54 will provide back-up support. Landco Station 66 in Bakersfield will provide hazardous materials response. An additional station Virginia Colony Station 41, in Bakersfield, maintains an aerial ladder truck for high angle and confined space rescue. See, **Worker Safety Table 1**, below, which provides an outline of the response time, equipment and personnel at each station.

WORKER SAFETY AND FIRE PROTECTION Table 1
Fire Station/Fire Protection Capabilities

Station	Response time	Equipment[1]	Personnel per shift
Kern County Fire Department Mettler Station 55 1801 Mettler Road West Mettler, CA 93313 (661) 858-2490 TO BE RELOCATED	16 miles northwest from project site. Estimated response time: 22 minutes	1— Type I Engine 1 — Type 4, FWD watershed Patrol	1 Captain 1 Engineer
Kern County Fire Dept. Lebec Station 56 1548 Golden State Hwy Lebec, CA 93243 (661) 248-6426	16 miles south of project site. Estimated response time: 13-14 minutes	2— Type I Engines 1 — Type 4, FWD watershed Patrol	1 Captain 1 Engineer 1 Firefighter
Kern County Fire Dept. Arvin Station 54 301 Campus Drive Arvin, CA 93203 (661) 854-5517	30 miles north from project site. Estimated response time: 30 minutes	2— Type I Engines 1 — Type 4, FWD watershed Patrol	1 Captain 1 Engineer 1 Firefighter
Kern County Fire Dept. Landco Station 66 3000 Landco Drive Bakersfield, CA 93308 (661) 861-2566	30 miles north from project site. Estimated response time: 30 minutes	2— Type I Engines 1 — Type 4, FWD watershed Patrol 1 — Hazardous Material Unit	1 Captain 1 Engineer 3 Firefighters
Kern County Fire Dept. Virginia Colony Station 41 2214 Virginia Avenue Bakersfield, CA 93307 (661) 326-1626	30 miles north from project site. Estimated response time: 30 minutes	1 — Type I Engine 1 — Type 4 FWD watershed Patrol 1 — Ladder Truck	2 Captains 2 Engineers 2 Firefighters 1 Battalion Chief

[1] Following is a general description of the response equipment listed:

- Type I fire engine is a primary response unit. It has a minimum 400-gallon water tank, a minimum of 1,200 feet of 2 _ -inch hose or larger, 200 feet of 1 foot hose, a 20 to 24 extension ladder and a 500-gpm (gallons per minute) heavy stream appliance. This apparatus also has Basic Life Support (BLS) medical treatment capabilities.
- Type 4 squad is a four-wheel drive (FWD) vehicle used for brush fire or watershed patrol.
- A Hazardous Material Unit is a van for hazardous material response and technical rescue.
- Ladder Truck is also a primary response unit. It has a 100-foot extension ladder with basket, and stream capability of 1,500 gpm.

The Fire Department needs additional equipment and personnel associated with providing fire protection services to the project. Applicant has been negotiating with the Kern County Fire Department regarding the amount of fees or other mitigation that would be appropriate to cover project-specific and cumulative impacts to fire services. (9/19 RT 169-170.) Condition **WORKER SAFETY-3** requires the project owner to reach agreement with the Fire Department on these matters prior to the start of excavation.

The Kern County Planning Department requested that the Conditions of Certification require Applicant to provide final diagrams and plans for its fire protection facilities and access routes to the Fire Department for approval prior to construction. (Ex. 35, p. 90.) Conditions **WORKER SAFETY-1** and **WORKER SAFETY-2** include this requirement.

Intervenor Kern Audubon Society was concerned that the project would increase the potential for wildfires in the area. The evidence indicates that protection from wildfires will be adequately addressed by implementation of approved fire prevention and suppression measures in the immediate area surrounding the project. (Ex. 35, p. 91.)

4. Valley Fever

The Intervenor was also concerned about potential exposure of workers to Valley Fever during project construction activities. Applicant asserted that dust control measures, required by the San Joaquin Valley Unified Air Pollution Control

District, to control fugitive dust and compliance with Kern County s grading ordinance will reduce potential exposure to a level of insignificance.[38] (9/19 RT 182-183.) Applicant also indicated that the Kern County Health Department is willing to discuss Valley Fever with construction workers at the site prior to the start of construction. (9/19 RT 184.)

COMMISSION DISCUSSION

Implementation of the proposed Construction Safety and Health Plan and the proposed Operation Safety and Health Plan will ensure compliance with applicable LORS relating to industrial workers and will reduce potential impacts to insignificant levels. The Conditions require the project owner to submit its plans to Cal/OSHA, the Kern County Fire Department, and the Commission for review. Cal/OSHA will monitor implementation of the plans, as necessary.

The evidentiary record documents continued negotiations between Applicant and the Fire Department to ascertain fees and other mitigation measures necessary to provide adequate fire protection and emergency response service. Applicant is required to provide a final agreement on these matters prior to the start of any excavation activities. We believe this requirement ensures that appropriate measures will be implemented to provide emergency services to the project.

FINDINGS AND CONCLUSIONS

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

1. Industrial workers are exposed to potential health and safety hazards on a daily basis.

---

[38] Applicant s witness testified that she consulted with the Kern County Health Department Task Force on Valley Fever, which has concluded that control of fugitive dust for PM_{10} also reduces the amount of fungus in the air that causes Valley Fever. (9/19 RT 183-184.)

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and operation phases of the project, including an accident/injury prevention program, a personal protective equipment program, an emergency action plan, a fire protection and prevention plan, and other general safety procedures.

3. The project will rely on local fire protection services and onsite fire protection systems that will be approved by the Kern County Fire Department.

4. The Kern County Fire Department has 5 fire stations within 30 minutes response time to the project site.

5. Mettler Station 55, the nearest fire station to the project site with a current response time of 22 minutes, will be relocated closer to PEF at the new Tejon Industrial Complex, which will provide a response time of 12 minutes.

6. HAZMAT response will be provided by the Landco Station 66 in Bakersfield, which has the most direct access to the site via Interstate 5.

7. Existing fire and emergency service resources will be adequate to meet project needs with the completion of negotiations between PEF and the Kern County Fire Department to ascertain the fees and measures necessary to ensure adequate fire protection and emergency services.

8. With the agreement between PEF and the Kern County Fire Department regarding appropriate mitigation, impacts to fire protection and emergency services will be insignificant.

9. Implementation of the Conditions of Certification, below, will ensure that the project conforms with all applicable laws, ordinances, regulations, and standards on industrial worker health and safety as identified in the pertinent portions of APPENDIX A of this Decision.

The Commission therefore concludes that implementation of Applicant s Safety and Health Programs and Fire Protection measures will reduce potential adverse impacts on the health and safety of industrial workers to levels of insignificance.

CONDITIONS OF CERTIFICATION

WORKER SAFETY-1 The project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program, containing the following:

- a construction Injury and Illness Prevention Program
- a construction Fire Protection and Prevention Plan
- a personal Protective Equipment Program

Protocol: The Construction Injury and Illness Prevention Program and the Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service during the initial construction period, for review and comment concerning compliance of the program with all applicable Safety Orders. The project owner shall schedule a site visit with Cal/OSHA during construction.

The Construction Fire Protection and Prevention Plan shall be submitted to the Kern County Fire Department for review and acceptance.

Verification: At least 30 days prior to the start of construction, or a date agreed to by the CPM, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program and the Personal Protective Equipment Program. The project owner shall provide a letter from the Kern County Fire Department stating that they have reviewed and accepted the Construction Fire Protection and Prevention Plan.

The project owner shall provide a copy of the cover letter to Cal/OSHA s Consultation Service requesting review and comment of the Construction Injury and Illness Prevention Program and the Personal Protective Equipment Program. The project owner shall inform the CPM of Cal/OSHA site visits and inspection results.

WORKER SAFETY—2 The project owner shall submit to the CPM a copy of the Project Operation Safety and Health Program containing the following:

- an Operation Injury and Illness Prevention Plan
- an Emergency Action Plan

- an Operation Fire Protection Plan
- a Personal Protective Equipment Program

Protocol: The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service during initial operations, for review and comment concerning compliance of the program with all applicable Safety Orders. The project owner shall schedule a site visit with Cal/OSHA during initial operations.

The Operation Fire Protection Plan and the Emergency Action Plan shall be submitted to the Kern County Fire Department for review and acceptance.

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM a copy of the final version of the Project Operation Safety & Health Program, and Kern County Fire Department comments, stating that they have reviewed and accepted the specified elements of the proposed Operation Safety and Health Plan.

The project owner shall provide a copy of the cover letter to Cal/OSHA s Consultation Service requesting review and comment of the Operation Injury and Illness Prevention Program and the Personal Protective Equipment Program. The project owner shall inform the CPM of Cal/OSHA site visits and inspection results.

The project owner shall notify the CPM that the Project Operation Safety and Health Program (Injury and Illness Prevention Plan, Fire Protection Plan, the Emergency Action Plan, and Personal Protective Equipment requirements), including all records and files on accidents and incidents, is present on-site and available for inspection.

WORKER SAFETY—3 The project owner shall reach an agreement with the Kern County Fire Department on the amount of fees and timing of payment the project owner will provide to cover project specific and cumulative impacts associated with providing fire protection services.

Protocol: PEF shall meet with representatives of the Kern County Fire Department to discuss mitigation of the cumulative impacts and to reach an agreement on the fees the project owner will provide.

Verification: Not later than 30 days prior to any project related ground disturbance, the project owner shall provide the CPM with a copy of an

agreement with the Kern County Fire Department relative to the agreed-upon fees and payment for the additional staffing, or other alternative mitigation measures.

D. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the Pastoria Energy Facility will create significant impacts to public health and safety resulting from the use, handling, or storage of hazardous materials at the facility. Related issues are addressed in the **Waste Management**, **Worker Safety**, and **Traffic and Transportation** portions of this Decision.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts, including local meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. The evidence of record incorporates these factors in the analysis of potential impacts.

1. Potential Impacts

Tables 3.4.10-1 and 3.4.10-2, appended to Condition of Certification **HAZ-1,** list the hazardous materials that will be used and stored onsite, including aqueous ammonia, hydrogen, sulfuric acid, hydrochloric acid, and cyclohexylamine (neutralizing amine). However, none of these materials will be used or stored in excess of regulated threshold quantities under the California Accidental Release Prevention (CalARP) Program[39] except for aqueous ammonia.[40] (Ex. 1, ⁄

---

[39] The CalARP Program includes both federal and state programs established to prevent accidental release of regulated toxic and flammable substances. (CA Health & Safety Code, ⁄ 25531 et seq.; Cal. Code of Regs., tit. 19, ⁄ 2720 et seq.) Regulated substances are those stored or used in amounts exceeding threshold quantities that would require the filing of a Risk Management Plan under the CalARP program. (Ex. 1, ⁄ 5.15.2.2.2.).

[40] If the selective catalytic reduction (SCR) process is selected to control NOx emissions rather than the proposed XONON™ technology, aqueous ammonia would be used at PEF in quantities exceeding the reportable amounts defined in California Health and Safety Code, section 25532(j).

5.15.2.2.2.) The other substance of concern is natural gas, which will be used in large quantities but not stored onsite. (Ex. 1,/5.15.2.2.1.)

Hazardous substances used or stored onsite in smaller quantities, such as diesel fuel, mineral and lubricating oils, scale inhibitors, and water conditioners do not create the potential for significant off-site impacts due to their small quantities, relatively low toxicity, and/or low environmental mobility. (Ex. 35, pp. 109-110.)

a. Aqueous Ammonia

The accidental release of aqueous ammonia without proper mitigation can result in hazardous downwind concentrations of ammonia gas.[41] (Ex. 35, p. 112.) Applicant performed an Off-Site Consequences Analysis (OCA) to evaluate potential public health impacts in a worst case scenario resulting from an accidental release during truck unloading. (Ex. 1,/5.15.2.3.) Staff considers the threshold significance level to be a one-time exposure to 75 parts per million (ppm) of ammonia gas.[42] (Ex. 35, p. 112.) Applicant s OCA results for the maximum, worst case scenario (including worst case meteorological conditions) estimated ammonia concentrations below 75 ppm at the site boundary. (Ex. 6; Ex. 1,/5.15.2.3.1 et seq.)

The project site is located in a sparsely populated area of Kern County. The closest sensitive receptors (residences) are about 4.5 miles northeast of the site (Ex. 6.) There are no identified schools, hospitals, day care centers, long-term health care facilities, or emergency response facilities within 5 miles of the site. Atmospheric dispersion modeling was performed out to a distance of 5/8 mile

---

[41] The choice of aqueous ammonia (25% concentration) significantly reduces the risk that is associated with the more hazardous anhydrous form, which is stored as a liquid gas. (Ex. 35, p. 109.)

[42] Staff s Appendix A, Table 1, replicated at the end of this section, shows the acute ammonia exposure guidelines for different sectors of the population. Ex. 35, p. 119-121.)

where predicted concentrations fell below 1 ppm under worst case meteorological conditions. (*Ibid.*) Based on these modeling results, Applicant and Staff agreed that there would be no significant off-site public health consequences from an accidental ammonia release. (Ex. 1,/5.15.2.3.5; Ex. 35, p. 115.)

Several project design features reduce the risk of an accidental release. There will be three 20,000-gallon ammonia storage tanks (one per turbine), amounting to a maximum onsite storage capacity of 60,000 gallons. The storage tanks are designed with double walls to provide a passive containment structure if the internal tank wall should fail. (Ex. 1,/5.15.2.3.1.) With this passive mitigation in place, the probability of a double wall failure is extremely unlikely. (*Ibid*.) To ensure these design plans are implemented, Condition **HAZ-4** requires that the storage tanks be constructed according to industry specifications. Condition **STRUC-4** in the **Facility Design** section of this Decision requires compliance with seismic design specifications.

To prevent exposure to an accidental release during truck unloading, the delivery station is designed as a pre-engineered metal and concrete building large enough for the entire truck to fit inside. The concrete unloading pad will slope to a central drain leading into an underground containment vault that can hold a truckload of aqueous ammonia and an equal quantity of wash down water. (Ex. 1,/5.15.2.3.1.) To ensure implementation of these design plans, Condition **HAZ-3** requires the project owner to provide a Safety Management Plan for ammonia deliveries.

b. Natural Gas

The project requires large amounts of natural gas, which creates a risk of both fire and explosion. (Ex. 35, p. 113.) This risk will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective

safety management practices. (*Ibid.*) The National Fire Protection Association (NFPA) Code 85A requires: 1) the use of double block and bleed valves for fast shut-off; 2) automated combustion controls; and 3) burner management systems. These measures significantly reduce the likelihood of an explosion. Additionally, start-up procedures will require air purging of gas turbines and combustion equipment to prevent build-up of an explosive mixture. (*Ibid.*)

Natural gas will not be stored onsite; rather, it will be continuously delivered via the 11.65-mile pipeline described in the **Facility Design** section of this Decision. Condition **MECH-1** ensures that construction and operation of the pipeline will comply with applicable safety requirements.

2. Mitigation

Personnel working with hazardous materials will receive appropriate training to avoid and respond to accidental releases.[43] Safety equipment will be provided and several safety programs will be implemented in this regard. (Ex. 1, // 5.15.2.3.5 and 5.15.3.2.1.) These programs include the Hazardous Materials Business Plan and the Risk Management Plan, which are required by Condition **HAZ-2**. See also, the **Worker Safety** section of this Decision.

3. Closure

The requirements for handling hazardous materials remain in effect until such materials are removed from the site regardless of closure. In the event that the project owner abandons the facility in a manner that poses a risk to surrounding populations, emergency action will be coordinated by federal, state, and local

[43] Different regulatory approaches are used to evaluate workplace and public exposure to hazardous pollutants. (Ex. 36, Supplemental Testimony of Rick Tyler, p. 10.)

agencies to ensure that any unacceptable risk to the public is eliminated. (Ex. 35, p. 114.)

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility will use hazardous materials during construction and operation, including aqueous ammonia, hydrogen, sulfuric acid, hydrochloric acid, cyclohexylamine (neutralizing amine), and natural gas.

2. The major public health and safety hazards associated with these hazardous materials are the accidental release of aqueous ammonia and fire and explosion from natural gas.

3. The project owner will submit an approved Safety Management Plan, an approved Business Plan, and an approved Risk Management Plan prior to delivery of any hazardous materials to the site.

4. Implementation of the mitigation measures described in the evidentiary record and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of handling hazardous materials.

5. With implementation of the Conditions of Certification, below, the Pastoria Energy Facility will comply with all applicable laws, ordinances, regulations, and standards identified in the pertinent portion of Appendix A of this Decision.

The Commission concludes, therefore, that the use of hazardous materials by the Pastoria Energy Facility will not result in any significant adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous material in reportable quantities, as specified in Title 40, C. F.R. Part 355, Subpart J, section 355.50, not listed in Appendix B, below, or in greater quantities than those identified by chemical name in Appendix B, below, unless approved in advance by the CPM.

Verification: The project owner shall provide to the CPM, in the Annual Compliance Report, a list of hazardous materials contained at the facility in reportable quantities.

HAZ-2 The project owner shall provide a Business Plan and Risk Management Plan to the Kern County Environmental Health Department and the CPM for review an approval. The RMP shall be submitted the CPM at the time the RMP is first submitted to either Kern County or the U.S. Environmental Protection Agency (EPA). The project owner shall reflect all recommendations of the Kern County Environmental Health Department and the CPM in the final document. A copy of the final RMP, reflecting all comments, shall be provided to Kern County and the CPM once it is deemed complete.

Verification: At least 60 days prior to handling reportable quantities of any hazardous material the owner shall provide a copy of a final Business Plan approved by Kern County to the CPM. At least 60 days prior to delivery of aqueous ammonia to the PEF project the owner shall provide the final RMP accepted by Kern County, to the CPM for approval.

HAZ-3 The project owner shall develop and implement a safety management plan for delivery of ammonia. The plan shall include procedures, protective equipment requirements, training and a checklist.

Verification: At least sixty days prior to the 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 tanks shall be constructed to specifications at least as protective as those in American Petroleum Institute (API) 620. The storage tank shall be double walled design or be within a secondary containment designed and operated to hold the volume of precipitation from a 24-hour, 25-year storm event plus 100 percent of the capacity of the largest tank within its boundary.

Verification: At least 60 days prior to delivery of aqueous ammonia to the site, the project owner shall submit final design drawings and specifications for the ammonia storage facility to the CPM for review and approval.

PASTORIA ENERGY FACILITY

SUMMARY OF WATER TREATMENT CHEMICAL USAGE AND STORAGE

CHEMICAL	APPLICATION	EXPECTED STORAGE QUANTITY (GALLONS)
		AVERAGE
Sulfuric Acid 93%[1] (H_2SO_4)	pH control of cooling towers neutralize excess alkalinity	3500
Sodium hydroxide[2] 32% (NaOH)	pH control of cooling towers	3500
Oxygen scavenger 30% concentration	Boiler chemical	100
Neutralizing amine 20% concentration	Boiler chemical	150
Phosphate 20% concentration	Removal of dissolved hardness ions (scale deposit control)	100
Sodium hypochlorite 12.5% solution (Bleach)	Biocide for cooling water	1500
Bromine Biocide and Biodispersant	Fed with Bleach	1500
Dehalogenation agent — Nalco1316 or equal	Neutralize oxidant from chlorine & Bromine	1500
Disodium phosphate	Boiler pH and scale control	750 lbs
Trisodium phosphate	Boiler pH and scale control	750 lbs
Scale inhibitors	Scale reduction in cooling water	200
Polymer	Water treatment coagulant	800
Aluminum sulfate	Water treatment coagulant	500

California Toxic chemical.
California air toxic hot spots chemical.

Source: Ex. 1, Table 3.4.10-1

TABLE 3.4.10-2

PASTORIA ENERGY FACILITY
SUMMARY OF NON-WATER TREATMENT CHEMICALS USAGE AND STORAGE

CHEMICAL	APPLICATION	STORAGE LOCATION	STORAGE OR USAGE QUANTITY	
			AVERAGE	MAXIMUM
Natural gas	Fuel for power plant	Piped into plant on as-needed basis	NA	NA
Aqueous Ammonia[(1)] (25% solution-Alt.)	Air pollution control system for nitrogen oxides	SCR System - Alternate	30,000 Gallons - Alternate	60,000 Gallons[(2)] - Alternate
Insulating oil (heat transfer)	Electric equipment	--	60,000 gal, Initial fill	Not stored on-site. Initial fill quantity is brought to site at the time of replacement
Lubricating oil	Rotating equipment	Throughout plant	7000 gal, Initial fill	Not stored on-site. Initial fill quantity is brought to site at the time of replacement
Carbon dioxide	Fire protection, generator purging	--	12,000 lbs Initial fill	NA
Hydrogen	Generator cooling	--	Initial fill	Initial fill
Hydrochloric acid	HRSG cleaning	--	Prior to startup 10,000 lbs	Not required
Propylene - Glycol	Inlet air cooling	--	250 Gallons	250 Gallons
Ammonium bifluoride	Inlet air cooling	--	Prior to startup 200 lbs	Not required
Various Detergents	Combustion turbine cleaning	--	Prior to startup 1000 lbs	Periodic short term storage 500 lbs
Diesel Fuel	Firewater Pump	Firewater Skid	100 gal for initial fill	Maintain full diesel tank

[1]California extremely hazardous material.
[2]Material would be transported to the site using 8,000-gallon tanker trucks (Alternate).

HAZARDOUS MATERIAL MANAGEMENT
APPENDIX A TABLE 1
Acute Ammonia Exposure Guidelines

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
IDLH[2]	NIOSH	Workplace standard used to identify appropriate respiratory protection.	300 ppm	30 min.	Exposure above this level requires the use of highly reliable respiratory protection and poses the risk of death, serious irreversible injury or impairment of the ability to escape.
IDLH/10[1]	EPA, NIOSH	Work place standard adjusted for general population factor of 10 for variation in sensitivity	30 ppm	30 min.	Protects nearly all segments of general population from irreversible effects
STEL[2]	NIOSH	Adult healthy male workers	35 ppm	15 min. 4 times per 8 hr day	No toxicity, including avoidance of irritation
EEGL[3]	NRC	Adult healthy workers, military personnel	100 ppm	Generally less than 60 min.	Significant irritation but no impact on personnel in performance of emergency work; no irreversible health effects in healthy adults. Emergency conditions one time exposure
STPEL[4]	NRC	Most members of general population	50 ppm 75 ppm 100 ppm	60 min. 30 min. 10 min.	Significant irritation but protect nearly all segments of general population from irreversible acute or late effects. One time accidental exposure
TWA[2]	NIOSH	Adult healthy male workers	25 ppm	8 hr.	No toxicity or irritation on continuous exposure for repeated 8 hr. work shifts

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
ERPG-2[5]	AIHA	Applicable only to emergency response planning for the general population (evacuation) (not intended as exposure criteria) (see preface attached)	200 ppm	60 min.	Exposures above this level entail** unacceptable risk of irreversible effects in healthy adult members of the general population (no safety margin)

1) (EPA 1987) 2) (NIOSH 1994) 3) (NRC 1985) 4) (NRC 1972) 5) (AIHA 1989)

The (NRC 1979), (WHO 1986), and (Henderson and Haggard 1943) all conclude that available data confirm the direct relationship to increases in effect with both increased exposure and increased exposure duration.

** The (NRC 1979) describes a study involving young animals which suggests greater sensitivity to acute exposure in young animals. The (WHO 1986) warns that the young, elderly, asthmatics, those with bronchitis and those that exercise should also be considered at increased risk based on their demonstrated greater susceptibility to other non-specific irritants.

E. WASTE MANAGEMENT

The project will generate hazardous and nonhazardous wastes during construction and operation. This section reviews the Applicant s waste management plans for reducing the risks and environmental impacts associated with the handling, storage, and disposal of project-related wastes.

Federal and state laws regulate the management of hazardous waste. Hazardous waste generators must obtain EPA identification numbers, and use only permitted treatment, storage, and disposal facilities. Registered hazardous waste transporters must handle the transfer of hazardous waste to disposal facilities.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Excavation

Applicant commissioned a Phase I Environmental Site Assessment (ESA) to determine the presence or likely presence of hazardous substances or petroleum products at the site, laydown area, or along the linear facility alignments. (Ex. 2.) The Phase I ESA identified several areas where soil may be impacted by petroleum hydrocarbons and pesticides, and recommended soil sampling in those locations. (Ex. 1,/5.14.1.2.) Due to the potential for soil contamination, Applicant modified the orientation of the project site and changed the location of the gas supply pipeline to avoid these areas. (Ex. 35, pp. 128-129; 9/18 RT 176-179.) The Phase I ESA also recommended soil sampling along the natural gas pipeline route when the exact routing is determined. (*Ibid.*) Condition **WASTE-9** requires the project owner to implement this Phase I ESA recommendation.

2. Construction

a. Nonhazardous

During construction, the primary waste stream will be solid, nonhazardous materials such as paper, wood, glass, scrap metal, plastics from packaging, waste lumber, insulation, and nonhazardous chemical containers. See, Applicant s Table 3.4.9-1, replicated below. PEF estimates that up to 1,000 tons of nonhazardous solid waste will be generated at the rate of 40 cubic yards per week. (Ex. 1,/5.14.2.1.) These wastes will be recycled, where practical, with the remainder removed on a regular basis by a certified waste handling contractor for disposal at a Class III (nonhazardous) landfill. (*Ibid.*)

Waste metal generated during construction includes steel from welding/cutting, packing materials, and empty chemical containers; aluminum wastes from packing materials; and electrical wiring. Metals that cannot be salvaged/recycled will be removed for disposal at a Class III landfill. (Ex. 1,/5.14.2.1.)

b. Hazardous Wastes

Applicant estimates that about 165 gallons of hazardous wastes such as used oil and grease, paint, used batteries, spent solvent, welding materials, and chemical cleaning solutions will be generated every 90 days. Applicant also expects about one cubic yard per week of empty hazardous chemical containers. All hazardous wastes generated during construction will be recycled or deposited at a licensed hazardous waste treatment or disposal facility. (Ex. 1,/5.14.2.3.2.) Table 3.4.9-1, lists the estimated amounts of the waste stream and proposed management methods.

In the event that contaminated soil is encountered during excavation or construction at the site and linear facilities, the Kern County Environmental

Health Department will be notified and the soil will be removed to a Class I (hazardous) landfill or other appropriate soil treatment facility. (*Id.*, at ⁄ 5.14.2.3.1.) Condition **WASTE-5** requires a soil sampling and contaminated soil disposal plan for the project site and linear facilities.

3. Operation

a. Nonhazardous

Nonhazardous waste generated during project operation includes trash, office wastes, empty containers, broken or used parts, used packaging and used filters. (Ex. 35, p. 130.) Applicant s Table 3.4.9-2, replicated below, lists the estimated amounts of nonhazardous waste and proposed management methods. Nonhazardous solid waste will be recycled or transported by a certified hauler to a Class III landfill.

b. Designated Waste

According to Staff, suspended solids from make-up water treatment, cooling tower basin sludge, and salt cake from wastewater treatment may be classified as designated wastes depending on their properties such as elevated levels of salts.[44] (Ex. 35, p. 130.) Designated wastes can be deposited at Class I or Class II disposal sites, or recycled appropriately. (*Ibid.*)

[44] Designated waste includes nonhazardous waste that contains pollutants, which under ambient environmental conditions at a waste management unit could be released in concentrations exceeding applicable water quality objectives. (Cal. Code of Regs., tit. 20,⁄20210).

TABLE 3.4.9-1
CONSTRUCTION WASTE STREAM

Waste Stream and Classification	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	On-site Treatment	Waste Management Method
Construction Waste Non-hazardous	Scrap wood, steel, glass plastic, paper	40 cu yd/wk	Intermittent	None	Dispose to landfill
Construction Waste Hazardous	Empty hazardous material containers	1 cu yd/wk	Intermittent	Store for < 90 days	Dispose to hazardous waste disposal facility
Construction Waste Hazardous	Solvents, used oils, paint, oily rags, adhesives	165 gallons	Every 90 days	Store for < 90 days	Dispose to hazardous waste disposal facility or recycle
HRSG and preboiler piping cleaning waste	Chelant type solution	100,000 gallons	One time event	None	Dispose to hazardous waste disposal facility or recycle
Hazardous Spent batteries	Lead acid, alkaline type	20 in 2 years	Intermittent	Store for < 90 days	Dispose to recycling facility
Hazardous Stormwater from construction area	Surface runoff (Water, inert material, dirt and concrete particles)	1500 gpd	Intermittent	None	Discharge to the existing evaporation pond
Non-hazardous Residual solids from evaporation pond	Dirt and concrete particles	50 cu yd	One time at end of construction	None	Excavate at end of construction and spread on site
Non-hazardous Sanitary waste	Portable Chemical Toilets Sanitary waste	200 gpd	Periodically pumped to tanker truck by licensed contractors	None	Ship to sanitary water treatment plant

TABLE 3.4.9-2

PASTORIA ENERGY FACILITY
SUMMARY OF OPERATION WASTE STREAMS AND MANAGEMENT METHODS

Waste Stream	Classification and Status	Origin and Composition	Estimated Amount	Estimated Frequency of Generation	Waste Management Method	
					On-Site	Off-Site
Used Hydraulic Fluid, Oils and Grease, and Oily Filters	Hazardous Recyclable	CTG, STG and other users of hydraulic actuators and lubricants	< 5 gpd	Intermittent	Store for < 90 days	Recycle
Used Air Filters	Nonhazardous	CTG	2000 Filters	Every 5 Years	None	Recycle
Spent batteries	Hazardous Recyclable	Lead Acid, Alkaline	5 per year	Intermittent	Store for< 90 days	Recycle
Spent SCR and CO Catalyst	Hazardous Recyclable	HRSG, Heavy metals	16,000 cu ft	Intermittent Once every 3 to 5 years	None	Recycle
Cooling Tower Basin Sludge	Nonhazardous	Cooling Tower	2 tons per year	Annually	None	Recycle to Compost or Dispose to nonhazardous waste disposal facility
Oily Rags	Nonhazardous	CTG, STG and other users of hydraulic actuators and lubricants	55 gallons per mouth	Intermittent	Store for < 90 days	Laundry at authorized facility
Oily Absorbent	Hazardous Recyclable	CTG, STG and other users of hydraulic actuators and lubricants	55 gallons per mouth	Intermittent	Store for < 90 days	Dispose to authorized waste disposal facility
Sanitary Wastewater	Nonhazardous	Rest Rooms, Waste Rooms, Sanitary Waste	1400 gpd	Continuous	Liquids disposed to on-site leaching field	Sludge disposed to sanitary waste disposal facility
Make-up water solids (filter cake)	Nonhazardous	Dirt, sand and Biological Solids	2 to 3 cu yds/day	Continuous	Media Filters	Recycle to Compost or Dispose to nonhazardous waste disposal facility
Salt Cake Zero Discharge Option	Nonhazardous	Naturally occurring salt compounds	2 to 4 cu yds/day	Continuous	None	Commercial sale or dispose to nonhazardous waste disposal facility

PEF proposes a wastewater treatment system resulting in zero liquid discharge or ZLD[45]. (Ex. 35, p. 131.) The ZLD system concentrates the dissolved and suspended constituents in wastewater into a solid salt cake with a moisture content of about 10-15 percent. PEF will produce between five and eight cubic yards of salt cake per day. (*Ibid*.)

Naturally occurring substances such as trace heavy metals present in the waters used for cooling will become concentrated in the salt cake product. Applicant estimated the concentrations of hazardous constituents to determine if the salt cake or intermediate process wastewaters would be considered hazardous. (Ex. 12.) According to Staff, the data indicated that chromium and selenium in the effluent from the brine concentrator may approach regulatory levels for hazardous wastes. (Ex. 35, p. 131.) To mitigate the potential for hazardous metals in these wastewater products, Conditions **WASTE-6, WASTE-7**, and **WASTE-8** require initial testing of cooling tower sludge, effluent from the brine concentrator, and the salt cake to determine the proper management method.

c. Hazardous Waste

Table 3.4.9-2 shows the amounts of hazardous wastes that will be routinely generated during project operation and the planned management methods for disposal. Hazardous wastes include spent SCR and CO catalyst in the amount of 16,000 cubic feet every 3 to 4 years, which will be returned to the manufacturer for metals reclamation or disposal. About 1800 gallons of used oil and filters, used cleaning solvents, used oil absorbent, and hydraulic fluids will be collected for recycling by a licensed waste oil recycler or deposited at a Class III landfill. (Ex. 1,／5.14.2.3.3.) In

[45] The cooling water blowdown, demineralizer regeneration backwash, and oil-water separator are directed to a holding tank. These combined wastewaters then flow to an evaporator-condenser (brine concentrator) that uses heat and/or compression to recover 98 percent of the wastewater as high quality condensate. The concentrated brine product is discharged to a storage tank and then to a brine crystallizer, which produces salt cake. (9/18 RT 26-31; Ex. 44; Ex. 35, p. 131.)

addition, periodic turbine cleaning will generate contaminated wash water that will be collected and removed by the licensed contractor conducting the cleaning. (*Ibid.*)

4. Potential Impacts on Waste Disposal Facilities

Staff s **Waste** Table 1, replicated below, shows five Kern County Class III landfills that accept nonhazardous wastes. Three of these landfills could accept project wastes. The landfill closest to the site, Arvin, will close in 2001 and Lost Hills will be closed until 2022.

Table 1
Class III Nonhazardous Waste Disposal Sites

Landfill	Remaining Capacity (tons)	Anticipated Year of Closure
Arvin	289,000	2001
Bena	21,838,000	2033
Taft	3,861,000	2145
Shafter-Wasco	3,692,000	2022
Lost Hills	N/A	Closed until 2022
Total (excluding Arvin and Lost Hills)	29,391,000	_____

Source: Ex. 36, p. 1.

Most of the nonhazardous waste produced during project construction and operation will be recyclable. Even discounting the effects of recycling, project wastes will amount to less than a few hundredths of one percent of the remaining capacity of the smallest landfill, Shafter-Wasco. Staff therefore concluded that disposal of project-related wastes will not have any significant impacts on the lives or capacities of the Bena, Taft, or Shafter-Wasco landfills. (Ex. 36, pp. 1-2.)

Three Class I landfills in California, at Kettleman Hills in King s County, Buttonwillow in Kern County (also licensed as Class II for designated waste), and Westmoreland in Imperial County, have permits to accept hazardous waste. In total, there is in excess of 20 million cubic yards of remaining hazardous waste disposal capacity at these landfills, with remaining operating lifetimes in excess of 50 years. Staff concluded that the

amount of project-related hazardous waste is less than one percent of existing capacity and will not significantly impact the capacity or remaining life of any of California s Class I landfills. (Ex. 35, p. 132.)

Staff also reviewed whether wastes from PEF added to wastes generated by the other Kern County power plant projects (Sunrise, Elk Hills) would result in cumulative impacts. The types and quantities of waste will be similar, and most will be recycled. Thus, the combined amount of waste from all the projects would result in an insignificant impact of less than one percent of available landfill capacity. (Ex. 35, p. 132-133.)

Intervenor Audubon Society challenged Staff s conclusions on cumulative impacts, disputed the availability of Class III landfill capacity, and questioned the choice of the Class I landfill in Kern County. (9/18 RT 169-174; Intervenor s Responding Brief, dated 9/29/00.) However, Intervenor did not introduce any evidence to rebut a finding of no significant impacts. Condition **WASTE-3** requires the project owner to submit waste management plans to the Commission prior to implementation. Condition **WASTE-2** requires the project owner to notify the Commission of any enforcement action taken against any waste hauler or disposal facility.

FINDINGS AND CONCLUSIONS

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

1. The project will generate hazardous and nonhazardous wastes during construction and operation.

2. Applicant s Phase I Environmental Site Assessment identified areas at the site and along the linear facility routes that may contain contaminated soils.

3. The project owner will implement a soil sampling and remediation plan if contaminated soils are uncovered during excavation and construction.

4. Under PEF s waste management plan, the project will recycle hazardous and nonhazardous wastes to the extent possible and in compliance with applicable law.

5. Hazardous wastes that cannot be recycled, will be transported by registered hazardous waste transporters to an appropriate Class I landfill.

6. Nonhazardous wastes that cannot be recycled will be deposited at Class III landfills in Kern County.

7. Cooling tower sludge, effluent from the brine concentrator, and the salt cake product from the zero liquid discharge (ZLD) process for treatment of wastewater will be tested to determine the proper management method.

8. Disposal of project wastes will not result in any significant direct or cumulative impacts to existing waste disposal facilities.

9. The Conditions of Certification, below, and the waste management practices described in the evidentiary record reduce potential impacts to insignificant levels and ensure that project wastes are handled in an environmentally safe manner.

The Commission therefore concludes that the management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portion of Appendix A of this Decision.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

Verification: The project owner shall keep its copy of the identification number on file at the project site and notify the CPM via the monthly compliance report of its receipt.

WASTE-2 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 that the owner contracts with.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action.

WASTE-3 Prior to the start of both construction and operation, the project owner shall prepare and submit to the CPM, for review and comment, a waste management plan for all wastes generated during construction and operation of the facility, respectively. The plans shall contain, at a minimum, the following:

- A description of all expected waste streams, including projections of frequency and hazard classifications; and
- Methods of managing each waste, including 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 60 days prior to the start of rough grading, the project owner shall submit the construction waste management plan to the CPM for review. The operation waste management plan shall be submitted no less than 60 days prior to the start of project operation. The project owner shall submit any required revisions within 30 days of notification by the CPM (or mutually agreed upon date). In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to planned management methods.

WASTE-4 The project owner shall have an environmental professional available for consultation during soil excavation and grading activities. The environmental professional shall meet the qualifications of such as defined by the American Society for Testing and Materials designation E 1527-97 Standard Practice for Phase I Environmental Site Assessments as evidenced by one of the following or similar credentials: (1) Certified Industrial Hygienist with experience in worker exposure monitoring, (2) Qualified Environmental Professional certification, (3) Registered Environmental Assessor II, or (4) Registered Professional Engineer with experience in remedial investigation and feasibility studies.

Verification: At least 30 days prior to the start of construction, the project owner shall submit the qualifications and experience of the environmental professional to the CPM for approval.

WASTE-5 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, or other signs, prior to any further construction activity at that location, the environmental professional 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 and CPM stating the recommended course of action. If, in the opinion of the environmental professional, significant remediation may be required, the project owner shall contact representatives of the Kern County Environmental Health Services Department and the Sacramento Field Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall notify the CPM in writing within 5 days of any reports filed by the environmental professional, and indicate if any substantive issues have been raised.

WASTE-6 Prior to removing any accumulated sludge from the cooling tower, the project owner shall test the sludge to determine the levels of metals and salts. The sludge shall be managed appropriately as a hazardous, designated, or nonhazardous waste according to the test results.

Verification: The project owner shall notify the CPM via the annual compliance report of the sludge test results, as well as the method of disposal.

WASTE-7 The project owner shall test representative samples of the effluent from the brine concentrator for the presence of hazardous levels of metals. If test results indicate that the effluent is classified as hazardous, then the project owner shall apply to DTSC for a recycling exemption for hazardous waste treatment as provided for in Health and Safety Code section 25132.2(c)(2).

Verification: Within 60 days of beginning commercial operation, the project owner shall notify the CPM of the test results for the brine concentrator effluent. If applicable, the project owner shall include a copy of the DTSC application, and shall notify the CPM upon receipt of the exemption from DTSC.

WASTE-8 The project owner shall test the salt cake product from the crystallizer for the presence of hazardous levels of metals. If levels are below ten times the Soluble Threshold Level Concentration as listed in Title 22, California Code of Regulations, section 66261.24, then future testing is not required unless there is a substantial change in the wastewater treatment process. If not classified as a hazardous waste, the project owner shall manage the salt

cake product appropriately as a nonhazardous or designated waste unless it is sold as a commercial product.

Verification: As soon as practicable but no later than 30 days after the initial generation of salt cake, the project owner shall notify the CPM of the test results and the planned disposal method.

WASTE-9 As soon as practical after exact routing of the natural gas supply pipeline is determined, the project owner shall submit a soil sampling plan to the CPM for review and approval. The plan shall address the applicable portions of the Phase I ESA recommendations to conduct sampling along the natural gas pipeline routes where stained soil and standing oil were observed within the Tejon Hills oil field and within the northern right of way of Sebastian Road adjacent to the fungicide and fertilizer-containing aboveground storage tanks.

Verification: No less than 60 days prior to the start of natural gas supply pipeline construction, the project owner shall submit the sampling plan to the CPM for review and approval.

WASTE-10 The project owner shall not directly utilize any project-related wastes as soil amendment without obtaining prior approval from the Kern County Environmental Health Services Department (EHSD).

Verification: Prior to using any project-related waste as a soil amendment, the project owner shall notify the CPM in writing of approval from EHSD.

VII. ENVIRONMENTAL ASSESSMENT

As part of its statutory mandate, the Commission must analyze a project s potential effect upon various elements of the human and natural environments.

A. BIOLOGICAL RESOURCES

Our examination of biological resources focuses upon impacts to state and federally listed species, species of special concern, wetlands, and other areas of critical biological interest in the project vicinity. Here we summarize the potential biological resources impacts due to the project and its related facilities, and address the adequacy of mitigation measures necessary to reduce any identified impacts to less than significant levels.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed site is within the Elk Hills Oil and Gas Field, which is located in the southern San Joaquin Valley in southwestern Kern County. (Ex. 19A, Part II, p. 3.) The transmission line route alternatives and the pipeline routes (water, wastewater, and natural gas) are planned along existing transmission lines, pipelines, and roads; all project facilities and routes will be located almost entirely within the Elk Hills Oil and Gas Field. (*Id.,* at p .5; 3/9 RT 18:9-17.)

Biotic communities at Elk Hills are composed primarily of species highly adapted for arid environments. (Ex. 19A, Part II, p. 3.) **Biological Resources Table 1** below shows special status species identified by surveys to occur within the project site and linear facilities.

Special Status Species Found Within the Proposed Project Area

Common Name	Scientific Name	Status[1] Federal/State/CNPS	Observed During Surveys
Plants			
Heartscale	Atriplex cordulata	SC/--/1B	Yes
Crownscale	Atriplex coronata	--/--/4	Yes
Lost Hills crownscale	Atriplex vallicola	SC/--/1B	Yes
Gypsum-loving larkspur	Delphinium gypsophilum spp. Gypsophilum	--/--/4	Yes
Recurved delphinium	Delphinium recurvatum	SC/--/1B	Yes
Hoover s eriastrum	Eriastrum hooveri	T/--/4	Yes
Cottony buckwheat	Erigonum gossypinum	--/--/4	
Temblor buckwheat	Erigonum temblorense	SC/--/1B	
Tejon poppy	Eschscholzia lemmonii ssp. Kernensis	--/--/4	Yes
Oil nest straw	Stylocline citroleum	SC/--/1B	Yes
San Joaquin bluecurls	Trichostema ovatum	--/--/4	
Wildlife			
Mammals			
San Joaquin antelope squirrel	Ammospermophilus nelsoni	SC/T	Yes
Giant kangaroo rat	Dipodomys ingens	E/E	Yes
Short-nosed kangaroo rat	Diponomys nitratoides brevinasus	SC/CSC	Yes
Southern grasshopper mouse	Onychomys torridus ramona	SC/CSC	
San Joaquin pocket mouse	Perognathus inornatus	SC/CSC	Yes
Badger	Taxidea taxus	--/CSC	Yes
San Joaquin kit fox	Vulpes macrotis mutica	E/T	Yes
Birds			
Sharp-shinned hawk	Accipiter striatus	--/CSC	Yes
Tricolored blackbird	Agelaius tricolor	SC/CSC	
Golden eagle	Aquila chrysaetos	--/CSC	
Short-eared owl	Asio flammeus	--/CSC	Yes
Western burrowing owl	Athene cunicularia hypugea	SC/CSC	Yes
Red-tailed hawk	Buteo jamaicensis	--/--	Yes
Swainson s Hawk	Buteo swainsoni	T/CSC	
Northern harrier	Circus cyaneus	--/CSC	Yes
Horned lark	Eremophila alpestris actia	--/CSC	Yes
Merlin	Falco columbarius	--/CSC	
Prairie falcon	Falco mexicanus	--/CSC	Yes
Loggerhead shrike	Lanius ludovicianus	SC/CSC	Yes
LeConte s thrasher	Plegadis chihi	SC/CSC	Yes
Amphibians/Reptiles			
Southwestern pond turtle	Clemmys marmorata pallida	SC/CSC	
Blunt-nosed leopard lizard	Gambelia sila	E/E	Yes
San Joaquin coachwhip	Masticophis flagellum ruddocki	SC/CSC	Yes
California horned lizard	Phrynosoma coronatum frontale	T/T	

[1]Federal Status
E — Endangered
T — Threatened
SC — Species of Special Concern

State Status
E — Endangered
T — Threatened
CSC — California Species of Special Concern

CNPS
1B — rare, threatened, or endangered in California and elsewhere
4 — limited distribution — A watch list.

Some species are common and evenly distributed throughout the area, while others are less common and have irregular distributions. (Ex. 19A, Part II, p. 6.) Short-nosed kangaroo rats, kit foxes, and Hoover s eriastrum can be expected to occur throughout the project area. *(Ibid.)* Blunt-nosed leopard lizards and giant kangaroo rats inhabit areas with low topographic relief and sparse vegetation. *(Ibid.)* Populations fluctuate in response to weather patterns and land uses, and therefore, the numbers sighted from surveys can vary greatly from year to year. *(Ibid.)* In addition to species listed under each project component below, the following species were observed on numerous occasions along the survey corridors of the transmission line routes and water supply pipeline: loggerhead shrikes, great-horned owls, burrowing owls, and barn owls. (Ex. 19A, Part II, p. 6.) There were also a few sightings of bobcat, badger, and short-eared owls. *(Ibid.)*

The southern San Joaquin Valley has experienced severe declines in natural habitat since the early 1900 s. (Ex. 19A, Part II, p. 3.) The predominant vegetation type (98% of the Elk Hills) is valley saltbush scrub and non-native annual grass.[99] *(Ibid.)* Low elevation areas with alkali soils support a mixture of valley saltbush scrub and an alkali sacation assocation characterized by bush sweepweed. *(Ibid.)*

Extant habitats in the southern San Joaquin Valley generally occur as small, highly fragmented parcels. (Ex. 19A, Part II, p. 5.) Elk Hills, along with adjacent lands known as the Buena Vista Valley and the Lokern Natural Area, represents the largest contiguous area of extant habitat remaining in the southern San Joaquin Valley. *(Ibid.)* This block of habitat has been identified by U.S. Fish and Wildlife Service (USFWS) as crucial to the recovery or conservation of eleven species. *(Ibid.)* These are: Hoover s eriastrum, oil nest straw, Tejon poppy, blunt-nosed leopard lizard, giant kangaroo rat, short-nosed kangaroo rat, San Joaquin kit fox, San Joaquin woolly threats, San Joaquin antelope squirrel, Tulare grasshopper mouse, and San Joaquin LeConte s thrasher (scientific names provided in **Biological Resources Table 1**). Elk Hills is the only known location for the occurrence of oil nest straw. *(Ibid.)*

---

[99] Much of the Elk Hills is developed for oil and gas production, particularly in the lower elevations. (Ex. 19A, Part II, p. 3.) Unlike the nearby intensively developed Midway-Sunset oil field, the density of surface disturbance at Elk Hills is moderate in the flat areas to low in the hilly terrain. *(Ibid.)*

Several conservation areas and mitigation banks have been established or identified in the area immediately surrounding Elk Hills. (Ex. 19A, Part II, p. 5.) These include the Coles Levee Ecosystem Preserve, the Lokern Natural area, the Occidental of Elk Hills, Inc., Conservation Area, and the Buttonwillow Ecological Reserve. *(Ibid.)* Lands owned by the Bureau of Land Management (BLM) in the Lokern Natural Area are designated as an Area of Critical Environmental Concern. *(Ibid.)*

Before the federal government s sale of Elk Hills (formerly NPR-1) to~~the~~ OHEI, biological resources in the project area were extensively surveyed and documented for federal and state listed plant and animal species. (3/9 RT 18:18-19:1; Ex. 19, Part II, p. 5.)[100] The Department of Energy (DOE) performed the documentation under requirements set forth in three federal biological opinions. (Ex. 19, Part II, p. 5.)

Sale conditions included the transfer of a 1995 Biological Opinion which, among other things, required OEHI to place 7,075 acres of land as protected, undisturbed endangered species habitat. (Ex. 19A, Part II, pp. 5, 8.) This area was set aside to compensate for all *previous* permanent surface disturbances on the Elk Hills Oil and Gas Field. *(Ibid.)* The 1995 Biological Opinion predates by some four years the construction and operation of the proposed project. Even so, existing *disturbed* lands in the Elk Hills Oil and Gas Field have already been compensated for in the sale agreement between OEHI and USFWS.[101] *(Ibid.)*

---

[100] Applicant s wildlife biologist, Mr. Westley Rhodehamel, testified that these previous surveys were reviewed to assist the project to determine locations that would minimize impacts to biological resources. (3/9 RT 18:18-19:1.)

[101] It is understood that *disturbed lands* provide suitable habitat for some special status species such as the kit fox and Hoover s eriastrum. (Ex. 19A, Part II, pp. 7-8.) Because the compensation area provided in the OHEI purchase agreement is managed for the protection of the listed species within the Elk Hills Oil and Gas Field, no further mitigation for *disturbed lands* is required. *(Ibid.)*

1. Impacts

The proposed project will result in permanent loss of habitat from the footprints of the project components and temporary loss of habitat from construction activities. (Ex. 19, Part II, pp. 8-9; *see* **Biological Resources Table 2**, below.)

Staff s witness, Ms. Linda Spiegel, testified that loss of habitat from the project footprint is estimated to be around 15 acres for permanent displacement and around 39 to 50 acres for temporary displacement. (3/9 RT 36:16-18.) In terms of disturbances to conservation areas, 3.08 acres will be impacted permanently, and 8.09 acres temporarily disturbed. (Ex. 19A, Part II, p. 9.)

The Conservation Management Agreement/Declaration of Restrictions for the Elk Hills Conservation Area (CMA) requires a minimum of 7,075 acres to be protected for listed species. (Ex. 19A, Part II, p. 9.) The CMA also restricts the amount of surface disturbance to 10 percent per quarter section. *(Ibid.)* The CMA currently has 7,801 acres protected. *(Ibid.)*

Therefore, the proposed new 0.02 acres of permanent surface disturbance from the transmission line will not reduce the conservation area below minimum requirements.[102] (Ex. 19A, Part II, p. 9.) Likewise, anticipated new permanent surface disturbances (0.02 acres) and temporary surface disturbances (6.23 acres) from the transmission line (1B and 1B Variation) will not exceed the 10 percent limitation (16 acres per quarter section).[103] (Ex. 19A, Part II, pp. 9-10.)

---

[102] The project s proposed injection wells and wastewater pipeline are located outside of the CMA. (Ex. 19A, Part II, p. 10.) The water supply line will cross 0.7 miles of land within the Coles Levee Preserve. *(Ibid.)* This area is owned by the CDFG and Applicant will need to obtain a right-of-way agreement. *(Ibid.)* Lands temporarily disturbed by the construction of the water line will require compensation at a ratio of 1:1, if not already allocated as preserve lands, or at a ratio of 2.1:1, if already allocated as preserve lands. *(Ibid.)*

[103] According to Applicant, maintenance activities for the transmission lines will be infrequent and only result in temporary disturbance. Access roads will not be maintained or graded after construction and the construction laydown areas, pullsites, and access spurs are included in the surface disturbance estimates in Biological Resources Table 2. *(Ibid.)*

BIOLOGICAL RESOURCES Table 2
Permanent and Temporary Surface Disturbance (acres)[104]

	~~Project Requirements~~[2]	~~Existing Surface Disturbance~~[3]	~~New Permanent Surface Disturbance~~[4]	~~New Temporary Surface Disturbance~~[5]
	Project Requirements	Existing Surface Disturbance	New Permanent Surface Disturbance	New Temporary Surface Disturbance
Power Plant, Laydown, Access Rd	17.0	14.12	2.88	0.0
Gas Pipeline	1.80	1.80	0.0	0.07
Water Disposal Line	15.0	14.99	0.01	8.63
Water Source Line	36.5	24.88	11.67	20.52
Transmission Line				
Route 1A	1.70	0.01	1.69	14.87
Route 1B	0.1	0.04	0.06	9.93
Variation 1B			0.04	22.61
Totals:				
Route 1A	72.0	55.75	16.25	44.09
Route 1B	70.4	55.78	14.62	39.15
~~Route 1B Variation~~	~~NA~~[6]	~~NA~~	~~14.60~~	~~51.83~~
Route 1B Variation	NA	NA	14.60	51.83

Source: (Ex. 19A, Part II, p. 9.)

~~According to Applicant, maintenance activities for the transmission lines will be infrequent and result in only temporary disturbance. (Ex. 19A, Part II, p. 10.) Access roads will not be maintained or graded after construction and the construction laydown areas, pullsites, and access spurs are included in the surface disturbance estimates in **Biological Resources Table 2**. *(Ibid.)*~~

Because many wildlife species use dens or ~~borrows~~burrows for shelter or to escape from potential harm, construction activity surface disturbances may cause them to be taken inadvertently leading to species mortality. (Ex. 19A, Part II, pp. 10.) Wildlife may also be trapped in open trenches or hit by construction vehicles, plants located in construction routes may be destroyed, and bird mortality may occur from collisions with transmission lines. *(Ibid.)*

---

[104] To determine acres of disturbance, Applicant assumed a 40-foot construction corridor along all linear facilities. Table 2 provides a summary of project-related and previous surface disturbances. Table 2 figures are based on a 12 acre power site; 5 acre laydown and access road; a gas pipeline length of 640 feet, 10,000 sq. ft. per power pole (including an area required for 100 sq. ft. per pole and equipment parking), line pulling, and tensioning; 20-ft access road width, where necessary, to pole sites; and, 54 poles for line 1A, 26 poles for line 1B, and 23 poles for Variation B (not including poles placed in non-natural habitat).

Numerous occurrences of sensitive biological resources were found within the project s facilities survey corridors, particularly the linear facilities. (3/9 RT 18:18-20:4; Ex. 19A, Part II, p. 10.) These occurrences were documented within 1,100-foot survey corridors surrounding the centerlines of the transmission line routes and 500-foot survey corridors surrounding the centerlines of the pipeline routes. *(Ibid.)* Species directly impacted by project construction would be those with habitat within the construction corridors: kit fox dens, blunt-nosed leopard lizard burrows, and stands of Hoover s eriastrum. *(Ibid.; see* **Biological Resources Table 3** below.).

BIOLOGICAL RESOURCES Table 3
Sensitive Species Observed Within the Construction Corridors

Linear Feature	Corridor Width	Potential Kit Fox Dens	Known Kit Fox Dens	Hoover s Eriastrum	Blunt-nosed Leopard Lizard
Plant Site	17 acres	3	0	0	0
Water Supply	40 ft	22	3	24	0
Wastewater	40 ft	4	0	3	0
Transmission Line					
Route 1A	100 ft	10	0	42	0
Route 1B	100 ft	4	0	8	0
Route 1B Var.	100 ft	3	0	7	0

Source: (Ex. 19A, Part II, p. 11.)

Staff believes that the information provided by surveys conducted to date is sufficient to determine potential occurrences of all sensitive species. (Ex. 19A, Part II, p. 11.) Preconstruction surveys as close in time to the beginning of construction as possible, however, are routinely used by all resource agencies to identify more precisely locations of:

- sensitive species; and
- avoidance areas. *(Ibid.)*

For example, Staff believes there is an underestimate of potential blunt-nosed leopard lizard (BNLL) occurrences along the linear facilities because of seasonal and other prevailing conditions during surveys for biological resources.[105] (Ex. 19A, Part II, p. 11.) *(Ibid.)* Unusually cool temperatures during this time may have reduced BNLL activity as only three BNLL were observed (one along the transmission line Route 1A and two along the water supply route). *(Ibid.)*

[105] Surveys for BNLL were conducted during~~the~~ April 1999, and Transmission line route Variation 1B surveys were conducted in early September. (Ex. 19A, Part II, p. 11.) BNLL may be inadvertently taken in their burrows by construction activities, particularly during their inactivity period when temperatures are below 75¡F and above 95¡F. *(Ibid.)*

Accordingly, Applicant has stated that additional surveys will be conducted to determine BNLL occurrences; surveys will follow California Department of Fish and Game (CDFG) protocol. (3/9 RT 16:9-17:5; Ex. 19A, Part II, p. 7.) Mr. Rhodehamel testified that he believed Applicant would conduct preconstruction spring surveys for Transmission Line Route 1B, and confirmatory surveys in the March-May timeframe. (3/9 RT 16:17-5; 18:3-6.)

Power plant emissions will arise from water for the cooling towers. (Ex. 19A, Part II, p. 11.) Shown in Table 4 below are water quality characteristics of the:

- source water;
- cooling tower blowdown; and
- annual deposition rates from the cooling tower drift on surrounding vegetation. *(Ibid.; see* **Biological Resources Table 4.**)

Deposition rates of the inorganic constituents (fluoride, arsenic, iron, boron, and silica) are well below levels found typically in native soils. (Ex. 19A, Part II, p. 11.) Salt deposition rates are well below levels known to cause stress to salt-sensitive plants species (agricultural crop species). *(Ibid.)* The dominant species found on Elk Hills and adjacent lands is Atriplex, which is alkaline tolerant. *(Ibid.)* Therefore, no significant impact to vegetation from cooling tower drift is expected. *(Ibid.)*

BIOLOGICAL RESOURCES Table 4
Water Quality Characteristics and Annual Deposition Rate

Parameter	WKWD (Source) (mg/l)	Cooling Tower Blowdown (mg/l)	Annual Deposition Rate ($g/m^2/yr$)
Total Dissolved Solids	196.0	1,241.1	0.00710
Calcium	22.5	97.1	0.00082
Magnesium	1.4	4.1	0.00005
Sodium	35.9	336.5	0.00130
Potassium	0.8	14.2	0.00003
Bicarbonate	117.0	100.0	0.00424
Sulfate	21.5	285.6	0.00078
Chloride	19.8	257	0.00072
Nitrate	<2.0		<0.00007
Fluoride	0.0003	0.0018	0.00001
Arsenic	0.0048	0.030	1.7×10^{-7}
Iron	<0.1	<0.63	$<3.62 \times 10^{-6}$
Boron	0.137	0.86	4.96×10^{-6}
Silica	0.0215	0.135	7.79×10^{-7}

Source: (Ex. 19A, Part II, p. 12.)

2. Cumulative Impacts[106]

The proposed project is to be built in an area of southwestern Kern County that has experienced extensive and continuing energy development. (Ex. 19A, Part II, p. 12.) There is the potential for at least three additional power plants (La Paloma, Midway-Sunset, and Sunrise), to be built in the region in the near future. *(Ibid.)* These developments have the potential to impact sensitive species and their habitats. *(Ibid.)* As we noted earlier, habitat loss in southwestern Kern County is an ongoing regional concern of CDFG, BLM, USFWS, and the Energy Commission. (Ex. 19A, Part II, p. 12.) With the exception of the Elk Hills/Buena Vista Valley/Lokern Natural Area complex, most remaining habitat in the area occurs as small and highly fragmented parcels. *(Ibid.)*

The proposed project has been located to minimize habitat loss. (Ex. 19A, Part II, p. 12.) The plant site access road and laydown area will require 17 acres, of which 14 acres are disturbed. *(Ibid.)* The gas pipeline and wastewater pipeline routes follow existing roads. *(Ibid.)* The water supply route will be above ground for 5.7 of 9.8 miles and follow existing roads. *(Ibid.)* The pumping station and injection wells are located in disturbed habitats. *(Ibid.)* The transmission lines will mainly require temporary roads for construction. *(Ibid.)*

In southwestern Kern County, CDFG and the USFWS look for habitat compensation when habitat losses are anticipated for all development projects. (Ex. 19A, Part II, p. 12.) Compensation areas consisting of high quality listed species habitat has been identified and prioritized by their importance towards species recovery needs. *(Ibid.)* On-going efforts by CDFG, USFWS, BLM, Energy Commission, private industry and the Center for Natural Lands Management (CNLM) have established several parcels of protected habitat in the Lokern Natural Area. *(Ibid.)* The goal of each stakeholder is to secure and protect as much habitat in this area as possible to keep this large contiguous area of undeveloped land intact. (Ex. 19A, Part II, pp. 12-13.)

---

[106] The CEQA Guidelines define cumulative impacts as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. (14 Cal. Code of Regs.,／15355.)

Energy Commission biology staff are encouraging applicants for power plant certification in Kern County to direct off-site compensation to lands in the Lokern Natural Area. Collectively, the compensation lands could result in the protection of larger-sized parcels than if compensated independently into several smaller parcels. (Ex. 19A, Part II, p. 13.) The ratio of lands compensated to lands disturbed range from 1:1 to 4:1, depending on the nature of disturbance and current use of disturbed lands. *(Ibid.)* Therefore, the total acres of land set aside for species protection is greater than the total acres of land lost or disturbed by development. *(Ibid.)* To reduce Applicant s potential cumulative impacts, lands needed to offset habitat loss will need to be purchased and protected in perpetuity prior to any surface disturbance. (3/9 RT 19:22:20-4.)

3. Mitigation

Applicant has developed a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to avoid or reduce impacts to biological resources. (3/9 RT 17:6-18-2; Ex 35.). A final BRMIMP will be provided prior to the start of any construction activities. (3/9 RT 19:22:20-10; Ex. 19, Part II, p. 13.) Applicant s proposed mitigation measures are as follows:

- Avoid sensitive resources to the extent practicable;
- Design transmission lines to reduce risk of avian electrocution;
- Implement a worker environmental awareness-training program;
- Conduct pre-construction surveys;
- Establish buffer/avoidance zones around sensitive resources;
- Excavate kit fox dens and giant kangaroo rat burrows that will not be avoided;
- Identify and mark construction area boundaries;
- Restrict project-related vehicle traffic to established roads, designated temporary access roads, and parking areas;
- Provide a qualified biologist on site to monitor construction activities;
- Confine parking and equipment storage to laydown areas, cap pipes (4-inch or greater diameter) not in use, and visually inspect pipes for wildlife before use;
- Limit construction activities along pipelines and transmission lines to day hours;
- Cover and/or provide escape ramps to open trenches more than 2-feet deep;
- Conserve 4 inches of topsoil in temporary construction areas. Re-contour and spread topsoil over all areas temporarily disturbed by construction activities;

- Comply with mitigation measures specified in ~~existing~~legal agreements between USFWS and CDFG;
- Dispose trash in closed containers and prohibit feeding wildlife;
- Prohibit domestic pets on site;
- Notify agencies if a species of concern is injured or killed;
- Submit a post construction compliance report 60-days after completion of the project; and
- Acquire compensation lands or credits for habitat disturbance. (Ex. 19, Part II, p. 13-14.)

To determine habitat compensation, Staff applied the following compensation ratios (provided by USFWS) to determine the amount necessary to compensate for temporary and permanent loss of habitat from project construction:

- 4 acres of habitat for every 1 acre of permanent disturbance to conserved lands.
- 3 acres of habitat for every 1 acre of permanent disturbance to other lands.
- 2.1 acres of habitat for every 1 acre of temporary disturbance to conserved lands.
- 1.1 acres of habitat for every 1 acre of temporary disturbance to other lands. (Ex. 19, Part II, p. 14.)

Applicant provided information to date demonstrates that a total of 98.095-111.98-habitat-acres will have to be set aside prior to construction of the proposed project. (Ex. 19, Part II, p. 14; *see* **Biological Resources Table 5** below.). In addition to purchasing habitat, Applicant will be required to provide funds necessary for administration and long-term management of the compensatory habitat. (*Id.* at p 15.)

CNLM recent cost estimates for land purchase and management in Kern County are as follows:

- $1,200 per acre ($625 for land purchase, + $170 for administrative costs, + $405 for an endowment; and
- $117,714 to $134,380 total costs for compensation depending on the route chosen. (Ex. 19, Part II, p.14.)

~~///~~

~~///~~

~~///~~

BIOLOGICAL RESOURCES Table 5
Compensation Land (acres) Required From Project

	Permanent Disturbance	Compen-sation Ratio	Acres Required	Temp. Disturb.	Compen -sation Ratio	Acres Required	Total Acres Required
Route 1A							
Other	13.19	3:1	39.57	42.23	1.1:1	46.45	
Preserved	3.06	4:1	12.24	1.86	2.1:1	3.906	
Total:			51.81			50.36	**102.17**
Route 1B							
Other	11.54	3:1	34.62	31.06	1.1:1	34.166	
Preserved	3.08	4:1	12.32	8.09	2.1:1	16.989	
Total:			46.94			51.155	**98.095**
Route 1B Var							
Other	11.52	3:1	34.56	43.74	1.1:1	48.114	
Preserved	3.08	4:1	12.32	8.09	2.1:1	16.989	
Total:			46.88			65.103	**111.983**

Source: (Ex. 19, Part II, p. 15.)

Staff recommends that Applicant provide funds to CNLM to be used to purchase the required acres of compensation habitat in the immediate vicinity of the CNLM Lokern Preserve (within the Lokern Natural Area of western Kern County). (Ex. 19, Part II, p. 15.)[107]

The blunt-nosed leopard lizard is a fully protected species (Fish and Game Code section 5050), and the Fish and Game Code prohibits take of any species with this classification. (Ex. 19, Part II, p. 15.) Accordingly, Applicant must employ all feasible means to avoid take during project construction and operation. *(Ibid.)* Avoidance measures (e.g., use of fiber optics to locate active burrows and barrier fencing to keep leopard lizards out of work areas) will be developed in consultation with the CDFG and USFWS and incorporated into the BRMIMP. *(Ibid.)*

[107] CNLM Lokern Preserve is located within the Lokern Natural Area just north of Elk Hills. (Ex. 19A, Part II, p. 15.) It contains the same types of habitat and sensitive species that will be impacted from construction of the proposed project. *(Ibid.)* The Lokern Preserve was originally established by The Nature Conservancy in the late 1980s; it is now owned and managed by CNLM, a private, non-profit organization dedicated to the protection and management of natural resources. *(Ibid.)*

The burrowing owl is protected by the Migratory Bird Treaty Act (Fish and Game Code 3513) since it migrates each year from areas that have cold winter temperatures. (Ex. 19A, Part II, p. 15.) Burrowing owls found in the project area of southwestern Kern County and other areas of California s Central Valley are mostly residents, but winter migrants may also be present during the winter. *(Ibid.)* To avoid impacting the burrowing owl, Applicant must implement avoidance measures during project construction and operation. *(Ibid.)* ~~implementation~~Implementation measures for final burrowing owl avoidance protocols will be developed in consultation with CDFG and USFWS and incorporated into the BRMIMP. *(Ibid.)*

FINDINGS AND CONCLUSIONS

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

1. Sensitive plants and animals exist in the project area.

2. Construction and operation of the Elk Hills Power Project, if not adequately mitigated, can create adverse impacts to the sensitive biological resources in the project area.

3. The mitigation measures contained in the Conditions of Certification set forth below were developed in cooperation and consultation with the United States Fish & Wildlife Service and with the California Department of Fish and Game.

4. The mitigation measures mentioned above are sufficient to allow the United States Fish & Wildlife Service to issue a formal "Biological Opinion" for the Elk Hills Power Project.

5. The Conditions of Certification assure that the Elk Hills Power Project will cause no significant unmitigated adverse impacts to biological resources in the project area.

6. The Conditions of Certification, if properly implemented, ensure that the Elk Hills Power Project will comply with applicable LORS, which are set forth in the pertinent portion of Appendix A of this Decision.

We therefore conclude that construction and operation of the Elk Hills Power Project will not create any significant direct, indirect, or cumulative adverse impacts to biological resources.

CONDITIONS OF CERTIFICATION

DESIGNATED BIOLOGIST

BIO-1 Construction site and/or ancillary facilities preparation (described as any ground disturbing activity other than Energy Commission approved geotechnical work) shall not begin until an Energy Commission Compliance Project Manager (CPM) approved Designated Biologist is available to be on site.

Protocol: The Designated Biologist must meet the following minimum qualifications:

1. A Bachelor s Degree in biological sciences, zoology, botany, ecology, or a closely related field and three years of experience in field biology;
2. One year of field experience with biological resources found in or near the project area; and
3. An ability to demonstrate to the satisfaction of the CPM the appropriate education and experience for the biological resources tasks that must be addressed during project construction and operation.

If the CPM determines the proposed Designated Biologist to be unacceptable, the project owner shall submit another individual s name and qualifications for consideration. If the approved Designated Biologist needs to be replaced, the project owner shall obtain approval of a new Designated Biologist by submitting to the CPM the name, qualifications, address, and telephone number of the proposed replacement. No disturbance will be allowed in any designated sensitive areas until the CPM approves a new Designated Biologist and the new biologist is on site.

Verification: At least sixty (60) days prior to the start of any ground disturbance activities, the project owner shall submit to the CPM for approval, the name, qualifications, address and telephone number of the individual selected by the project owner as the Designated Biologist. If a Designated Biologist is replaced, the information on the proposed replacement, as specified in the condition, must be submitted in writing at least ten working days prior to the termination or release of the preceding Designated Biologist.

BIO-2 The CPM approved Designated Biologist shall perform the following during project construction and operation:

1. Advise the project owner s Construction Manager on the implementation of the Biological Resource Conditions of Certification;
2. Supervise or conduct mitigation, monitoring and other biological resources compliance efforts, particularly in areas requiring avoidance or containing

sensitive biological resources, such as, wetlands and special status species; and

3. Notify the project owner and the CPM of any non-compliance with any Biological Resources Condition of Certification.

Verification: During project construction, the Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted along with the Monthly Compliance Reports to the CPM. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

BIO-3 The project owner s Construction Manager shall act on the advice of the Designated Biologist to ensure conformance with the Biological Resources Conditions of Certification.

Protocol: The project owner s Construction Manager shall halt, if necessary, all construction activities in areas specifically identified by the Designated Biologist as sensitive to assure that potential significant biological resource impacts are avoided.

The Designated Biologist shall:

1. Inform the project owner and the Construction Manager when to resume construction; and
2. Advise the CPM if any corrective actions are needed or have been instituted.

Verification: Within two (2) working days of a Designated Biologist notification of non-compliance with a Biological Resources condition of certification or a halt of construction, the project owner shall notify the CPM by telephone of the circumstances and actions being taken to resolve the problem or the non-compliance with a condition. For any necessary corrective action taken by the project owner, a determination of success or failure will be made by the CPM within five (5) 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.

BIOLOGICAL RESOURCES MITIGATION IMPLEMENTATION & MONITORING PLAN

BIO-4 The project owner shall submit to the CPM for review and approval a copy of the final Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) and, once approved, shall implement the measures identified in the plan.

Protocol: The final BRMIMP shall identify:

1. All Biological Resource Conditions included in the Commission s Final Decision;
2. All mitigation measures identified by EHP in Section 5.34 of the Application for ~~Certifications EHPP~~Certification (EHPP 1999a).
3. A list and a map of locations of all sensitive biological resources to be impacted, avoided, or mitigated by project construction and operation;
4. A list of all terms and conditions of the USFWS Biological Opinion and the CDFG Incidental Take Permit;
5. A detailed description of measures, Best Management Practices, and take avoidance measures that will be implemented to avoid and/or minimize impacts to sensitive species and reduce habitat disturbance;
6. All locations, on a map of suitable scale, of laydown areas and areas requiring temporary protection and avoidance during construction;
7. Aerial photographs (scale 1:200) of all areas to be disturbed during project construction activities - one set prior to site disturbance and one set after project construction. Include planned timing of aerial photography and a description of why times were chosen;
8. Duration for each type of monitoring and a description of monitoring methodologies and frequency;
9. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
10. All performance standards and remedial measures to be implemented if performance standards are not met;
11. A discussion of biological resource-related facility closure measures; and
12. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval.

Verification: At least forty-five (45) days prior to start of any project-related ground disturbance activities, the project owner shall provide the CPM with the final version of the BRMIMP for this project, and the CPM will determine the plans acceptability. The project owner shall notify the CPM five (5) working days before implementing any CPM approved modifications to the BRMIMP.

Within thirty (30) days after completion of project construction, the project owner shall provide to the CPM for review and approval, a written report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project s construction phase, and which mitigation and monitoring plan items are still outstanding.

WORKER ENVIRONMENTAL AWARENESS PROGRAM

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or related facilities during construction and operation, are informed about sensitive biological resources associated with the project.

Protocol: The Worker Environmental Awareness Program must:

1. Be developed by the Designated Biologist and consist of an on-site or training center presentation in which supporting written material is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures; and
5. Identify whom to contact if there are further comments and questions about the material discussed in the program.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Each participant in the on-site Worker Environmental Awareness Program shall sign a statement declaring that the individual understands and shall abide by the guidelines set forth in the program materials. The person administering the program shall also sign each statement.

Verification: At least sixty (60) days prior to the start of rough grading, the project owner shall provide copies of the Worker Environmental Awareness Program and all supporting written materials prepared by the Designated Biologist and the name and qualifications of the person(s) administering the program to the CPM for approval. The project owner shall state in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a keep record all persons who have completed the training to date. The signed statements for the construction phase shall be kept on file by the project owner and made available for examination by the CPM for a period of at least six (6) months after the start of commercial operation. During project operation, signed statements for active project operational personnel shall be kept on file for the duration of their employment and for six months after their termination.

CALIFORNIA DEPARTMENT OF FISH & GAME PERMITS

BIO-6 Prior to start of any ground disturbance activities, the project owner shall acquire an Incidental Take Permit from CDFG in accordance with Section 2081(b) of the California Fish and Game Code and implement the permit terms and conditions.

Verification: No less than fifteen (15) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the final CDFG Incidental Take Permit. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

BIO-7 Prior to start of any streambed disturbance activities, the project owner shall acquire a Streambed Alteration Agreement from CDFG in accordance with Section 1603 of the California Fish and Game Code and implement the permit terms and conditions.

Verification: No less than fifteen (15) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the final CDFG Streambed Alteration Agreement. Agreement terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

U. S. FISH & WILDLIFE SERVICE SECTION 7 BIOLOGICAL OPINION

BIO-8 Prior to the start of any ground disturbance activities, the project owner shall provide a final copy of the U.S. Fish and Wildlife Service Biological Opinion in accordance with Section 7 of the federal Endangered Species Act and incorporate the terms of the biological opinion into the Biological Resources Mitigation Implementation and Monitoring Plan. The project owner will implement the terms and conditions contained in the Biological Opinion.

Verification: At least thirty (30) days prior to the start of any project related ground disturbance activities, the project owner shall submit to the CPM a copy of the USFWS Biological Opinion. Permit terms and conditions will be incorporated into the Biological Resources Mitigation Implementation and Monitoring Plan.

HABITAT COMPENSATION

BIO-9 To compensate for impacts to sensitive species habitat, the project owner shall provide a non-refundable check for $163,000 to the Center for Natural Lands Management to purchase, administer, and manage in perpetuity compensatory lands near the project vicinity.

Protocol: Final determination of compensatory acres required will be determined by the Energy Commission after Elk Hills has determined the transmission line route. If any habitat disturbance occurs beyond the 136.5 acres estimated, the project owner shall provide additional funds to the Center for Natural Lands Management at a market price which is anticipated to be approximately $1,200 per acre. Additional disturbance shall be determined by aerial photos taken before and after construction at a scale of 1 = 200.

Verification: Within one (1) week of project certification, the project owner must provide written verification from CNLM to the CPM that the required compensation funds have been received by the Center for Natural Lands Management.

Within one hundred eighty (180) days after completion of project construction, the project owner shall provide the CPM aerial photographs taken after construction

and an analysis of the amount of any additional habitat disturbance beyond that identified in the Final Staff Assessment. The CPM will notify the project owner if any additional funds are required to compensate for any additional habitat disturbances at the adjusted market value at the time to acquire and manage habitat.

FACILITY CLOSURE

BIO-10 The project owner will incorporate into the planned permanent or unexpected permanent closure plan measures that address the local biological resources. The biological resource facility closure measures will also be incorporated into the EHPP project BRMIMP.

Protocol: The planned permanent or unexpected permanent closure plan will require the following biological resource-related mitigation measures:

1. Removal of transmission conductors and above ground pipelines when they are no longer used and useful; and
2. Measures to restore wildlife habitat to promote the re-establishment of native plant and wildlife species.
3. Any special measures that will be implemented in the Elk Hills Conservation Area.

Verification: At least twelve (12) months (or a mutually agreed upon time) prior to the commencement of closure activities, the project owner shall address all biological resource-related issues associated with facility closure in a Biological Resources Element. The Biological Resources Element will be incorporated into the Facility Closure Plan, and include a complete discussion of the local biological resources and proposed facility closure mitigation measures.

D. SOIL AND WATER RESOURCES

This portion of the Decision concentrates on the project's potential to induce erosion and sedimentation, adversely affect surface and groundwater supplies, degrade surface and groundwater quality, and increase the potential for flooding.[118]

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed plant, laydown area, and ancillary facilities will be located almost entirely within the Elk Hills Oil and Gas Field, with the exception of the proposed electric transmission facilities and a portion of the water supply pipeline. (Exs. 19A, Part II, p. 3; *see also* Ex. 1, Figure 5.10-1.) [119] The 9.8-mile water supply pipeline will extend from the plant site east to the West Kern Water District (WKWD) facilities near Tupman (Route 2). In addition, a 4.4-mile wastewater disposal pipeline is proposed to extend from the plant heading south generally paralleling Elk Hills Road (Route 3), terminating at new Class 1 injection wells. (Exs. 19A, Part II, pp. 3, 5; 1, Figure 5.10-1.)

///

///

---

[118] Accelerated wind and water induced erosion may result from earth moving activities associated with construction of the Elk Hills Power Project. (Ex. 19A, Part II, p. 7.) Removal of the vegetative cover and alteration of the soil structure leaves soil particles vulnerable to detachment and erosion. *(Ibid.)* In an arid environment such as the western San Joaquin Valley, intense rainfall can greatly enhance the potential for erosion. *(Ibid.)* Grading activities may redirect runoff into vulnerable areas, and construction of linear facilities across drainages can elevate erosion potential. *(Ibid.)*

[119] See also discussion under Project Description.

Soils

Generally, the Elk Hills are characterized by a series of rounded, smooth sloped hills, extending from the Temblor Range to the west. (Ex. 19A, Part II, p. 3.) Soils found at the powerplant site and laydown area belong entirely to the Kimberlina-Urban Land Complex (50% Kimberlina and 35% Urban Land). (Ex. 19A, Part II, p. 3, *see* **Soil & Water Table 1** below for a description of soil units affected by the project.)[120] Many different soil units were identified for the various linear routes, including Kimberlina Sandy Loam, Torriorthents, Elkhills Sandy Loam, etc. (3/9 RT 73:14-74:12; Ex. 19A, Part II, p. 3.) In general, the soils along the linear routes are characterized as sandy loams with about 5-20 percent clay. (3/9 RT 73:14-19; Ex. 19A, Part II, p. 4.)

The sensitivity of the soils affected by the proposed project, that would be subject to water and wind erosion, varies from low to high. (Ex. 19A, Part II, p. 7.) The soils are moderately susceptible to sheet and rill erosion and have low to moderate wind erosion potential. *(Id., pp. 7-8.)* Once the protective cover of vegetation is removed and the structure of the surface soil has been altered, however, all of these soils can be highly vulnerable to erosion.[121]

Site preparation will include the removal of existing tanks and other equipment, and the site will be cut and filled to provide a level area for the powerplant at an elevation of 1,330 feet above mean sea level. (Ex. 19A, Part II, p. 8.) Only about 3 acres of the powerplant site are vegetated. *(Ibid.)* Approximately 60,000 cubic yards of material will be excavated from portions of the site and compacted in

---

[120] The Department of Water Resources (DWR) identified the 25-year recurrence, 24-hour duration storm event to be 4.7 inches of rain, and evaporation rates in the project vicinity at more than 62 inches per year. Based on average rainfall data, most of the precipitation in the area occurs November through May. (Ex. 19A, Part II, p. 3.)

[121] **Biological Resources Table 2** shows estimated permanent and temporary disturbances resulting from construction and operation of the Elk Hills project. (See **Biological Resources** section, *infra*.)

other portions of the site to achieve the finished grade. *(Ibid.)* Material to be used for compaction will be stockpiled; imported soils will be unnecessary. *(Ibid.)*

\\\

\\\

\\\

SOIL & WATER RESOURCES Table 1
Soil Descriptions and Properties

Soil Name	% Slope	Erosion Hazard		Permeability	Project Elements
		Water	**Wind**		
Cajon Sandy Loam	2 — 5	Slight	Moderate	Moderately rapid to rapid	Transmission Line
Elkhills Sandy Loam	9 — 60	Moderate to High	Low	Moderately rapid	Transmission Line, Water Supply Pipeline, Wastewater Pipeline, Natural Gas Line
Elkhills Complex	9 — 50	Moderate to High	Low	Moderately rapid	Transmission Line, Wastewater Pipeline
Garces Silt Loam	0 — 2	Slight		Very slow	Transmission Line
Kimberlina Sandy Loam	0 — 9	Slight to Moderate	Low	Moderately rapid	Transmission Line, Water Supply Pipeline, Wastewater Pipeline
Kimberlina-Cajon, occasionally flooded-Riverwash Complex	0 — 5	Moderate	Low	Moderately rapid	Transmission Line, Wastewater Pipeline
Kimberlina-Urban Land Complex	0 — 5	Slight	Low	Moderately rapid	Power Plant Site, Construction Laydown Area, Transmission Line, Wastewater Pipeline, Natural Gas Line
Torriorthents, thick	9 — 50	Moderate to High	Low to Moderate	Moderate	Water Supply Pipeline, Wastewater Pipeline
Torriorthents, thick-Elkhills Complex	9 — 30	Moderate to High	Low	Moderately slow	Transmission Line, Water Supply Pipeline, Wastewater Pipeline
Torriorthents, thick-Torriorthents, thin Complex	15 — 60	Moderate to High	Low	Moderately slow	Transmission Line, Water Supply Pipeline, Wastewater Pipeline
Torriorthents, thick-Torriorthents, very thin, eroded Complex	15 — 30	Moderate	Moderate	Moderately slow	Water Supply Pipeline
Buttonwillow Clay	0 — 2	Moderate	Low	Slow to Moderately rapid	Transmission Line
Torriorthents, thick-Elkhills- Torriorthents, thin, eroded Complex	30 — 60	High	Moderate	Moderately slow	Transmission Line
Torriorthents, thick-Torriorthents, thin- and very thin, eroded Complex	30 — 60	High	Low	Moderately slow	Transmission Line, Water Supply Pipeline
Torriorthents, stratified, eroded-Elkhills complex	9 — 50	High		Moderate to slow	Water Supply Pipeline
Lokern Clay	0 — 2	Moderate	Low	Very low	Transmission Line

Source: Ex. 19A, Part II, p. 7.

Material unsuitable for compaction or contaminated materials will be disposed in compliance with all applicable requirements (Ex. 19A, Part II, p. 8; *see* **Waste Management** section, *supra*) Some vegetation removal and earth moving activities will likely be needed for the 5-acre laydown area. *(Ibid.)* The entire plant site will be paved, and the graded surface will have a mild slope of 2 percent. *(Ibid.)* Surface runoff will flow northerly from the project site to North Elk Hills Tributary No. 6. *(Ibid.)*

Soil disturbances, both temporary and permanent, will occur as a result of constructing and operating the proposed new linear facilities. (Ex. 19, Part II, p. 8.) Water will be delivered to the powerplant via Route 2, a 16-inch water supply pipeline. *(Ibid.)* Portions of the new supply line will be underground (4.2 miles) with approximately 36 inches of ground cover. *(Ibid.)* The above-ground portion of Route 2 will traverse primarily hilly, naturally vegetated terrain. *(Ibid.)*

Route 3, the new 4.4-mile wastewater pipeline, will be above-ground, traversing hilly, naturally vegetated terrain. (Ex. 19A, Part II, p. 8.) Both Routes 2 and 3 would be constructed following existing pipelines along their entire length. Soil disturbance associated with construction and maintenance of these pipelines is expected to be minimal because existing roads can be used. *(Ibid.)* Route 4, the 0.5 mile natural gas supply line, will be constructed entirely above-ground with a corridor approximately 40 feet wide (or 4.8 acres). The pipeline will travel along an existing pipeline route. *(Ibid.)*

Applicant has proposed three alternate transmission line routes, Routes 1A, 1B, and Route 1B Variation.[122] (Ex. 19A, Part II, p. 8.) A temporary, 100-foot wide construction right-of-way will be required along the transmission routes. *(Ibid.)* Transmission line routes are proposed along existing utility corridors and access roads. *(Ibid.)* Some road spurs will be needed to allow access to the routes.

---

[122] Route 1B Variation generally follows the contours of Route 1B. (Ex. 19, p. 14.) For reasons of flexibility, Applicant desires certification of all three transmission line options. *(Ibid.)*

(Ibid.) Construction of Route 1A is expected to result in land disturbance of approximately 40 acres (this includes tensioning and pull sites). Route 1B, and 1B Variation, are expected to impact approximately 29 acres during construction *(Ibid.)*. Each of the bases needed to support the transmission poles will permanently displace 100 square feet of soil (54 supports for Route 1A and 51 for Route 1B.) *(Ibid.)*

During project operation, wind and water action can continue to erode unprotected surfaces. (Ex. 19A, Part II, p. 9.) An increase in the amount of impervious surfaces can increase runoff, leading to the erosion of unprotected surfaces. *(Ibid.)* Applicant, therefore, has provided a draft Erosion Control and Stormwater Management Plan that identifies potential temporary and permanent erosion and stormwater runoff control measures. *(Ibid.)* This plan will serve as a precursor to Applicant s Storm Water Pollution Prevention Plan (SWPPP). (Ex. 19A, Part II, pp. 18-20; *see* Condition **Soils & Water-1**.)

Routes 1-3, will cross canals and ephemeral drainages. (Ex. 19A, Part II, p. 9.) Transmission Route 1A (Route 1A) crosses several ephemeral channels and the California Aqueduct. *(Ibid.)* Route 1B and its proposed Variation (Route 1C) will cross fewer ephemeral channels; however, it will cross over the California Aqueduct, Kern River Flood Canal, the Florida Drain, the Weed Island Ditch, the Arizona Ditch and the Depot Drain. *(Ibid.)* Route 2, the water supply line, crosses eight ephemeral channels, and Route 3, the wastewater pipeline, crosses one. *(Ibid.)*

Those drainages that are considered waters of the United States under the Clean Water Act include the Kern River Flood Canal and certain small intermittent drainages near the California Aqueduct. (Ex. 19A, Part II, p. 9.) Applicant has received Nationwide Permit (NWP) No. 26 from the U.S. Army Corp of Engineers for transmission-line construction disturbances associated with drainages in U.S. waters. Applicant estimates that these activities will require the temporary

disturbance of 0.45 acres. *(Ibid.)* NWP-26 allows the discharge of dredged or fill material into headwaters and isolated waters that disturb three acres or less. *(Ibid.)* General conditions for NWP-26 include the requirements that::

- appropriate erosion and siltation controls be implemented;
- discharges of fill may not impede high flows; and
- any temporary fills must removed and the area returned to preexisting conditions. *(Ibid.)*

The State Water Resources Control Board (SWRCB), under Section 401 of the Clean Water Act has not certified certain NWP s, including number 26, as consistent with state water quality standards. (Ex. 19A, Part II, p. 9.) Therefore, the Central Valley Regional Water Quality Control Board (CRWQCB) must provide a 401-certification prior to the NWP-26 being valid. *(Ibid.)* CRWQCB staff has reviewed Applicant s 401-certification application and related additional submittals; Staff indicated, however, that a final certification would not be issued until after Energy Commission approval of the project. *(Ibid.)*

In addition, a Streambed Alteration Agreement (SAA) will be required from the California Department of Fish and Game (CDF&G) for transmission line construction activities that will cross the Kern River Flood Channel and other small intermittent streams in the Elk Hills area. (Ex. 19A, Part II, p. 97.) CDF&G has issued a draft SAA, which addresses vehicle stream crossings on several drainages and the possible construction of support structures on or near stream banks. (Ex. 19A, Part II, pp. 9-10.)

Measures addressing soil and water resource concerns identified under general provisions in the draft agreement include:

- all work will be completed while the streams are dry;
- disturbance or removal of vegetation shall not exceed the minimum necessary to complete the operation;
- no trees or shrubs shall be removed or affected because of this project;

- vehicles will not be driven or equipment operated in water-covered portions of the stream, or where wetland vegetation, riparian vegetation or aquatic organisms may be destroyed;
- stream channels will be returned to pre-project conditions to the ~~extend~~extent possible;
- silty water will not be discharged to or created within the stream; and
- temporary stream diversions will ensure sufficient downstream flow to support aquatic life.

Staff, therefore, concluded that implementation of the measures identified in the NWP-26 (as certified by the CRWQCB) and the SAA would mitigate any potential adverse impacts to the area's soils from wind and water. (Ex. 19A, p. 20.)

1. Water Supply

WKWD is the sole water supply source for the proposed project, which will require 3,180-acre feet per year (AFY). (3/9 RT 77:21-79:1; Exs. 19A, Part II, pp. 5, 10 and App. N; 18, pp. 20, p. 2.) WKWD will supply Applicant's needs with groundwater that it produces from its well field in the Tupman area. (Ex. 19A, Part II, p. 10.)

Water storage on site will consist of a raw water storage tank with a million-gallon capacity. (Ex. 19A, Part II, p. 10.) Approximately 630,000 gallons will be available to cover a 5-hour water supply interruption. *(Ibid.)* The remaining 370,000 gallons of water will be dedicated to the plant's fire protection system. (*Ibid.)*

The salient features of the WKWD are that it:

- covers approximately 250 square miles of western Kern County;
- serves 6,500 domestic customers residing in the Cities of Taft and Maricopa, and a number of unincorporated communities;
- serves approximately 400 major industrial users;
- obtains its water supply from local groundwater wells through a groundwater banking and recharge program agreement with the Buena Vista Water Storage District (BVWSD), and through a subcontract with the Kern County Water Agency (KCWA);
- has approximately 230,000 acre-feet of water currently banked;

- has never drawn water against the bank;
- has a current State Water Project (SWP) entitlement of 25,000 acre feet per year;
- has an additional 10,000 acre-feet entitlement under the SWP contract during wet years when high flow water is available from the Delta;
- has other water sources, which may be available by agreement with water agencies and other entities throughout Kern County; and
- has a recharge obligation for groundwater withdrawals over 3,000 acre feet per year. (Ex. 19A, Part II, p. 10.)

Mr. Brian Patrick, Director of Operations for WKWD testified for Applicant. In his testimony, Mr. Patrick explained that WKWD is one member of the 16 member-unit KCWA, which is the responsible water management agency for Kern County. (Exs. 20, Att. A; *see also* 18, pp. 6-7.) KCWA sells water to its member water districts that supply water to end-users. *(Ibid.)* KCWA has the master contract with the state to obtain allotted SWP water from the California Aqueduct. (Ex. 18, p. 6.) KCWA under a subcontracting agreement then sells SWP water to WKWD.[123] (*Id., at pp. 6-7.)* With its water purchase, WKWD then serves its customers in the McKittrick-Taft-Maricopa areas, and by contract, the Elk Hills Oil and Gas Field. (Exs. 20, Att. A; *see also* 18, pp. 6-7.) In addition, WKWD maintains several historical agreements with the BVWSD concerning usage of the local groundwater basin.

WKWD in 1965 entered an agreement with BVWSD to limit WKWD s net groundwater withdrawals from the basin to 3,000 AFY. (Ex. 18, p. 5) The amount of 3,000 AFY is based on WKWD s historic withdrawals prior to 1966, and it cannot be banked. *(Id., at p .6.)* Therefore, WKWD uses this water first in any given year. *(Ibid.)*

In conjunction with the BVWSD, WKWD uses SWP water for its groundwater banking and recharge program. (3/9 RT 75:15-79:11; Exs. 19A, Part II, p. 5 and

---

[123] Through its subcontract with the KCWA, WKWD is entitled to 25,000 acre-feet of SWP water per year. (Exs. 19A, Part II, p. 6; 18, pp. 6-7.) An additional 10,000 acre-feet of SWP water, known as interruptible water, is also available to WKWD during wet years. *(Ibid.)*

App. N; 18, pp. 6-7 and Ex. D.) As part of the agreement with WKWD, BVWSD delivers WKWD s SWP water from the California Aqueduct to its landowners instead of pumping local groundwater. (Exs. 19A, p. 6; 18, p. 7.) WKWD then can pump or bank a volume of groundwater equivalent to the amount of SWP water supplied to BVWSD. *(Ibid.)*

The availability of SWP supplies is variable and subject to cutbacks during drought years. (3/9 RT 75:15-79:11; Exs. 19A, Part II, p. 5 and App. N; 18, pp.6-7 and Ex. D.)[124] WKWD attempts each year to obtain the maximum amount of SWP water available and is usually able to bank all of its SWP water through the banking agreement with BVWSD. *(Ibid.)* **Soil & Water Resources Table 2** shows the amount of SWP water received, water acquired from other sources, water demand, and water banked for water years 1990 through 1996.

Since 1990, WDWD has banked on average over 12,000-acre feet per year through its agreement with BVWSD. (Ex. 19A, Part II, p. 7.) Its current bank of water is approximately 230,000 acre-feet, and it has never drawn against the banked water supply. (3/9 RT 78:18-79:1.)

[124] The WKWD normally sells water to clients within the district, and the proposed plant is outside the boundaries of the district. (3/9 RT 158:7-179:17.) As such, the proposed project would face curtailment first among residential and industrial customers in case of a water shortage. *(Ibid.)* WKWD therefore plans to annex the site into the district after the Energy Commission proceedings are concluded. *(Ibid.)*

SOIL & WATER RESOURCES Table 2
West Kern Water District Water Supply (acre-feet)

Water Year	SWP Entitlement	SWP Interruptible	Tehachapi-Cummings	Water Purchased	Water Sold	Water in Bank
1990-1991	24,348	0	5,477	29,825	10,948	155,488
1991-1992	10,464	32	1,792	12,289	14,755	155,408
1992-1993	9,496	0	5,310	14,806	12,335	160,137
1993-1994	19,523	5,387	2,325	27,235	12,317	174,484
1994-1995	19,838	5,465	5,050	30,353	11,334	194,956
1995-1996	25,000	0	0	25,000	13,239	216,503
1996-1997	25,000	-	-	25,000	13,843	229,133
1997-1998	25,000	-	-	25,000	13,385	216,556
Total	108,705	10,884	19,945	139,508	74,928	-
Average	18,118	1,814	3,326	23,251	12,488	13,165

Source: (Ex. 19, Part II, p. 6.)

Both districts recharge the basin using spreading ponds and the Kern River Channel near WKWD s well field. (Ex. 19A, Part II, p. 7.) Groundwater levels near WKWD s well field have varied greatly over the last five years due to changes in production as well as due to recharge. *(Ibid.)* The groundwater pumped by the district from their wellfield is typically sodium bicarbonate water with low levels of total dissolved solids (TDS) and generally meets drinking water standards. *(Ibid.)*

WKWD s well field is located approximately 15 miles northeast of Taft in the Tupman area. (Ex. 19A, Part II, p. 7.) Total peak production capacity of the six active wells is 99 acre-feet per day, but maximum daily usage averages approximately 41.5 acre-feet per day. *(Ibid.)*

Although the Elk Hills Oil and Gas Field is located outside the boundary of WKWD, the former Naval Petroleum Reserve-1 (NPR-1) had a guaranteed purchase agreement with the district for between 0.9 up to 1.9 million gallons per day. (Ex. 19A, Part II, p. 6.) The average annual purchase has been approximately 1.25 million gallons per day or about 1,300-acre feet per year. *(Ibid.)* The Occidental and Chevron Oil Companies that purchased NPR-1 have maintained this purchase agreement. *(Ibid.)*

On cross-examination, Mr. Patrick testified that as a policy WKWD sells water to customers within the boundaries of the district. (3/9 RT 158:20-159:3.) He stated that WKWD had served the former NPR-1 for a number of years, and had planned to annex it to the WKWD. *(Ibid.;* 3/9 RT 158:7-159:4; 3/9 RT 175:19-179:17.) Mr. Patrick testified that WKWD could continue to serve the property with water but that its priority would be less than residential and industrial customers in case of a water shortage In case of a water shortage, industrial customers would face water curtailment so that WKWD could serve its residential

customers, and industrial clients outside WKWD would be curtailed before those within. *(Ibid.)*

2. Applicability of State Water Resources Control Board Resolution 75-58 (SWRCBR 75-58).[125]

CURE contends that SWRCBR 75-58 has a mandatory application to the Energy Commission and that:

> [t]he Commission can only approve the use of fresh inland waters for cooling the Elk Hills powerplant if other sources or other methods of cooling would be environmentally undesirable or economically ~~undesirable.~~ unsound. To make this determination, the Commission must consider an analysis of the cost and water use associated with the use of alternative cooling facilities employing dry, or wet/dry modes of operation. (Ex. 39, pp. 2-3~~, internal citations omitted~~.)

CURE argues that because Staff has identified other feasible alternatives to using fresh water cooling, these options must be explored to determine if economic and environmental factors would allow for their application under SWRCBR 75-58. (Ex. 39, p. 3.) CURE also argues that the proposed project location in the Elk Hills Oil and Gas Field makes it accessible to:

- 6 million gpd of groundwater that is currently extracted for oil production;
- 4.3 million gpd of produced water; of which
- 3 million gpd is disposed of in the Elk Hills Oilfield.[126] (Ex. 39, pp. 3-4; 5-6.)

---

[125] The full text of SWRCBR 75-58 is provided as an Appendix to this Decision, as are the relevant statutory provisions. Of particular note is that SWRCBR 75-58 directs SWRCB staff to coordinate closely with the Energy Commission and other involved state and local agencies to implement the policy.

[126] CURE cites Division of Oil, Gas, and Geothermal Resources (DOGGR) statistics for this proposition and argues that this amount of water is nearly sufficient to supply the project s water demand of 3.1 million gpd. (Ex. 39, pp. 5-6.) Applicant argues that this water is unsuitable for cooling tower makeup. (3/9 RT 115:17-116:9.)

In addition, CURE argues that alternative technologies are available employing dry, or wet/dry modes of operation and that should be applied in place of fresh inland waters under SWRCBR 75-58. (Ex. 39, p. 4.)[127]

In order to assess the applicability of SWRCBR 75-58 to these proceedings, Staff conferred with Ms. Sheila Vassey, a SWRCB staff attorney for 20 years. (5/2 RT 31:17-41:6; Ex. 19C, App. B.) She responded by electronic mail to CEC staff member Joe O Hagen as follows:[128]

> This phrase is contained in Principle 7[129] of the State Water Boards s Water Control Policy on the Use and Disposal of Inland Waters for Powerplant Cooling (1975). That principle states that the State Water Board will approve the use of ***inland waters*** for powerplant cooling only when it is demonstrated that the use of other water sources or cooling methods would be environmentally undesirable[130] or economically unsound. (Ex. 19C, App. B; *emphasis added*.)
>
> I was not able to come up with anything. In researching the State Water Boards s old legal memoranda, I came across a series of 1989 memos on a proposed Pacific Gas and Electric Fossil 1 and 2 project. These memos indicate that the State Water Board s overriding concern with the project was the proposed use of ***fresh water*** for powerplant cooling. The memos do not, however, discuss whether the use of other sources would be economically unsound or otherwise provide enlightenment on the subject.
>
> I would agree with you that to demonstrate economic unsoundness, it would probably ***not*** be necessary to show economic infeasibility.

---

[127] Prior to the May 2, 2000 hearing on water resources, the Committee on April 21, in response to various motions from the parties, issued an Order which directed the parties to brief whether SWRCBR 75-58 applies to these proceedings.

[128] Ms. Vassey s response was in the context of Commissioner Moore s directive to the parties to brief the meaning of the term *economically unsound* in the context of wet versus dry cooling under an analysis of SWRCBR 75-58 s applicability. (3/9 RT 249:4-258:5; *see* Elk Hills Committee Order dated April 21, 2000.)

[129] In her testimony before the Committee, Ms. Vassey pointed out a typographical error in her e-mail to CEC staff member Joe O Hagen: Principle 7 should have read 2. (5/2 RT 35:4-15.)

[130] The Committee ruled in a separate Order that CURE had waived the right to present any evidence on the subject of environmentally undesirable within an analysis of SWRCBR 75-58. (*See* Elk Hills Committee Order dated May 16, 2000.)

> According to a State Water Board economist, ***economically unsound*** is a subjective term that is not used by Economists. It implies some kind of balancing of costs and benefits, which are not identified in the State Water Board s policy. (5/2 RT 35:16-36:15; Ex. 19C, App.B.)

In response to Applicant s question about SWRCBR 75-58 s application, Ms. Vassey stated that:

> Well, to the best of my knowledge, I don t--I could not come across an order, as I said, in which--discussing the policy, so it does not appear that it s been applied very much. (5/2 RT 37:2-14.)

Moreover, in responding to CURE s inquiry about SWRCBR 75-58 s application to the Elk Hills proceeding, the SWRCB s Acting Chief Counsel, Craig M. Wilson, responded as follows:

> As you indicate in your letter, Resolution 75-58 was adopted as state policy for water quality control pursuant to Water Code section 13140. **It is still in effect and applicable to all state agencies under Water Code section 13146. Also applicable are Water Code sections 13550 et seq. which deal with the reuse of recycled water.** (Emphasis added.)

The SWRCB did not offer further guidance on SWRCBR 75-58 and its application to siting cases.

Applicant argues that SWRCBR 75-58 s language in Principle 2-- [w]here the Board has jurisdiction, use of fresh inland waters for... --refers to a new water allocation, which the SWRCB must approve, for the [B]oard to have jurisdiction.[131] (3/9 RT 107:4-109:9; Applicant's Opening Brief on Phase II issues, pp. 15-21; Reply Brief pp. 5-7.) Assuming, *arguendo*, that SWRCBR 75-

[131] Applicant argues alternately that SWRCBR 75-58 is not applicable at all to the Energy Commission, and it is merely to be used as guidance in our proceedings. We likewise reject this approach because SWRCBR 75-58 has provisions for waste water disposal. These provisions are applicable to the Energy Commission whether or not the water use provisions are applicable in any given case.

58 applies to groundwater (we have expressly found that it does not), Applicant argues that the Board would not have jurisdiction, because there is no new water ***allocation***.[132]

The evidence of record is that WKWD already has:

- its contracted for SWP water allocation;
- sufficient water on hand to supply Elk Hills; and
- no requirement for any new allocation.

CURE disputes Applicant s argument with contentions that:

- all state agencies must comply with state policy for water quality control under the directive of Water Code section 13146;
- the SWRCB s wide ranging jurisdiction to exercise the adjudicatory and regulatory functions of the state in the field of water resources should extend to the Energy Commission when it is making determinations under its siting authority;
- the inconsistent application of SWRCBR 75-58 in our other cases where the policy was applied even though there was no new water allocation; and
- as the exclusive authority over powerplant siting decisions, the Commission steps into the SWRCB s shoes to determine an applicant s compliance with the powerplant cooling policy. (CURE s Opening Brief on Phase II issues, p. 3; Reply Brief pp. 22-23.)

Staff s position on SWRCBR 75-58 includes the following:

~~1.~~

where the SWRCB ***has jurisdiction***, use of fresh inland waters for powerplant cooling will be approved only when it is demonstrated that the use of other water sources or other methods of cooling are environmentally undesirable or economically~~unsound.~~

1.

[132] Staff has adopted this position as well. (Staffs Opening Brief on Phase II issues, p. 6.)

unsound.

2. Staff is discussing with the [SWRCB] a definition [for the terms environmentally undesirable or economically unsound] and hopes to have a reply shortly. [133]

3. The SWRCB policy also calls for water availability studies for projects to be constructed in the Central Valley to consider potential impacts on Delta outflow and water quality objectives. ***Since the project is proposing to use groundwater***, staff anticipates that this source will have no effects on Delta outflow or water quality objectives. (Ex. 19, Part II, p. 16, emphasis applied.)

In conjunction with SWRCBR 75-58, the parties examined relevant provisions of the California Water Code. Water Code section 13550 provides that use of potable domestic water for industrial uses is an unreasonable use of the water if recycled water is available, meets quality standards, and is economically feasible for the purpose sought.

Further, Water Code section 13552.6 specifies that the use of potable domestic water for cooling towers is an unreasonable use of water if recycled water is available for this purpose. Water Code section 13552.8 authorizes any public agency to require the use of recycled water in cooling towers if it is available under the conditions set forth in section 13550.[134] Water Code section 13555.3 provides for separate water-delivery systems on private property for potable and recycled, nonpotable uses.

---

[133] In Supplemental Testimony on Soil and Water Resources, Staff acknowledged that it was unable to define further these terms beyond the description provided by SWRCB staff attorney Sheila Vassey in her testimony. (3/9 RT 202:9-203:14; Ex. 19B, p. 5; & 19C (Att. A. Supplemental Testimony), App. B.)

[134] Recycled water means water, which, because of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur, and is therefore considered a valuable resource. (Water Code, ⁄ 13050 (n).) Beneficial uses include power generation. (Water Code,⁄13050 (f).)

Alternative Water Supply Sources

The parties reviewed potential alternative water supply sources in conjunction with their analysis of pertinent Water Code provisions. Applicant evaluated five alternative water supply sources as follows:

1. Elk Hills produced water; [135]
2. Brackish groundwater from the Tulare Formation;
3. Buena Vista Water Storage District (BVWSD) groundwater;
4. Kern County Water Authority (KCWA) groundwater; and
5. WKWD groundwater. (3/9 RT 81:22-82:12; Ex. 36.)

Elk Hills Power Vice President Joe Rowley testified that the evaluation under SWRCBR 75-58 looked at availability, infrastructure requirements such as new wells, pipeline length and route, water handling, and relative capital and operation and maintenance costs. (Ex. 19A, Part II, p. 82:13-86:10.)

Mr. Rowley testified that the produced water from OEHI oil operations had a salinity value of 20,000 to 40,000 ~~ppm,~~TDS, or 2-4 percent salt, which is more than sea water. (3/9 RT~~p.~~ 86:11-87:20.) Mr. Rowley stated the OEHI was unwilling to make the water available and combined with its poor salinity, was a poor choice for cooling tower makeup, much of which is evaporated. *(Ibid.)*

Mr. Rowley testified that brackish groundwater from the Tulare Formation was available, and that water was not nearly as saline (in the range of 4,000-6,000 TDS) as produced water. (3/9 RT 87:21-94:16, *see* Ex. 36.) ~~In fact,~~However, Mr. Rowley stated that ~~this water was similar to water coming from the~~because its TDS was much higher than ~~local water districts though~~WKWD water, Tulare Formation water was subject to being recycled for cooling purposes only half as much. *(Ibid.)* He stated that approximately six new water supply wells would be

[135] Produced water is brackish, natural water pumped up with oil from OEHI s oilfield operations. (3/9 RT 86:11-13.) Applicant contends that OEHI is unwilling to make this water available to the proposed project. (3/9 RT 87:1-20; 153:1-19; Ex. 36.)

needed to pump the greater volume of brackish water that would be required.[136] *(Ibid.)*

Mr. Rowley also asserted that use of Tulare Formation groundwater would require additional water treatment and incur higher capital, and operation, and maintenance costs. (3/9 RT 88:9-94-16.) In addition, even if another source of water was required, Applicant would still anticipate using WKWD banked water for the powerplant steam cycle s higher quality water need. (3/9 RT 99:11-23; 5/2 RT 79-13-80-18.) Therefore, the proposed source water pipeline from WKWD s facility would still be required. *(Ibid.)*

Environmental costs from use of Tulare Formation groundwater would deal mainly with impacts on groundwater resources from pumping, interference with other wells, drift emissions and impacts with deep well injection of a significantly higher TDS degraded water back into the ground. (3/9 RT 89:3-93:8.)

Staff's witness, Joe O Hagen, clarified that:

- there are no wastewater treatment plants in the region that could supply the project;
- irrigation return flows are too small and erratic over the course of a year to be a suitable supply;
- produced water from the Tulare Formation in the Elk Hills Oil and Gas Field with a TDS of 20,000 to 40,000 mg/l is not a source of an alternate water supply;[137]
- Lower Tulare Formation groundwater with a TDS of 4,000-5,000 mg/l is a potential source of an alternate water supply;
- the use of dry cooling or wet/dry cooling would provide an environmental benefit through the reduction of water demand;

---

[136] No additional wells would be required to pump SWP banked groundwater from the WKWD. (Ex. 36.)

[137] Staff found that use of such brackish water in cooling towers presents significant problems, not only with cooling tower operation, but also with wastewater disposal. (Ex. 19A, Part II, p. 15.) Mr. O Hagen explained that the SWRCB defines brackish water as ranging from 2,000 to 30,000 mg/l in TDS. *(Ibid.)* SWRCBR 75-58 states, however, that application of the term brackish to a water is not intended to imply that the water is no longer suitable for industrial or agricultural purposes.

- the use of dry cooling or wet/dry cooling may impose an economic burden on Applicant, which would offset the reduction of water demand; and
- without further guidance as to the meaning of the terms *economically unsound,* SWRCBR 75-58 is "not very useful." (3/9 RT 192:16-197:5; Ex. 19, Part II, p. 15.)

In its LORS analysis, Staff did not comment specifically on Water Code sections 13140, 13146, or 13550. Instead, Staff simply cited and provided a general overview of the Porter-Cologne Water Quality Control Act (Water Code sections 13000 et seq.), which focus primarily on waste discharges.[138] (Ex. 19A, Part II, p. 2.) The Committee did not find this approach particularly insightful or helpful to our analysis of the pertinent provisions.

3. Alternate Cooling Technologies

CURE contends that over 700 air-cooled condensers are in operation worldwide, a fact that CURE claims demonstrates dry cooling is economically sound. (Ex. 39, p. 7.) CURE acknowledges that the capital cost of a dry cooling system is typically higher than a wet cooling system due to certain added system requirements. (Ex. 39, p. 6.) CURE performed a cost analysis of the wet versus dry cooling option, which purported to show that 100 percent dry cooling would increase the capital cost of the proposed project by approximately 2.7 million dollars. (Ex. 39, pp. 6-8 & Table 1.)[139]

In addition, CURE argues that 100 percent dry cooling is the most expensive option of the various options available to Applicant. Other options according to CURE include hybrid systems employing parallel combinations of wet/dry cooling

---

[138] There is no dispute but that SWRCBR 75-58 applies to waste discharges. As Staff noted in the FSA, however, the EPA will be permitting the proposed project s injection wells so that any SWRCB waste discharge requirement is not likely to be required. (Ex. 19A, Part II, p. 2.)

[139] Applicant took issue with certain parts of Table 1; however, those issues are not pertinent to our analysis here. (3/9 RT 117:1-120:3.)

technology, which may reduce evaporative water demand up to 90 percent or more. (Ex. 39, pp. 6-7.)

a. Wet Cooling

Applicant proposes to use a wet cooling tower~~s~~ to condense the steam exiting the steam turbines in order to maintain the lowest possible condenser vacuum and achieve maximum operational efficiency. (Ex. 19A, Part II, p. 16.) The heat rejection mechanism in wet cooling towers is primarily the evaporation of water to the atmosphere. *(Ibid.)*

CURE challenges the choice of wet cooling. In the words of Dr. Fox:

> Combined cycle powerplants use both a gas turbine and a steam turbine to produce electricity, with the latter producing about one-third of the net output. The steam from the steam turbine must be condensed to water, which is done using a surface condenser, and cooled, which is done with a cooling tower in a conventional wet cooling system. The Elk Hills project has proposed to use a wet cooling tower to remove this heat. In this process, steam is condensed in a surface condenser and the resulting hot water is sprayed over a packing in a cooling tower to bring it into direct contact with air. This evaporates about 85% of the hot water~~.~~, cooling the air and the remaining water. This evaporative water demand, which amounts to 2.7 million gallons per day for the Elk Hills project, can be eliminated by using dry cooling or substantially reduced using a parallel wet/dry cooling system. (Ex. 39, p. 6.)

Applicant took issue with CURE s formulation as follows:

> [CURE has] apparently a misunderstanding of how a powerplant works. [CURE states] the Elk Hills project has proposed to use wet cooling to remove this heat. In this process, steam is condensed in a surface condenser, and the resulting hot water is sprayed over a packing in a cooling tower.
>
> That s certainly not the case. The--the steam that s condensed in the surface condenser is pumped back to the boiler, and is reused in a continuous cycle. The water that-- that is sprayed in

> the cooling tower is the circulating water, and that s the water that really I ve been talking about throughout my testimony today. (3/9 RT 11610-25.)

We believe Applicant s testimony to refer to its water conservation measures.[140] In either case, we discern only a dispute about mechanical operation rather than a dispute as to the amount of water being evaporated.

b. Dry Cooling

In the direct dry cooling system, steam exhausts from the turbine to a manifold radiator system. (Ex. 19C, p. 9.) The steam condenses in the radiator system as heat is conducted through the pipe walls to the atmosphere. *(Ibid.)* Because the steam is condensed directly in the radiator system, and is returned to the boiler as feed water, direct dry cooling does not require a huge volume of circulating cooling water. The closed system does not experience water loses due to evaporation. Additionally, without evaporation, the cooling water system does not become concentrated with salts and impurities, requiring additional losses through a blow-down stream. Therefore, dry cooling does not require the large volumes of make-up water that are necessary in wet cooling systems. Nor does it require ancillary systems to control biological growths, and control water chemistry to the same degree~~that~~ as does a wet cooling tower. *(Ibid.)*

An indirect dry cooling system uses a secondary working fluid to transfer the heat from the steam cycle to the atmosphere. (Ex. 19C, p. 10.) In the indirect cooling system, a closed cycle system extracts heat from the condenser and rejects the heat through a radiator system. *(Ibid.)* The secondary working fluid can be water, ammonia, or a fluid/mixture with heat transfer and properties suited to the temperatures and heat transfer regime. *(Ibid.)*

---

[140] In his prefiled testimony, Mr. Cronk stated that the project complies with Water Code section 461, which requires water users to conserve and reuse available water supplies. (Ex. 20; Cronk testimony, Att. B, p. 3.) He states that Applicant s water conservation measures include reuse of cooling tower water by recycling a minimum of six times. *(Ibid.)*

c. Wet/Dry Hybrid Towers

Wet/dry hybrid cooling towers use both an evaporative system and a radiator system to reject heat from the condenser. (Ex. 19C, p. 10.) The ratio of dry to wet depends on the ambient conditions and the desired heat rejection, water savings, or visible plume reductions. *(Ibid.)* Because the dry radiator system rejects heat into the air moving through the tower without adding moisture, it is often used in series or parallel with the wet portion to control visible plume formation. The key to the hybrid system is controlling the two systems to achieve the desired heat rejection (operational constraints), visible plume reduction, and/ or water savings while balancing pump and fan loads. *(Ibid.)*

In a series configuration, a wet/dry hybrid cooling tower evaporative section rejects heat by evaporating water into the air to levels approaching saturation. (Ex. 19C, p. 10.) If this saturated, or near saturated, air were immediately rejected into the environment, the warm plume would rise, and become visible as the moisture in the plume cooled and condensed. *(Ibid.)* By arranging the tower in series, the dry radiator section rejects additional heat into the saturated air stream without adding additional moisture. The air stream then exits the tower at a higher temperature and lower relative humidity, compared to a wet-only system, which will take longer to cool to the point of condensing. This additional time can allow the plume to dissipate before a visible plume has time to form. *(Ibid.)*

In a parallel configuration, the heat rejection mode depends on the meteorological conditions. (Ex. 19C, p. 11.) Cool ambient air temperatures, that generally promote visible plume formation, are also those conditions that improve the heat rejection effectiveness of dry cooling systems. Visible plumes are less likely to form during warmer ambient air temperatures. *(Ibid.)* Warmer air can hold more moisture, thereby improving the cooling potential from the evaporative wet cooling tower. *(Ibid.)* The control logic balances the ambient conditions and

plume control with the desired cooling system performance by rejecting heat in both towers, at some ratio, or in one tower exclusively. *(Ibid.)*

4. Costs of Alternate Cooling Technologies

(a) Applicant

In terms of efficiency, Mr. Rowley explained that operation of a dry cooled facility would mean a decrease in overall output of 21 megawatts. (3/9 RT 94:97-15.) Sixteen megawatts would be lost due to the steam turbine s reduced efficiency loss from having to operate under higher temperatures and pressure because of dry cooling. Five megawatts would be lost to powering auxiliary equipment such as large fans needed to provide cooling air. *(Ibid.)*

In terms of capital costs, Mr. Rowley put the additional cost estimate for dry compared with wet cooling at approximately 15 million dollars. [141] (3/9 RT 97:22:99-25; 148:11-150:1; 166:14-170:25.) When Applicant performed its own analysis based on the alternative presented by CURE, it revealed a net present value for dry cooling that is $29.6 million more than the costs of the proposed project. (5/2 RT 45-12; 50:13; 52:5-53:10; Ex. 40 & Table A.)

As to a straight comparison between the proposed project and dry cooling using water supplied by WKWD, Applicant s analysis demonstrated a higher cost differential for dry cooling of $19.7 million dollars. (5/2 RT 45-12; 50:13; 52:5-53:10; Ex. 40 & Table A.)

---

[141] Applicant later clarified that its own cost analysis assumed a net output loss of 6.5 megawatts throughout the year based on a constant 0.75 inches of mercury increase in steam turbine backpressure employing dry cooling. (5/2 RT 73:1875:7; Ex. 40 & Table A.) Fuel consumption for a given amount of power likewise rises. (3/9 RT 97:17-19.)

(b) Staff

Staff concurred with Applicant that, in general, dry and hybrid-cooling towers are more expensive than a wet system. (5/2 RT 92:12-; 93:12; Ex. 19C, pp. 6-11.) For hybrid systems, which basically require the design and construction of two cooling systems, costs range from less to more than dry cooling systems, depending on the ratio of wet to dry cooling in the hybrid design. *(Ibid.)* The initial cost differences are due to:

- the dry condenser, or heat exchanger;
- the taller structures for dry and hybrid cooling systems;
- complex control systems for wet/dry cooling towers; and
- larger fans and motors for dry and hybrid cooling systems. (Ex. 19C, p. 11.)

Mr. O Hagen testified that, based upon his analysis of previous projects, dry cooling capital costs are two to three times higher than those of wet cooling. (3/9 RT 203:24-205:23.) In terms of actual numbers, Mr. O Hagen testified that estimates he had been given in previous cases for dry cooling costs exceed those of wet cooling in the range of 15-25 million dollars. *(Ibid.)*

(c) CURE

CURE s expert witness, Dr. J. Phyllis Fox, has extensive credentials in the field of water supply, and she disputed Applicant s contention that it would suffer a 21-megawatt diminution in power due to dry cooling. (3/9 RT 207:17-212:19.) (3/9 RT 214:25-216:5; Ex. 39 & Table 1.) Dr. Fox stated that Applicant s model was based on worst case predictions that would not occur throughout the year. Instead, Dr. Fox stated that her analysis showed an annual loss of only 10 megawatts. *(Ibid.)* As to parasitic power loss for running cooling fans, Dr. Fox analysis calculated a loss of three megawatts (contrasted with Applicant s total estimate of five megawatts). *(Ibid.)* Moreover, Dr. Fox contented that these efficiency losses are irrelevant. (3/9 RT 216:8-217-14.) She based her view on

the Applicant s capacity to fire duct burners to increase output and to offset any efficiency reductions due to dry cooling. *(Ibid.)*

As to capital costs, Dr. Fox testified that the cost differential for the cooling portion of the equipment utilized for dry cooling exceeds the cost of wet cooling equipment by six to 10 million dollars. (3/9 RT 214:7-18.) For the proposed project, Dr. Fox s dry cooling cost analysis produced a cost differential for installed capital costs of approximately six million dollars. (3/9 RT 235:12-236:23; Ex. 39, Table 1.) In terms of total capital costs between wet and dry cooling, however, Dr. Fox s analysis shows that 100 percent dry cooling would increase the capital costs of the project by approximately 2.7 million dollars. (3/9 RT 78:20-21; Ex. 39, p. 8 & Table 1.)

5. Water Quality and Wastewater Disposal

Wastewater from the Elk Hills project will consist mainly of cooling tower blowdown, which is nonhazardous. (*See* **Tables 3 & 4**[142] and note 7 below.) Incorrect disposal of wastewater or inadvertent chemical spills can degrade soil, surface water, and groundwater. (Ex. 19A, Part II, p. 11.) Applicant plans to dispose sanitary waste to a septic system and leachfield. *(Ibid.)* All other liquid waste generated by Applicant will be disposed through the use of two injection wells (T31S T24E Section 18~~ and T30S R23E Section 35~~) located approximately four miles south of the power plant site. (Ex. 19A, Part II, p. 11.)

\\\

\\\

[142] **Table 2** above shows the estimated volumes of wastewater effluents.

SOIL & WATER RESOURCES Table 3
Estimated Wastewater Volumes to be Injected

Waste Stream	Daily Average	Daily Maximum
Cooling Tower Blowdown	430,000 gpd	537,500 gpd
Floor Drains	58,000 gpd	72,500 gpd
Demineralization Wastes	15,000 gpd	18,500 gpd
Storm Water Runoff	Minimal	n/a
Total to Injection Well	503,000 gpd	628,500 gpd

Source: (Ex. 19A, Part II, p. 12.)[143]

SOIL & WATER RESOURCES Table 4
Estimated Wastewater Characteristics

Waste Stream Characteristics — mg/l				
Stream	**Cooling Tower Blowdown**	**Demin. Regen. Waste**	**Floor/Interim. Storm Drains**	**Combined Waste**
Calcium	97.1	164.0	16.4	94.7
Magnesium	4.1	7.0	0.7	4.0
Sodium	336.5	1985.0	56.8	461.2
Potassium	14.2	24.0	2.4	13.9
Barium	0.0	0.0	0.0	0.0
Strontium	1.2	2.0	0.2	1.2
Iron	1.3	2.0	0.2	1.2
Boron	2.4	4.0	0.4	2.3
Bicarbonate	100.0	803.0	80.3	163.9
Chloride	257.0	434.0	43.4	250.7
Sulfate	285.5	3290.0	0.4	536.8
Silica	128.5	217.0	21.7	125.4
Borate	12.4	21.0	2.1	12.1
Phosphate	0.8	1.0	0.1	0.8
PH	7.6	6.0-8.5	7.5	6.0-8.5
TDS	1241.1	6954.0	225.1	1668.2
TSS	75.0	25.0	75.0	70.3
Oil & Grease	0.0	0.0	11.0	1.2

Source: (Ex. 19A, Part II, p. 12.)

Concerns about injection well disposal mainly focus on the potential for degrading groundwater, especially potential sources of drinking water. (Ex. 19A, Part II, p. 12.) The feasibility of using injection wells relates to the potential for well clogging, blowouts from excess pressure and chemical reactions between fluids in the receiving formation and the wastewater. *(Ibid.)*

[143] In applying a conversion factor of 1 acre-foot = 326,000 gallons, a daily maximum of 628,500 gallons per day (gpd) would convert to (628,500 326,000=1.92) almost 2 acre-feet per day or 720 AFY (360 days x 2 acre-feet = 720), or roughly 21,600 maximum acre-feet over the proposed 30-year life span of the facility (720 x 30 = 21,600).

Applicant s proposed wastewater injection operations will affect groundwater within the Tulare injection zone. (3/9 RT 123:6-140-24; 189:4-191:23; Ex. 20, Atts. A & B to prefiled testimony of Donna M. Thompson and Barry Hanson regarding proposed Class 1 Injection Wells.) The well drilling and construction will be approved by the ~~DOGGR, which~~EPA. The DOGGR has exempted the Tulare Formation as a source of drinking water within the boundaries of the Elk Hills Oil and Gas Field based upon the presence of petroleum products. *(Ibid.)* In the proposed Tulare injection zone, groundwater has TDS greater than 3,000 mg/l and high concentrations of~~boron~~ chloride and boron. The proposed injectate is expected to have a TDS concentration of 1,200 mg/l. (*See* Soil & Water Resources Table 4.)

Applicant filed an application for a Class V injection well permit ~~to~~with the Central Valley Regional Water Quality Control Board (CVRWQCB) and the U.S. Environmental Protection Agency (EPA). (Ex. 19A, Part II, pp. 11-12.) EPA indicated that it will be the permitting agency for the injection wells, and that the wells will be permitted as Class I wells.[144] *(Ibid.)* The CVRWQCB found the application complete. (Ex. 19A, Part II, pp. 11-12.)

In light of the fact that EPA will be the permitting agency, once EPA has issued the permit, CVRWQCB may propose a resolution to waive waste discharge requirements. (Ex. 19A, Part II, p. 12.) The new wells (one well will be used as a back-up) are proposed near existing injection wells for oil and gas field related wastewater. (3/9 RT 186:11-187:2; Ex. 19A, Part II, p. 11.) Although injection well discharge of wastewater is often a concern because of potential impacts to

[144] A draft underground injection control class 1 nonhazardous permit (UIC) from the EPA was filed in the CEC s docket unit on July 24, 2000. Class 1 wells are those wells used to dispose of wastewater to a formation beneath an underground source of drinking water. (Ex. 19A, Part II, p. 12.) An underground source of drinking water is defined (in part) as any body of groundwater containing 10,000 parts per million (ppm) or less of total dissolved solids. (Ex. 19A, Part II, p. 12; *see* CFR, Chap. 1,⁄146.3.)

groundwater, this method of wastewater disposal is commonly used in western Kern County oil fields. (Ex. 19A, Part II, p. 11.)

The injection zone for the two wells would be in the Tulare Formation, a non-marine formation of Plio-Pleistocene age with an estimated thickness of 850 feet. (3/9 RT 123:9-140:24; Ex. 19A, Part II, p. 12.) Injection within this formation would be below the Corcoran Clay (E-Clay), a discontinuous confining layer about 25 feet thick that is within the Tulare ~~Formation *(Ibid.)*~~.Formation. *(Ibid.)* The confining layer is characterized as consisting of a low permeability, shale-like layer of unspecified thickness. *(Ibid.)* Groundwater within this portion of the Tulare Formation has TDS levels that range from 4,000 to 5,000 mg/l and is reported to have very little recharge from the surface. *(Ibid.)* Top perforation of the wells will be at an average of 597 feet and bottom perforation is at an average of 1,800 feet. *(Ibid.)*

To determine the direction and rate of migration of injected wastewater, Applicant assumed the injectate would move away from the wellbore in a radial pattern. The estimated average rate of movement is shown below.

SOIL & WATER RESOURCES Table 5
Average Rate of Injectate Movement

No. of Years	Average Rate
1 year	252 ft/year
5 years	104 ft/year
10 years	72 ft/year
20 years	50 ft/year

Source: (Ex. 19, Part II, p. 13.)[145]

On July 13, 2000, the EPA issued a draft UIC preliminarily approving Applicant's plans. (Permit No. CA200002; docketed on July 24, 2000; *see also* 3/9 RT 187:11-188-8.) Thus the evidence indicates that EPA will likely issue final

[145] Applicant s calculations over a 30-year period, the proposed plant life, are 1,204 feet as opposed to 994 feet. (3/9 RT 140:5-24.)

approval for the proposed injection wells. *(Ibid.)* The federal permit will contain general conditions regarding construction and operation of the injection wells as well as specific conditions including a prohibition against the disposal of hazardous wastes in these wells. (Ex. 19A, Part II, p. 13; *see also* Ex. 19B, Staff Soil and Water Supplement dated March 2, 2000.)

6. Cumulative Impacts

Temporary and permanent disturbance associated with construction of the proposed project will cause accelerated wind and water induced erosion. (Ex. 19A, Part II, p. 14, *see* Conditions **SOIL&WATER 1-3**.) Implementation of the proposed mitigation measures, however, should ensure that the proposed project would not contribute to cumulative erosion and sedimentation impacts. *(Ibid.)*

The WKWD has sufficient banked groundwater supply to meet the water demand for the life of the project. (3/9 RT 79:12-80:5; 185:11-186:10; Ex. 19A, Part II, p. 14.) The recently approved La Paloma project will use approximately 5,500-acre feet of WKWD s SWP water allotment per year. (Ex. 19A, Part II, p. 14.) La Paloma has recently submitted an amendment to the Energy Commission regarding increasing water demand by approximately an additional 500-AFY. *(Ibid.)* This water will be directly diverted from the California canal and the increased demand would not affect Elk Hills. *(Ibid.)*

Two other proposed powerplant projects, the Midway-Sunset Power Project and the Sunrise Cogeneration and Power Project, have proposed using water from the WKWD. (Ex. 19A, Part II, p. 14.) Sunrise (98-AFC-4) proposes to use approximately 278-acre feet of WKWD water. (Ex. 19A, Part II, p. 14.) Other water demands from the Sunrise project will be met by using produced water from the oil field. *(Ibid.)*

Midway—Sunset (99-AFC-8) proposes to use approximately 3,200-acre feet of water per year. (Ex. 19A, Part II, p. 14.) These projects, in conjunction with existing demand, represent approximately 23,000 acre feet of water demand per year, the majority of the district s annual allocation of State Water Project water, assuming full delivery. *(Ibid.)*

Mr. Patrick stated that the WKWD anticipates no increases in future water demand from other customers; in fact, demand may decline. (Ex. 20, Att. A, p. 3.) In addition, given WKWD s large banked groundwater supply and the flexibility to buy water from other sources, these new projects should not adversely effect the WKWD s water supply.[146] (Ex. 19A, Part II, p. 14.)

COMMISSION DISCUSSION

The evidence of record establishes that the Elk Hills Power Project s water supply requirements will not adversely affect WKWD s ability to supply existing customers, or likely curtail its ability to meet future demands considering WKWD's:

- entitlement to SWP water;
- banked groundwater; and
- its ability to buy interruptible water.

Furthermore, we do not believe that the use of banked groundwater will create any significant adverse impacts which would be avoided by an application of dry or wet/dry cooling.

---

[146] Mr. Patrick also testified that recharge by the Kern Water Bank over the last two years has increased groundwater resources in the area by approximately 500,000 acre-feet. (Ex. 20, Att. A, p. 2.) In the WKWD Groundwater Management Plan it states that [t]he recent recharge efforts of the Bank have resulted in a significant rise in water levels. What is unknown at this point, however, is the potential impact on the [WKWD] wellfield during the Bank s extraction cycles, particularly since these cycles will coincide with periods of heavy demand on the [WKWD s] supplies. (Ex. 18, p. 19.)

We are not persuaded, moreover, that SWRCBR 75-58 has any application to this case, other than as non-binding policy guidance. Although it applies to waste discharges, that prong of SWRCBR 75-58 is not at issue before us. The controversy engendered by the parties here instead concerns Applicant s proposed use of WKWD groundwater, which may be potable.

The Committee invited a SWRCB representative to our May 2, 2000, hearing, which was specifically scheduled to discuss SWRCBR 75-58 s application to the proposed project. Ms. Sheila Vassey, a SWRCB staff attorney appeared but could offer no definitive interpretation of SWRCBR 75-58 s application to siting cases. (5/2 RT 31:17-41:6.)

On cross-examination by CURE on whether the SWRCB had jurisdiction to determine whether a water use is beneficial or unreasonable, Ms. Vassey stated that:

> The State Board has statutory authority to investigate whether a use of water is —is a waste or unreasonable use of water. In general. (5/2 RT 38:4-25.)

Thus, although SWRCBR 75-58 has long been with us, its application remains somewhat of a mystery. Ms. Vassey, a senior 20-year employee with the SWRCB, could not recall a single instance of its definitive application to a siting case or otherwise.

It is fully apparent to us that the SWRCB had CEQA and the Energy Commission in mind when it framed SWRCBR 75-58. For example, in its introduction, SWRCBR 75-58 references section 25216.3 of the Warren-Alquist Act, which states:

> (a) The commission shall compile relevant local, regional, state, and federal land use, public safety, environmental, and other standards to be met in designing, siting, and operating facilities in the state; except as provided in subdivision (d) of Section 25402, adopt standards, except for air and ***water quality***, to be met in

> designing or operating facilities to safeguard public health and safety, which may be different from or more stringent than those adopted by local, regional, or other state agencies, or by any federal agency if permitted by federal law... . (Pub. Resources Code,／25216.3.)

Furthermore, section 25523 requires our decision to contain:

> Findings, regarding the conformity of the proposed site and related facilities with standards adopted by the commission pursuant to Section 25216.3 and subdivision (d) of Section 25402, with public safety standards and the **applicable air and water quality standards and with other relevant local, regional, state, and federal standards ordinances, or laws.** (Pub. Resources Code,／25523; emphasis. applied.)

These sections do not place the authority of the Board at issue, nor do they suggest that state agencies work in other than a complementary manner. Rather, the sole pertinent question is the applicability/effect of SWRCBR 75-58 to this case. Preliminarily, we note the broad definition given to the terms Inland Water and Fresh Inland Waters. They are defined, respectively, under SWRCBR 75-58 as:

> Inland Water — all waterswithin the territorial limits of California exclusive of the waters of the Pacific Ocean outside of enclosed bays, estuaries, and coastal lagoons.
>
> Fresh Inland Waters - those inland waters which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish and wildlife.

The proposed project will use groundwater, which does not fall within~~the~~ SWRCBR 75-58 s definition of fresh inland water. The fact that Applicant will use groundwater is not in dispute.

Staff states that:

> Staff looked at the potential for the proposed project to adversely affect the West Kern Water District, in terms of the potential water supply. The project anticipates using about 3100 acre/feet of water per year. As indicated in the Applicant s testimony, this is ***groundwater.***
>
> ***
>
> The project supply would be from ***groundwater***. The district, given their entitlement to State Water Project water and their extensive ***groundwater*** bank, over 230,000 acre/feet, there should be no adverse effects on the--the district to supply the project. (3/9 RT 1848:18-185:10, emp. applied.)

CURE states that:

> The project would use 3,180 acre feet per year (AFY) of ***groundwater*** from West Kern District (WKWD s) well field in the Tupman area. (CURE s Reply Brief on Phase II issues, p. 6 (with internal footnotes omitted)

None of the parties has argued for SWRCBR 75-58 s application to groundwater. Indeed, the parties simply seem to have assumed the policy s application without a thorough reading of SWRCBR 75-58 s express terms. We are not inclined nor do we have the authority to extend the reach of ~~the~~ SWRCBR 75-58.

Under CURE s analysis, the Energy Commission would be entitled to act as the SWRCB would act to determine the relative merits of state water policy. We reject that approach.

Instead, under the relevant law as we see it, we are left to apply the general guidance provided by the SWRCB policies to the best of our ability. As we have said, we will not expand SWRCB policies beyond their obvious implications. Therefore, we would agree with Applicant and Staff that since there is no new water allocation involved for the proposed project, we would have no occasion to apply SWRCBR 75-58 for other than general guidance.

This, however, does not conclude our analysis because our review of the relevant statutes reveals a common thread. The use of potable domestic water in California is disfavored. In some instances there must be an economic feasibility or cost analysis performed before potable domestic water may be used for power plant cooling. The question of what constitutes reasonable costs is, of course, best suited to the factfinder.

~~CURE makes the foregoing statutory contentions. (CURE s Reply Brief on Phase II issues, pp. 17 21.) In particular, CURE notes that the Water Code:~~

> ~~¥requires the use of recycled water for powerplant cooling when alternate sources are available and~~
> ~~¥restricts the use of potable domestic water for nondomestic purposes. *(Id., at p.18 citing* Water Code,~~ ~~;~~ ~~13551, 13552.6 and 13552.8.)~~ [147]

We ~~believe that these~~find, however, that neither produced water or Tulare Formation water meet the standards set by the mandatory reuse provisions of the Water Code. We reach this conclusion by assuming, without deciding, that WKWD groundwater is potable domestic water within the meaning of the mandatory reuse provisions.

~~Code may restrict~~The mandatory reuse provisions require the use of potable domestic ~~water. In applying these statutory provisions, the threshold question is what definition do we give to ***potable domestic water***. Our research has revealed no judicial decisions dealing with Water Code~~ water for power plant cooling if recycled water :

~~sections 13551, 13552.6 and 13552.8. Other related provisions and plain common sense suggests to us that potable water is water which is supplied for domestic purposes or, in other words, drinking water. (Water Code, 13851; Health & Safety Code, 11384.)~~

---

[147] ~~As we noted earlier, Water Code section 13552.8 authorizes any public agency to require the use of recycled water in cooling towers if it is available under the conditions set forth in section 13550.~~

1. is available;
2. of adequate quality; and
3. ~~There is direct evidence in the record that the groundwater proposed for use as project cooling water could be~~may be provided at a reasonable cost (comparable to or less than the cost of supplying potable domestic water.

~~First, the AFC in Figure 3.4-8 charts the water flow from the WKWD. (Ex. 1, pp. 3-29 — 3-37; Figure 3.4-7.) The chart supports an interpretation that WKWD water is domestic, potable water. Under potable water, the AFC provides that:~~

> ~~The raw water supplied by WKWD meets regulatory standards for safe drinking water. However, drinking water will be supplied as bottled water, and the potable water system will supply sanitary facilities. (Ex. 1, p. 3-37.)~~

~~Second, the FSA states that:~~

> ~~Groundwater levels near WKWD s wellfield have varied greatly over the last five years due to changes in production as well as due to recharge. *(Ibid.)* The groundwater pumped by the district from their wellfield is typically sodium bicarbonate water with low levels of total dissolved solids **and generally meets drinking water standards.**[148] (Ex. 19, Part II, p. 7.)~~

~~Third, the statement of Mr. Patrick in his testimony that:~~

> ~~WKWD supplies its customers with groundwater from the WKWD well field located east of the Tupman area, and WKWD will supply the [proposed project] in the same manner. (Ex. 20, Patrick testimony, Att. A, p. 1.)~~

~~If, indeed, this water is ***potable domestic water*** -- as the term is used in the Water Code -- it could be statutorily disfavored for Applicant to use it for project cooling.~~

~~[148] Under the Water Quality section of the WKWD s Groundwater Management Plan, groundwater quality within the groundwater basin is described as excellent. (Ex. 18, p. 14.)~~

~~After carefully considering the evidence, the Committee has concluded that the record requires augmentation on several points to allow us to reach a finding and conclusion on this issue. Accordingly, we are hereby ordering the parties to augment the record on the points set forth below.~~

~~The parties shall file written briefs on the following issues:~~

~~1.~~Taken together the entire record--the supplemental testimony and briefs filed by Applicant and Staff, together with previous evidence in our record--demonstrates that none of the foregoing standards may be met. (10/26 RT 19:17-59:7; Exs. 19[149]; 46 & Att. B;[150] 49;[151] Staff s Brief on PMPD water ~~Is WKWD groundwater from its well field in the Tupman area ***potable domestic water*** within the meaning~~issues; Applicant s Brief concerning applicability and requirements of Water Code sections 13550, 13551, 13552.6 and ~~13552.8?~~

13552.8. In short, we find that there is no recycled source of water supply, which would trigger application of the mandatory reuse provisions to Applicant. Accordingly, these

~~2.If so, do the above provisions preclude the use of this water for powerplant cooling?~~

~~3.If so, under what conditions may Applicant comply with the relevant statutes provisions for the use of recycled water.~~

~~4.An explanation of other alternatives to the use of recycled water for powerplant cooling, other than the wet/dry or hybrid alternate cooling options that are discussed in this Decision.~~

~~1.The briefs should be filed as set forth in the accompanying Notice of Committee Conference no later than five (5) days prior to the Committee~~

---

[149] Supplemental testimony of Joseph O Hagan on Water Resources. (Ex.19.)

[150] Testimony of Mr. Joseph H. Rowley regarding use of recycled water with attachments. (Ex. 19.)

[151] Testimony of Peter M. MacLaggan concerning applicability and requirements of Water Code // 13550. 13551, 13552.6 and 13552.8.

~~Conference. The Notice sets forth all the requirements for the parties to address the foregoing questions, and other comments to this PMPD.~~provisions do not operate to preclude use of WKWD water as Applicant has proposed.

FINDINGS AND CONCLUSIONS

Based upon the evidence of record before us, we find and conclude as follows:

1. Soils in the project area are susceptible to wind and water erosion.

2. Applicant shall provide a final Streambed Alteration Agreement (SAA) from the California Department of Fish and Game, and a section 401 Water Quality Certification waiver from the Central Valley Regional Water Quality Control Board (CVRWQCB) prior to the beginning of project construction.

3. Applicant has provided a draft Erosion Control and Stormwater Management Plan that will serve as the Stormwater pollution prevention plan as required under the General Construction Stormwater Permit issued by the State Water Resources Control Board.

4. The Conditions of Certification below, in conjunction with the SAA and the CVRWQCB 401-certification waiver, will ensure that soil and water erosion does not create significant adverse environmental impacts.

5. The Elk Hills Power Project will use WKWD groundwater and wet cooling technology in the operation of the powerplant.

6. SWRCBR 75-58 does not prevent the use of water as proposed to supply the Elk Hills project.

7. The WKWD has sufficient water to meet project needs.

8. The use of wet cooling will not cause, or contribute to, any significant adverse environmental impact.

9. Wet cooling will result in more water usage than would dry or wet/dry cooling.

10. There are alternate cooling methods available such as the use of dry or wet/dry cooling technology, which are technically feasible.

11. The use of dry or wet/dry cooling would increase project costs two to three times higher than the costs of wet cooling, and decrease project efficiency.

12. The use of dry or wet/dry cooling would not substantially eliminate or reduce any ~~potential~~significant environmental impact caused by the project.

13. There is an alternate, available source of water in the Tulare Formation for the proposed project s cooling requirements.

14. Neither produced water nor Tulare Formation water meets the criteria of availability, suitable quality, and comparable or less cost as required by the Water Code s mandatory reuse provisions. No other sources of recycled water have been identified.

~~14.~~15. ~~Code~~The Water Code s mandatory reuse provisions, specifically sections 13550, 13551, 13552.6 and 13552.8 ~~may~~do not prohibit the use of WKWD groundwater for ~~powerplant cooling if it is determined~~power plant cooling even if it is deemed to be potable domestic water of these provisions.

~~Therefore, as directed above, we conclude that the record would benefit from further augmentation and have so directed.~~

~~TENTATIVE~~ CONDITIONS OF CERTIFICATION

SOILS&WATER 1: Prior to beginning any clearing, grading or excavation activities associated with project construction, the project owner will develop and implement a Storm Water Pollution Prevention Plan (SWPPP) as required under the General Stormwater Construction Activity Permit.

Verification: Thirty (30) days prior to the start of any clearing, grading or excavation activities, the project owner will submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) to the Energy Commission Compliance Project Manager (CPM) for review and approval.

SOILS&WATER 2: Prior to beginning any clearing, grading or excavation activities associated with project construction, the project owner shall submit an erosion control and revegetation plan for staff approval. The final plan shall contain all the elements of the draft plan with changes made to address the final design of the project.

Verification: The erosion control and revegetation plan shall be submitted to the Energy Commission CPM for approval thirty (30) days prior to the initiation of any clearing, grading or excavation activities.

SOIL&WATER 3: Thirty (30) days prior to commercial operation, the project owner, as required under the General Industrial Activity Storm Water Permit, the project owner will develop and implement a Storm Water Pollution Prevention Plan (SWPPP).

Verification: Two (2) weeks prior to the start of commercial operation, the project owner will submit a copy of the Storm Water Pollution Prevention Plan (SWPPP) to the Energy Commission CPM prepared under requirements of the General Industrial Activity Storm Water Permit.

C. CULTURAL RESOURCES

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. This topic analyzes the structural and cultural evidence of human development in the project vicinity, where cultural resources could be disturbed by project excavation and construction. Federal and state laws require a project developer, such as PEF, to implement mitigation measures that avoid adverse impacts to *significant* cultural resources.[56]

SUMMARY AND DISCUSSION OF THE EVIDENCE

Cultural resources are fundamental to understanding human history and heritage. Evidence of California s early inhabitants is becoming increasingly vulnerable due to the ongoing development, industrialization, and urbanization of the state. Cultural resources may be visible on the ground or deeply buried as a result of sedimentation or subsequent uses of the land. These resources provide information about human history and the patterns of human adaptation to environmental change. (Ex. 35, p. 271.)

1. Methodology

To determine whether cultural resources exist in the project vicinity, Applicant conducted research that included a bibliographic review and field surveys in the area of potential effect (APE), a 0.5-mile radius of the project site and linear

[56] Potential impacts are considered only for those cultural resources that are deemed significant or important under criteria established by federal and state guidelines. (National Guidelines for Historic Preservation Projects, 36 CFR 800 et seq; CEQA Guidelines, Title 14, Cal. Code of Regs./15064.5; see also, Title 14, Cal. Code of Regs.,/4850 et seq.) If a cultural resource is deemed significant, it is eligible for listing on the National Register of Historic Places. (See, the National Historic Preservation Act, 16 USC 470, Section 106; California Register of Historical Resources, Pub. Res. Code,/5024.1.)

facility alignments. (Ex 1,／5.7.1.1; Ex, 25, p. 1.) Three aspects of cultural resources were addressed in this research: prehistoric archaeological resources, enthnographic resources, and historic archaeological resources. (*Ibid*.)

Applicant initially reviewed cultural resource data housed at the Southern San Joaquin Valley Information Center of the California Historical Resources Information Center (CHRIS). (Ex. 1,／5.7.1.10.) Within the APE, 12 studies and nine archaeological sites are on file with CHRIS. Of the known sites, four are milling stone (food processing) complexes, two are burial locations, and one is possibly the ethnographic village of *Cheut Pahbe*. (Ex. 35, p. 278.) None have been formally evaluated according to criteria for eligibility to the National Register of Historic Places. (*Op. Cit.*) A single historical site within the project footprint is an historic road, built in the mid-1800s, used primarily for sheep herding but this is not considered a significant site because it has been incorporated into the contemporary infrastructure. Project facilities will cross the California Aqueduct, a recorded archaeological site. Designated state landmarks outside of the project footprint include Fort Tejon State Historic Park (No. 129), and the Sebastian Indian Reservation (No. 133). (*Ibid.*)

Applicant s walking survey of the project site and linear facilities revealed 10 new archaeological sites and 10 isolates. (Ex. 1, p. 5.7-14; Ex. 25, pp. 5-8.) Four of the new sites, either within or adjacent to the APE, were recommended for testing to evaluate their significance. Results of the testing and all associated documentation are contained in Exhibits 11, 12, and 22. Only one identified site (TR 3), adjacent to the Pastoria Substation Access Road, is close enough to be subject to potential disturbance by project activities; however, strict monitoring and avoidance will prevent impact to this resource. (Ex. 35, p. 286.)

The California Native American Heritage Commission (NAHC) maintains records and maps of traditional resource sites located throughout the state. There are no records of sacred lands in the project vicinity recorded with the NAHC. For

additional information, Applicant sent letters and maps to 10 interested groups and individuals recommended by NAHC. Responses were received from two individuals who expressed concern about the Old Sebastian Reservation, the ethnographic village of *Pahbe* or *Checot,* the area of Lake Misjamin, which may have been occupied by the Tulamni, and the location of *Mitochea* visited by the Spanish explorers. From subsequent correspondence and consultant research, these localities, except for TR 3 noted above, are believed to be outside the project area. (Ex. 35, p. 280.)

Three Native American monitors were onsite for a total of nine days during all sub-surface field survey activities. A rotation system was used to allow all concerned and interested Native Americans to observe. Procedures were in place for the proper treatment of Native American remains pursuant to Public Resources Code, section 5097.98, but no remains were found. (Ex. 35, p. 281; Exs. 11, 12, and 22.)

Ms. Dee Dominguez, Chairwoman of the Kitanemuk Tribe, the Tinoqui Chalola Council of Kitanemuk and Yowlumne Tejon Indians, presented public comment at the evidentiary hearings. (9/18 RT 123.) She asserted that the record did not accurately characterize the ethnographic background of the Native American peoples in the project vicinity. She further indicated that Tejon Ranch was inhabited by the Kitanemuk Tribe, whose burial sites could potentially be affected by project activities. According to Ms. Dominguez, the Kitanemuk Tribe prefers that any remains be left in place. (*Id*., at 126.) To remedy her concerns about accurate historical reporting, the parties stipulated and the Committee agreed to accept her interpretation of the historical data as Exhibit 60.

2. Potential Impacts

No potentially significant cultural resources were observed within the project footprint. Resource sites that were observed near the linear facility alignments

will be protected or avoided by monitoring and/or rerouting where necessary. (Ex. 35, pp. 286-287, 290-291.)

Project excavation and construction activities will cause sub-surface ground disturbance that may reveal previously unrecorded cultural resources. (Ex. 35, pp. 283-284.) According to Staff, the existence of numerous known cultural resources in the vicinity creates the potential for impacts to unknown resources. (*Ibid.*) In addition, potential cumulative impacts may occur as increasing development opens more undisturbed areas and exposes sensitive cultural resource sites. Staff believes that implementation of appropriate measures is essential to the protection of these resources and for the recovery of information about important regional history. (*Id*., at 288.)

3. Mitigation

The preferred mitigation for impacts to cultural resources is preservation by avoiding areas where resources are known to exist and by monitoring areas where they may be discovered. (Ex. 35, p. 289.) When unanticipated resources are encountered, archaeological methods must be used to evaluate their significance in accordance with applicable guidelines. (*Id*., at 286.)

To prevent adverse impacts to known or unknown resources, PEF proposed a six-point cultural resource-monitoring program that would be implemented for areas of high sensitivity. (Ex. 1, ⁄ 5.7.3.1.) The steps listed below are incorporated and explained more fully in the Conditions of Certification:

- Avoidance
- Physical Demarcation and Protection
- Worker Education
- Archeological Monitoring
- Native American Monitoring
- Significance Review

The parties agreed that a qualified cultural resource professional would be designated to conduct pre-construction surveys along the final linear routes as well as to monitor for cultural resources throughout the pre-construction and construction periods. (Ex. 35, p. 292.) Condition **CUL-3** requires PEF to develop and implement a Cultural Resource Monitoring and Mitigation Plan. If cultural resources are encountered during construction activities, the totality of mitigation measures contained in the Conditions of Certification will ensure that such resources are protected. (*Ibid*.)

FINDINGS AND CONCLUSIONS

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

1. There are several known cultural resources within the critical Area of Potential Effect (APE).
2. Although there is no surface evidence of cultural resources within the project footprint, several resource sites were discovered within the APE survey corridor adjacent to the linear facility alignments.
3. Linear alignments will be rerouted if necessary to avoid cultural resources.
4. Native American sacred properties may be located within the project area although none are recorded with the Native American Heritage Commission.
5. There is potential for impacts to unknown cultural resources that may not be discovered until subsurface soils are exposed during excavation and construction.
6. The mitigation measures contained in the Conditions of Certification below will ensure that direct, indirect, or cumulative adverse impacts to cultural resources do not occur as a result of project activities.

The Commission therefore concludes that with implementation of the Conditions of Certification below, PEF will conform with all applicable laws, ordinances,

regulations, and standards relating to cultural resources as set forth in the pertinent portions of **APPENDIX A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of construction-related vegetation clearance, or earth- disturbing activities or project site preparation; or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the California Energy Commission (Energy Commission) Compliance Project Manager (CPM) with the name and statement of qualifications for its designated cultural resource specialist and alternate cultural resource specialist, if an alternate is proposed, who will be responsible for implementation of all cultural resources conditions of certification.

Protocol: The statement of qualifications for the designated cultural resource specialist and alternate shall include all information needed to demonstrate that the specialist meets at least the minimum qualifications specified by the National Park Service, Heritage Preservation Services. Alternatively, the archaeologist shall be qualified by the Register of Professional Archaeologists (RPA). The minimum qualifications include the following:

1. a graduate degree in archaeology, cultural resource management, or a comparable field;
2. at least three years of archaeological resource evaluation, management, impact mitigation and field experience in California; and
3. at least one year s experience in each of the following areas:
    a. leading archaeological resource field surveys;
    b. leading site and artifact mapping, recording, and recovery operations;
    c. marshaling and use of equipment necessary for cultural resource recovery and testing;
    d. preparing recovered materials for analysis and identification;
    e. determining the need for appropriate sampling and/or testing in the field and in the laboratory;
    f. directing the analyses of mapped and recovered artifacts of both Native American and historical origin;

g. completing the identification and inventory of recovered cultural resource materials; and

h. preparing appropriate reports to be filed with the receiving curation repository, the State Historic Preservation Officer (SHPO), and all appropriate regional information center(s) CHRIS.

The statement of qualifications for the designated cultural resource specialist shall include:

1. a list of specific projects the specialist has previously directed;
2. the role and responsibilities of the specialist for each project listed; and
3. the names and phone numbers of contacts familiar with the specialist s work on these referenced projects.

If the designated specialist does not intend to personally supervise all surveys, studies, monitoring, or excavations, the principal shall designate the name and qualifications of a comparably qualified alternate cultural resource specialist. The specialist shall also provide the names and qualifications of any potential consultants such as historian or architectural historian who may participate.

Verification: At least 90 days prior to the start of construction-related vegetation clearance, or earth-disturbing activities or project site preparation, or the movement or parking of heavy equipment onto or over the project surface, the project owner shall submit the name and statement of qualifications of its designated cultural resource specialist and alternate cultural resource specialist, if an alternate is proposed, to the CPM for review and approval.

At least 10 days but no more than 30 days prior to the start of any ground-disturbing action, the project owner shall confirm in writing to the CPM that the approved designated cultural resource specialist will be available at the start of earth-disturbing activities and is prepared to implement the cultural resources conditions of certification.

At least 10 days prior to the termination or release of a designated cultural resource specialist or field director, the project owner shall obtain CPM approval of the replacement professionals by submitting to the CPM the name and resume of the proposed new designated individuals.

CUL-2 Prior to the start of any construction-related vegetation clearance, or earth-disturbing activities or project site preparation, or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the designated cultural resources specialist and the CPM with maps and drawings showing

the footprint of the power plant and all linear facilities. Maps provided will include the USGS 7.5 minute topographic quadrangle map and a map at an appropriate scale (e.g., 1:2000 or 1 = 200) for plotting individual artifacts. If the designated cultural resource specialist requests enlargements or strip maps for linear facility routes, the project owner shall provide them. In addition, the project owner shall provide a set of these maps to the CPM at the same time that they are provided to the specialist. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the cultural resources specialist and the CPM within five days. Maps shall show the location of all areas where surface disturbance may be associated with project related access roads, and any other project components.

Verification: At least 75 days prior to the start construction-related vegetation clearance, or earth-disturbing activities or project site preparation on the project, or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the designated cultural resources specialist and the CPM with the maps and drawings. Copies of maps or drawings reflecting changes to the footprint of the power plant and/or linear facilities shall be submitted to the cultural resources specialist and the CPM within five days of the changes.

CUL-3 Prior to the start of construction-related vegetation clearance or earth-disturbing activities, or project site preparation, or the movement or parking of heavy equipment onto or over the project surface, the designated cultural resources specialist shall prepare, and the project owner shall submit to the CPM for review and written approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP), identifying general and specific measures to minimize potential impacts to cultural resources within areas subject to project related earth disturbance. Approval of the CRMMP by the CPM shall occur prior to any vegetation clearance or other earth-disturbing activities of construction or site preparation.

Protocol: The Cultural Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

a. A proposed research design for both prehistoric and historical archaeology that includes a discussion of questions that may be answered by the mapping, data and artifact recovery conducted during monitoring and mitigation activities, and by the analysis of recovered data and materials. It shall provide details of the data needed to address the research issues and the methods proposed to obtain such data.

b. A discussion of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during the pre-construction, construction, and post-construction analysis phases of the project;

c. Identification of the person(s) expected to perform each of the tasks, a description of each team member s qualifications (please provide resumes) and responsibilities, the structure of the mitigation team, and the reporting relationships between project construction management and the monitoring and mitigation team. The cultural resources team shall include one member professionally qualified in historical or industrial archaeology;

d. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, the areas where they will be needed, and their role and responsibilities;

e. A discussion of measures such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during pre-construction, construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address how these measures will be implemented prior to the start of earth-disturbing activities and how long they will be needed to protect the resources from project-related effects;

f. A discussion of where monitoring of project activities is deemed necessary by the designated cultural resource specialist. Except in the following specified areas, the specialist will determine the size or extent of the areas where monitoring is to occur and will establish the percentage of the time that the monitor(s) will be present. Monitoring shall occur during earth-disturbing activities or site preparation in the vicinity of TR 3, TR 4, TR 5 and TR 6. Identification of the monitoring requirement(s) will include areas where other specialists, e.g., biologists, may be conducting their own mitigating programs.

g. A discussion of the requirement that all cultural resources encountered will be recorded and mapped (may include photos) and all significant or diagnostic resources will be collected for analysis and eventual curation into a retrievable storage collection in a public repository or museum that meets the State of California Guidelines for the Curation of Archaeological Collections.

h. A discussion of the availability and the designated specialist s access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during earth-disturbing activities or construction; and

i. Identification of the public institution that has agreed to receive any data and cultural resources recovered during project-related monitoring and mitigation work. Discussion of the requirements, specifications, or funding needed for the materials to be delivered for curation and how they will be met. Also include the name and phone number of the contact person at the institution.

Verification: At least 60 days prior to the start any construction-related vegetation clearance or earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the Cultural Resources Monitoring and Mitigation Plan, prepared by the designated cultural resource specialist, to the CPM for review and approval.

CUL-4 Prior to the start of any construction-related vegetation clearance, or earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, the designated cultural resources specialist shall prepare an employee training program. The project owner shall submit the cultural resources training program to the CPM for review and approval.

The training program shall discuss the potential to encounter cultural resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. The program shall include the set of resource reporting procedures and work curtailment procedures that workers are to follow if previously unknown cultural resources are encountered during project activities. The training program shall be presented by the designated cultural resource specialist or qualified individual(s) approved by the CPM, and may be combined with other training programs prepared for biological resources, paleontologic resources, hazardous materials, or any other areas of interest or concern.

Verification: At least 60 days prior to the start of construction-related vegetation clearance or earth-disturbing activities or project site preparation, or the movement or parking of heavy equipment onto or over the project surface, the project owner shall submit to the CPM for review and approval, the proposed employee training program, the set of reporting procedures, and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during earth-disturbing activities or construction. The project owner shall provide the name and r sum of the individual(s) performing the training.

CUL-5 Prior to the start of construction-related vegetation clearance, or earth- disturbing activities or project site preparation or the movement

or parking of heavy equipment onto or over the project surface and throughout the project construction period as needed for all new employees, the project owner shall ensure that the designated cultural resource trainer(s) provide(s) the CPM-approved cultural resources training to all project managers, construction supervisors, and workers. The project owner shall ensure that the designated trainer provides the workers with the CPM-approved set of procedures for reporting any sensitive resources that may be discovered during project-related ground disturbance and the work curtailment procedures that the workers are to follow if previously unknown cultural resources are encountered during earth-disturbing activities or construction.

Verification: Within 7 days of the start of construction-related vegetation clearance, or earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the CPM with documentation that the designated cultural resources trainer(s) has/have provided the CPM-approved cultural resources training and the set of reporting and work curtailment procedures to all project managers, construction supervisors, and workers hired before the start of earth-disturbing activities.

In each Monthly Compliance Report after the start of earth-disturbing or earth moving activities, the project owner shall provide the CPM with documentation that the designated cultural resource trainer(s) has/have provided to all project managers hired in the month to which the report applies the CPM-approved cultural resources training and the set of reporting and work curtailment procedures.

CUL-6 The designated cultural resource specialist, alternate cultural resource specialist or the specialist s delegated monitor(s) shall have the authority to halt or redirect earth-disturbing activities or construction, if previously unknown cultural resource sites or materials are encountered or if an unforeseen impact to an identified cultural resource is recognized during project-related land clearing, grading, augering, excavation or other earth-disturbing activities. Cultural resources monitors shall be members of the cultural resources team with a background and experience appropriate to the project area being monitored.

If such resources are found or an unforeseen impact is recognized, the specialist shall contact the CPM as soon as possible for a determination of significance.

If such resources are found or an unforeseen impact is recognized and the CPM determines that they are or may be significant, the

halting or redirection of earth-disturbing activities or construction shall remain in effect until:

a. the specialist, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and

b. any needed data recovery and mitigation has been completed.

The designated cultural resources specialist, the project owner, and the CPM shall confer within five working days of the notification of the CPM to determine what, if any, data recovery or other mitigation is needed.

If data recovery or other mitigation measures are required, the designated cultural resource specialist and team members shall monitor earth-disturbing and construction activities and implement the agreed upon data recovery and mitigation measures, as needed.

All required data recovery and mitigation shall be completed expeditiously unless all parties agree to additional time.

Verification: 30 days prior to the start of construction-related vegetation clearance, or earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, the project owner shall provide the CPM with a letter confirming that the designated cultural resources specialist, and/or alternate cultural resource specialist and delegated monitor(s) have the authority to halt earth-disturbing or construction activities in the vicinity of a cultural resource find.

For any cultural resource encountered that the specialist determines is or may be significant, the project owner shall notify the CPM within 24 hours unless there is an intervening weekend. If there is an intervening weekend, the project owner shall notify the CPM on the Monday following the weekend.

For any cultural resource encountered that the specialist determines is not significant, the project owner shall notify the CPM within 72 hours.

CUL-7 Prior to the start of any construction-related vegetation clearance, or earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, and each week throughout the project construction period, the project owner shall provide the designated cultural resource specialist with a current schedule of anticipated project activity in the following month. The schedule shall include a map indicating the area(s) where ground disturbing or construction activities will occur or where other specialists may be conducting mitigation measures. The designated cultural resources specialist shall consult daily with the project superintendent or construction field manager to confirm the area(s) to be worked on the next day(s).

Verification: At least 10 days prior to the start of project construction-related vegetation clearance, earth-disturbing activities or project site preparation or the movement or parking of heavy equipment onto or over the project surface, and in each Monthly Compliance Report thereafter, the project owner shall provide the CPM with a copy of the weekly schedule of the construction activities. The project owner shall notify the CPM when all ground disturbing activities, including landscaping, are completed.

CUL-8 Throughout the pre-construction reconnaissance surveys and the monitoring and mitigation phases of the project, the designated cultural resources specialist and/or alternate cultural resource specialist and delegated monitor(s) shall keep a daily log of any resource finds, and the progress or status of the resource monitoring, collections, mitigation, preparation, identification, and analytical work being conducted for the project. The daily logs shall indicate by tenths of a post mile, where and when monitoring has taken place, where monitoring has been deemed unnecessary, and where cultural resources were found.

The designated specialist shall prepare a weekly summary of the daily logs on the progress or status of cultural resource-related activities.

The designated resource specialist and delegated monitor(s) may informally discuss the cultural resource monitoring and mitigation activities with Commission technical staff.

Verification: Throughout any construction-related vegetation clearance, or earth-disturbing activity or project site preparation or the movement or parking of heavy equipment onto or over the project surface, and the project construction period, the project owner shall ensure that the daily logs prepared by the designated cultural resource specialist and delegated monitor(s) are available for periodic audit by the CPM.

CUL-9 In addition to the areas specified in **CUL-3** (f), the designated cultural resource specialist or designated monitor(s) shall be present at all times the specialist deems appropriate to monitor construction-related grading, excavation, trenching, augering, or other disturbance of existing surface in the vicinity of previously recorded archaeological sites and in areas where cultural resources have been identified or are potentially present.

Protocol: If the designated cultural resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, except in the areas specified in **CUL-3** (f), the designated specialist shall notify the project owner of the changes. The designated cultural resource specialist shall use post-mile markers and boundary stakes placed by

the project owner to identify areas where monitoring is being reduced or is no longer deemed necessary.

Verification: Throughout the project pre-construction and construction period the project owner shall include in the Monthly Compliance Reports to the CPM copies of the weekly summary reports prepared by the designated cultural resource specialist regarding project-related cultural resource monitoring.

CUL-10 If the project owner obtains a section 404 permit from the U.S. Army Corps of Engineers (USACE), the project owner shall ensure that the designated cultural resource specialist obtains any archaeological resource permit(s) which may be required by the U.S. Army Corps of Engineers. If cultural resources should be encountered in an area covered by such permit(s), the project owner and cultural resource specialist will consult with the USACE regarding compliance with Section 106 of the National Historic Preservation Act.

Verification: A copy of any archaeological resource permit(s) obtained by the cultural resource specialist shall be provided to the CPM in the next Monthly Compliance Report following its receipt or renewal. If cultural resource management and/or data recovery are necessary under any archaeological resource permit(s), copies of any reports required under the permit(s) shall be submitted to the CPM in the next Monthly Compliance Report following completion of such reports.

CUL-11 The project owner shall ensure that the designated cultural resource specialist performs the supervision, recovery, preparation for analysis, analysis, preparation for curation, and delivery for curation of all cultural materials encountered and collected during surveys, monitoring, testing, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in its compliance files, copies of signed contracts or agreements with the museum, university, or other appropriate research specialists responsible for cultural resource services. The project owner shall maintain these files for the life of the project, and the files shall be available for periodic audit by the CPM. The specific locations of sensitive cultural resource sites shall be kept confidential and accessible only to qualified cultural resource specialists.

CUL-12 Following the completion of data recovery and all mitigation work, the project owner shall ensure that the designated cultural resource specialist prepares a proposed scope of work for the Cultural Resources Report. The project owner shall submit the proposed scope of work to the CPM for review and approval.

Protocol: The proposed scope of work shall include (but not be limited to):

a. discussion of any analysis to be conducted on recovered cultural resource materials;

b. discussion of possible results and interpretation;

c. research questions which may be answered or raised by analysis of the recovered data; and

d. estimate of the time needed to complete the analysis of the recovered cultural materials and to prepare the Cultural Resources Report.

Verification: The project owner shall ensure that the designated cultural resources specialist completes the proposed scope of work within 90 days following completion of the data recovery and site mitigation work. Within 7 days after completion of the proposed scope of work, the project owner shall submit it to the CPM for review and approval.

CUL-13 The project owner shall ensure that the designated cultural resources specialist prepares a Cultural Resources Report. The project owner shall submit the report to the CPM for review and approval.

Protocol: The Cultural Resources Report shall include (but not be limited to) the following:

1. For all projects:

   a. a description of pre-project literature search, surveys, and any testing activities;

   b. maps showing areas surveyed or tested;

   c. description of any monitoring activities;

   d. maps depicting areas monitored and site locations on 7.5 minute USGS topographic base; and

   e. conclusions and recommendations.

2. For projects in which cultural resources were encountered, include the items above and also provide:

   a. records and maps for sites and isolates;

   b. description of any testing and determinations of significance, and potential eligibility

c. discussion of research questions raised or addressed by data from the project.

3. For projects for which cultural resource data were recovered, include a. and b. above, plus the following:

   a. description of the methods used in the field and laboratory;

   b. verbal description and graphic illustration of recovered cultural materials;

   c. results and findings of any special analyses conducted on recovered cultural materials;

   d. catalogue of recovered cultural materials; interpretation of the site(s) with regard to the research design; and

   e. the name and location of the qualified public repository receiving the recovered cultural resources for curation.

Verification: The project owner shall ensure that the designated cultural resource specialist completes the Cultural Resources Report within 90 days following completion of the collections analysis. Within 7 days after completion of the report, the project owner shall submit the Cultural Resources Report to the CPM for review and approval.

CUL-14 The project owner shall submit an original copy, an original-quality copy, and a computer disc copy (or other electronic format required by the repository) of the CPM-approved Cultural Resource Report to the public repository to receive the recovered data and materials for curation, with copies to the State Historic Preservation Officer (SHPO) and to the appropriate regional archaeological information center(s). Any disc files must meet SHPO requirements for format and content.

Protocol: The copies of the Cultural Resource Report to be sent to the curating repository, the SHPO, and the regional information center shall include the following:

a. originals or original-quality copies of all text;

b. originals of any topographic maps showing survey, site, and monitored resource locations;

c. originals or original-quality copies of drawings of significant or diagnostic materials found during survey, monitoring, testing or mitigation, and subject to analysis and evaluation; and

d. photographs of the cultural resource site(s) and the various cultural resource materials recovered during project monitoring and mitigation and subjected to post-recovery analysis and evaluation. The project owner shall provide the curating repository with a set of negatives for all of the photographs.

Verification: Within 30 days after receiving approval of the Cultural Resources Report, the project owner shall provide to the CPM documentation that the report has been sent to the public repository receiving the recovered data and materials for curation, the SHPO, and the appropriate archaeological information center.

For the life of the project, the project owner shall maintain in its compliance files copies of all documentation related to the filing of the CPM-approved Cultural Resources Report with the public repository receiving the recovered data and materials for curation, the SHPO, and the appropriate CHRIS information center.

CUL-15 Except for those materials subject to PRC,/5097.99, following the filing of the CPM-approved Cultural Resource Report with the appropriate entities specified in **CUL-14** above, the project owner shall ensure that all cultural resource materials, maps and data collected during survey, testing, and data recovery and mitigation for the project are delivered to a public repository that meets the State of California Guidelines for the Curation of Archeological Collections for the curation of cultural resources. The project owner shall pay any fees for curation required by the repository. Collections and documents will be prepared to satisfy the requirements of the designated repository.

Verification: The project owner shall ensure that all recovered cultural resource materials are delivered for curation within 30 days after providing the CPM-approved Cultural Resource Report to the entities specified in **CUL-14.**

For the life of the project, the project owner shall maintain in its compliance files, copies of signed contracts or agreements with the public repository to which the project owner has delivered for curation all cultural resource materials collected during cultural resource services for the project, except for materials subject to PRC,/5097.99.

CUL-16 Prior to the start of any vegetation clearing or other earth-disturbing activity related to site preparation, construction, or site testing, the project owner and designated cultural resources specialist shall consult with the Native American tribal representatives to develop agreement(s) for qualified monitors as specified in the NAHC Guidelines for Monitoring. The monitor(s) shall be considered as member(s) of the cultural resource team and shall be present during pre-construction and construction phases of the project whenever cultural resources monitoring is occurring.

Verification: At least 30 days prior to initiating any ground clearing or surface disturbing activity, the project owner shall provide the CPM with a

copy of all finalized agreements for Native American monitors. If efforts to obtain the services of qualified Native American monitors prove unsuccessful, the project owner shall immediately inform the CPM who will initiate a resolution process.

D. GEOLOGY AND PALEONTOLOGY

This section reviews the project s potential impacts to significant geological and paleontological resources, and surface water hydrology. The analysis also evaluates whether project-related activities could potentially result in public exposure to geological hazards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The site is located at the mouth of Pastoria Canyon in an area known as the Tejon Embayment. Several soil strata are found in the site vicinity including dense fanglomerate and alluvium at the surface level. (Ex. 35, p. 406.) No permanent surface water bodies are located on or adjacent to the site; however, Pastoria Creek, an ephemeral stream, is located 1,000 feet west of the project footprint. The site varies in elevation from 1,058 to 1,088 feet above mean sea level. (*Id*., p. 407.)

1. Potential for Seismic Events

There are several active faults within the project vicinity, including the Pleito fault, one kilometer south of the site; the Springs fault, crossed by the gas pipeline at milepost 6.75; and the White Wolf fault, about 16 kilometers north of the site. (Ex. 35, p. 407.) Several other faults are located within 100 kilometers of the site. Applicant s testimony indicates that strong seismic shaking associated with these faults has occurred at the site and similar seismic events are predicted in the future. (Ex. 1,/5.3.1.1.4 et seq.; Ex. 7)

The project will be designed to withstand strong seismic ground shaking in accordance with California Building Code standards for seismic zone 4. (Ex. 1,/ 5.3.1.1.6; see also, **Facility Design** section of this Decision.) Applicant conducted a site-specific study to determine the potential for ground rupture,

liquefaction, hydrocompaction, and shrink-swell behavior in soils beneath the project components and linear facilities that would present potential hazards associated with strong seismic shaking. (Ex. 7; Ex. 1,/5.3.1.1.6.) Final project design will incorporate measures to mitigate any potential seismic damage resulting from these geological phenomena. (Ex. 1, Appendix D.) Condition **GEO-2** requires the project owner to submit a final Engineering Geology Report.

2. Potential for Flooding

The project site is depicted as an area of minimal flooding on a Federal Emergency Management Agency (FEMA) flood insurance map. (Ex. 35, p. 410.) A storm water retention pond will be constructed onsite. A portion of the onsite drainage will be captured in the ephemeral stream channel onsite and discharged off site to the south. Further, a drainage diversion berm will be constructed between Pastoria Creek drainage and the PEF footprint to prevent localized flooding of the site in the event of a water release from the California Aqueduct. This diversion berm will prevent flooding of the facility during a worst-case 100 year, 24-hour storm event. (*Ibid*.) The site flood control, grading, and drainage measures will be designed in accordance with applicable California Building Code provisions. (*Id.,* p. 412.) See, Condition **GEO-2.**

3. Potential Impacts to Geological/Paleontological Resources

No geological resources were identified at the site or along the linear facility corridors. (Ex. 35, p. 409.) Further, no in-situ paleontological resources were found during the course of Applicant s field surveys. (Ex. 1, Appendix K.) Applicant indicated that alluvium and other soil formations in the vicinity have yielded vertebrate fossils but the lack of fossils near the project and the age of the alluvium suggest a low potential for paleontological resources. (*Ibid.*; Ex. 35, pp. 409-410.) Conditions **PAL-1** through **PAL-7** will ensure that impacts on paleontological resources will be reduced to insignificant levels should they be

encountered during project-related activities. These conditions require Applicant to implement a Paleontological Resources Monitoring and Mitigation Plan to minimize impacts to undiscovered fossil materials at the site.

FINDINGS AND CONCLUSIONS

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

1. The project and linear facilities are located in seismic zone 4, which presents significant earthquake hazards.
2. The project and linear facilities will be designed to withstand strong earthquake shaking in accordance with the California Building Code.
3. Final project design will include measures to mitigate potential seismic risk from ground rupture, liquefaction, hydrocompaction, and shrink-swell soils associated with strong seismic shaking.
4. Potential flooding of the site will be mitigated by drainage measures incorporated into project design.
5. The project will not cause significant adverse impacts to surface water hydrology.
6. There is no evidence of geological or paleontological resources at the project site or along the linear facility corridors.
7. To prevent impacts to unknown sensitive paleontological resources, the project owner will implement a Paleontological Resources Monitoring and Mitigation Plan.
8. With implementation of the Conditions of Certification, the project will conform with all applicable laws, ordinances, regulations, and standards relating to geology and paleontological resources as identified in the pertinent portions of APPENDIX A of this Decision.

The Commission therefore concludes that Implementation of the Conditions of Certification, below, will ensure that project activities do not cause adverse

impacts to either geological or paleontological resources or expose the public to geological hazards.

CONDITIONS OF CERTIFICATION

GEO-1 Prior to the start of construction, the project owner shall assign to the project an engineering geologist(s), certified by the State of California, to carry out the duties required by the 1998 edition of the California Building Code (CBC) Appendix Chapter 33, Section 3309.4. The certified engineering geologist(s) assigned must be approved by the Compliance Project Manager (CPM). The functions of the engineering geologist can be performed by the responsible geotechnical engineer, if that person has the appropriate California license.

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the Chief Building Official (CBO)) prior to the start of construction, the project owner shall submit to the CPM for approval the name(s) and license number(s) of the certified engineering geologist(s) assigned to the project. The submittal should include a statement that CPM approval is needed. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of its findings within 15 days of receipt of the submittal. If the engineering geologist(s) is subsequently replaced, the project owner shall submit for approval the name(s) and license number(s) of the newly assigned individual(s) to the CPM. The CPM will approve or disapprove of the engineering geologist(s) and will notify the project owner of the findings within 15 days of receipt of the notice of personnel change.

GEO-2 The assigned engineering geologist(s) shall carry out the duties required by the 1998 CBC, Appendix Chapter 33, Section 3309.4 Engineered Grading Requirement, and Section 3318.1 — Final Reports. Those duties are:

1. Prepare the Engineering Geology Report. This report shall accompany the Plan and Specifications when applying to the CBO for the grading permit.
2. Monitor geologic conditions during construction.
3. Prepare the Final Engineering Geology Report.

Protocol: The Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3309.3 Grading Designation, shall include an adequate description of the geology of the site, conclusions and recommendations regarding the effect of geologic conditions on

the proposed development, and an opinion on the adequacy of the site for the intended use as affected by geologic factors.

The Final Engineering Geology Report to be completed after completion of grading, as required by the 1998 CBC Appendix Chapter 33, Section 3318.1, shall contain the following: A final description of the geology of the site and any new information disclosed during grading; and the effect of same on recommendations incorporated in the approved grading plan. The engineering geologist shall submit a statement that, to the best of his or her knowledge, the work within their area of responsibility is in accordance with the approved Engineering Geology Report and applicable provisions of this chapter.

Verification: (1) Within 15 days after submittal of the application(s) for grading permit(s) to the CBO, the project owner shall submit a signed statement to the CPM stating that the Engineering Geology Report has been submitted to the CBO as a supplement to the plans and specifications and that the recommendations contained in the report are incorporated into the plans and specifications. (2) Within 90 days following completion of the final grading, the project owner shall submit copies of the Final Engineering Geology Report required by the 1998 CBC Appendix Chapter 33, Section 3318 Completion of Work, to the CBO, and to the CPM on request.

PAL-1 Prior to the start of any project-related construction activities (defined as any construction-related vegetation clearance, ground disturbance and preparation, and site excavation activities), the project owner shall ensure that the designated paleontological resource specialist approved by the CPM is available for field activities and prepared to implement the conditions of certification.

The designated paleontological resources specialist shall be responsible for implementing all the paleontological conditions of certification and for using qualified personnel to assist in this work.

Protocol: The project owner shall provide the CPM with the name and statement of qualifications for the designated paleontological resource specialist.

The statement of qualifications for the designated paleontological resources specialist shall demonstrate that the specialist meets the following minimum qualifications: a degree in paleontology or geology or paleontological resource management; and at least 3 years of paleontological resource mitigation and field experience in California, including at least 1 year s experience leading paleontological resource mitigation and field activities.

The statement of qualifications shall include a list of specific projects the specialist has previously worked on; the role and responsibilities of the specialist for each project listed; and the names and phone numbers of contacts familiar with the specialist s work on these referenced projects.

If the CPM determines that the qualifications of the proposed paleontological resource specialist do not satisfy the above requirements, the project owner shall submit another individual s name and qualifications for consideration.

If the approved, designated paleontological resource specialist is replaced prior to completion of project mitigation, the project owner shall obtain CPM approval of the new designated paleontological resource specialist by submitting the name and qualifications of the proposed replacement to the CPM, at least 10 days prior to the termination or release of the preceding designated paleontological resource specialist.

Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

Verification: At least 90 days prior to the start of construction, the project owner shall submit the name and resume and the availability for its designated paleontological resource specialist, to the CPM for review and approval. The CPM shall provide written approval or disapproval of the proposed paleontological resource specialist.

At least 10 days prior to the termination or release of a designated paleontological resource specialist, the project owner shall obtain CPM approval of the replacement specialist by submitting to the CPM the name and resume of the proposed new designated paleontological resource specialist. Should emergency replacement of the designated specialist become necessary, the project owner shall immediately notify the CPM to discuss the qualifications of its proposed replacement specialist.

PAL-2 Prior to the start of project construction, the designated paleontological resource specialist shall prepare a Paleontological Resources Monitoring and Mitigation Plan to identify general and specific measures to minimize potential impacts to sensitive paleontological resources, and submit this plan to the CPM for review and approval. After CPM approval, the project owner s designated paleontological resource specialist shall be available to implement the Monitoring and Mitigation Plan, as needed, throughout project construction.

In addition to the project owner s adoption of the guidelines of the Society of Vertebrate Paleontologists (SVP 1994) the Paleontological Resources Monitoring and Mitigation Plan shall include, but not be limited to, the following elements and measures:

- A discussion of the sequence of project-related tasks, such as any pre-construction surveys, fieldwork, flagging or staking; construction monitoring; mapping and data recovery; fossil preparation and recovery; identification and inventory; preparation of final reports; and transmittal of materials for curation;
- Identification of the person(s) expected to assist with each of the tasks identified within this condition for certification, and a discussion of the mitigation team leadership and organizational structure, and the inter-relationship of tasks and responsibilities;
- Where monitoring of project construction activities is deemed necessary, the extent of the areas where monitoring is to occur and a schedule for the monitoring;
- An explanation that the designated paleontological resource specialist shall have the authority to halt or redirect construction in the immediate vicinity of a vertebrate fossil find until the significance of the find can be determined;
- A discussion of equipment and supplies necessary for recovery of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
- Inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontological resources; and
- Identification of the institution that has agreed to receive any data and fossil materials recovered during project-related monitoring and mitigation work, discussion of any 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.

Verification: At least 60 days prior to the start of construction on the project, the project owner shall provide the CPM with a copy of the Monitoring and Mitigation Plan prepared by the designated paleontological resource specialist for review and approval. If the plan is not approved, the project owner, the designated paleontological resource specialist, and the CPM shall meet to discuss comments and negotiate necessary changes.

PAL-3 Prior to the start of construction, and throughout the project construction period as needed for all new employees, the project owner and the designated paleontological resource specialist shall prepare and conduct CPM-approved training to all project managers,

construction supervisors, and workers who operate ground-disturbing equipment. The project owner and construction manager shall provide the workers with the CPM-approved set of procedures for reporting any sensitive paleontological resources or deposits that may be discovered during project-related ground disturbance.

Protocol: The paleontological training program shall discuss 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 also include the set of reporting procedures that workers are to follow if paleontological resources are encountered during project activities. The training program shall be presented by the designated paleontological resource specialist and may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

Verification: At least 30 days prior to the start of project construction, the project owner shall submit to the CPM for review, comment, and approval, the proposed employee training program and the set of reporting procedures the workers are to follow if paleontological resources are encountered during project construction.

If the employee training program and set of procedures are not approved, the project owner, the designated paleontological resource specialist, and the CPM shall meet to discuss comments and negotiate necessary changes, before the beginning of construction.

Documentation for training of additional new employees shall be provided in subsequent Monthly Compliance Reports, as appropriate.

PAL-4 The designated paleontological resource specialist or designee shall be present at all times he or she deems appropriate to monitor construction-related grading, excavation, trenching, and/or augering in areas where potentially fossil-bearing sediments have been identified. If the designated paleontological resource specialist determines that full-time monitoring is not necessary in certain portions of the project area or along portions of the linear facility routes, the designated specialist shall notify the project owner.

Verification: The project owner shall include in the Monthly Compliance Reports a summary of paleontological activities conducted by the designated paleontological resource specialist.

PAL-5 The project owner, through the designated paleontological resource specialist, shall ensure recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in its compliance files copies of signed contracts or agreements with the designated paleontological resource specialist and other qualified research specialists who will ensure the necessary data and fossil recovery, mapping, preparation for analysis, analysis, identification and inventory, and preparation for and delivery of all significant paleontological resource materials collected during data recovery and mitigation for the project. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved Paleontological Resources Report and shall keep these files available for periodic audit by the CPM.

PAL-6 The project owner shall ensure preparation of a Paleontological Resources Report by the designated paleontological resource specialist. The Paleontological Resources Report shall be completed following completion of the analysis of the recovered fossil materials and related information. The project owner shall submit the paleontological report to the CPM for approval.

Protocol: The report shall include (but not be limited to) a description and inventory list of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the paleontological resource specialist that project impacts to paleontological resources have been mitigated.

Verification: The project owner shall submit a copy of the Paleontological Resources Report to the CPM for review and approval under a cover letter stating that it is a confidential document. The report is to be prepared by the designated paleontological resource specialist within 90 days following completion of the analysis of the recovered fossil materials.

PAL-7 The project owner shall include in the facility closure plan a description regarding facility closure activity s potential to impact paleontological resources. The conditions for closure will be determined when a facility closure plan is submitted to the CPM twelve months prior to closure of the facility. If no activities are proposed that would potentially impact paleontological resources, then no mitigation

measures for paleontological resource management are required in the facility closure plan.

Protocol: The closure requirements for paleontological resources are to be based upon the Paleontological Resources Report and the proposed grading activities for facility closure.

Verification: The project owner shall include a description of closure activities described above in the facility closure plan.

VIII. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project affect to some degree the community in which it is located. The impact 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, traffic and transportation, visual resources, noise, and socioeconomics.

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 land uses.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Kern County General Plan is the legal document that determines land use and development in the county. (Ex. 35, p. 139.) The existing General Plan land use designations for PEF are represented below in **Land Use Table 1**.

Land Use Table 1

Location or Linear Facility	Land Use Designation
Power Plant and Laydown Area	Extensive Agricultural/Intensive Agriculture/Mineral and Petroleum/Nonjurisdictional Lands
Route 1 Transmission Line Route	Extensive Agricultural/Mineral and Petroleum/Nonjurisdictional Lands
Route 2A Water Supply Line	Mineral and Petroleum/Extensive Agricultural/Intensive Agricultural/Mineral and Petroleum
Route 3 Natural Gas Supply Line	Mineral and Petroleum/Extensive Agricultural/Intensive Agricultural
Route 5 Access Road	Extensive Agricultural/Mineral and Petroleum/Nonjurisdictional Lands

Source: Ex. 35, p. 141, Land Use Table 1

Existing land uses for the facility are represented below in **Land Use Table 2**.

LAND USE Table 2

Location or Linear Facility	Existing Land Uses
Power Plant and Laydown Area	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture
Route 1 Transmission Line Route	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture
Route 2A Water Supply Line	Undeveloped/Agriculture/Oil Fields
Route 3 Natural Gas Supply Line	Undeveloped/Gravel Pit/Agriculture/Oil Wells
Route 5 Access Road	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture

Source: Ex. 35, p. 141, Land Use Table 2

The Kern County Zoning Ordinance implements the General Plan by applying development standards and construction requirements on land within the unincorporated areas of the county. (Ex. 35, p. 144.) The zoning districts applicable to the project include Exclusive Agriculture (A) and Limited Agriculture (A-1). The Exclusive Agriculture district, zoned for areas suitable for agricultural uses, is designed to prevent the encroachment of incompatible uses on agricultural lands and the premature conversion of such lands to non-agricultural uses. The Limited Agriculture district is suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses. The following table shows the zoning designations of the project site and linear corridors. (*Id.,* p. 145.)

Zoning Designations Within The Affected Environment

Location or Linear Facility	Zoning Designations
Power Plant and Laydown Area	A Exclusive Agriculture
Route 1Transmission Line Route	A Exclusive Agriculture/ A-1 Limited Agriculture
Route 2A Water Supply Line	A Exclusive Agriculture
Route 3 Natural Gas Supply Line	A Exclusive Agriculture
Route 5 Access Road	A Exclusive Agriculture

Source: Ex. 35, p. 145.

1. The Site.

The project site is located in southern Kern County, about 30 miles south of Bakersfield, within an undeveloped area owned by Tejon Ranch. No residences, parks, recreational, educational, religious, health care facilities, or commercial uses are found within a one-mile radius. Industrial uses are permitted within the area at the adjacent gravel quarry southeast of the site, the Edmonston Pumping Plant, and the California Aqueduct. (Ex. 1,/5.9.1.2.) Currently, the site is used for grazing; it is not irrigated, no crops are grown, and no agricultural activities are involved. (Ex. 12, p. 5; 9/19/ RT 23.) Grazing land will continue to surround the site after the project is built. (*Ibid.*) Under Section 19.12.030(G) of the Kern County Zoning Ordinance, an electric power generating plant is a conditionally permitted use for land that is zoned Exclusive Agriculture (A). (Ex. 35, p. 148.)

2 Williamson Act Contract Cancellation

When Applicant began the certification process, the site was under a Williamson Act contract.[57] Because the site will be used for non-agricultural purposes, the property owner, Tejon Ranchcorp, filed a petition with Kern County for cancellation of the Williamson Act contract for two parcels consisting of 31.05 acres where the site and laydown area will be situated. (Ex. 35, p. 159 et seq.; 9/19 RT 19 et seq.) On September 19, 2000, the Board of Supervisors granted a tentative approval of the cancellation petition.[58] (Ex. 59.) Tejon Ranchcorp is

---

[57] The Williamson Act (Govt. Code,/51200 et seq.) is a state land use policy that seeks to preserve open space and agricultural land by discouraging premature urbanization, which occurs when landowners choose to develop their property because of property tax incentives. In return for an agreement to restrict the property to agricultural uses for 10 years at a time with automatic annual renewal, the landowner receives preferential tax treatment. (Ex. 1,/5.9.1.1.2.)

[58] Section 51282 of the Government Code controls the Williamson Act contract cancellation process. Pursuant to Section 51282, the Board of Supervisors found the proposed cancellation is in the public interest and consistent with the purposes of the Williamson Act. The Board determined that the project is not likely to result in the removal of adjacent lands from agricultural use; it will not result in noncontiguous patterns of urban development, and the development of a power plant is consistent with the General Plan. (Exs. 41, 53, 59.) The public interest, such as increased tax revenues, new jobs, and the need to develop new sources of electrical power, were found to outweigh the objectives of the Williamson Act.

required to pay a cancellation fee in the amount of $625,000 in deferred taxes[59] to complete the cancellation process. (Exs. 53, 59.) Recent legislation specifically designed for this project, AB 2698 (Florez), shortens the period for challenging the Williamson Act contract cancellation from 180 days to the conclusion of the 30-day reconsideration period for this Decision. (9/19 RT 20-22; Ex. 35, p. 148.)

3. Parcel Map and Zone Variance

Cancellation of the Williamson Act contract creates a new 31.05-acre parcel where the project will be constructed. Under the California Subdivision Map Act, if a parcel is created for the purpose of lease, sale, or finance, it must comply with the provisions of the Act as well as the Kern County Land Division Ordinance. Since the site is leased from Tejon Ranchcorp, Applicant filed an application with the Kern County Planning Department for a parcel map to satisfy provisions of the Subdivision Map Act. (Ex. 35, p. 152; 9/19 RT 25-27, 52.) Applicant also applied for a zone variance in the Exclusive Agriculture (A) zoning district since lands held under Williamson Act contract are designated for a minimum parcel size of 80 acres. (Ex. 35, p. 148.)

The Planning Department approved both the parcel map application and zone variance on September 18, 2000. (Ex. 58.) These approval documents delineate the conditions that must be met prior to recordation of the parcel map. (Ex. 58; 9/19 33-37, 52-55.) The County normally requires a conditional use permit for this type of project and has indicated the zoning conditions of approval that it would otherwise impose if it were the permitting agency. (Ex. 35, p. 155.) To ensure that Applicant complies with the County s parcel map and zoning conditions, Condition **LAND USE-1** requires Applicant to submit a Site Development Plan to the County that is consistent with all applicable provisions of the Kern County General Plan, Land Division Ordinance, and Zoning Ordinance. (Ex. 35, p. 155; 9/19 RT 33-34, 37.)

---

[59] See Government Code section 51283.

4. Potential Impacts

Cancellation of 31.05 acres does not represent land taken out of agricultural production because the acreage has been used historically for grazing. The record of evidence establishes that development of PEF on this property will not adversely impact agricultural production or initiate eventual development of the surrounding area. (Ex. 35, p. 149; 9/19 RT 34-35.)

Applicant has an agreement with Tejon Ranchcorp for temporary use of a 25-acre parcel for the construction laydown area. (Ex. 35, p. 149.) The parcel is currently used for cattle grazing. After construction is completed, the laydown area will be tilled, reseeded, and released back to owner who will continue to use the area as rangeland. (*Ibid*.) Since use of this parcel is temporary and the land will be restored to its original condition, the evidentiary record establishes that any potential impact to agriculture is insignificant. (*Ibid.*) See, Condition **LAND USE-2**.

Under the Kern County Zoning Ordinance, transmission lines and gas and water pipelines are permitted by right in all zones, and require no discretionary permits from the county. (Ex. 35, p. 150.) Since all disturbed areas will be restored to their original condition, construction of these linear facilities will not constitute an adverse or significant impact to agricultural use. (*Ibid.*) See, Condition **LAND USE-2**.

Intervenors Kern Audubon Society and Kern-Kaweah Sierra Club raised concerns about potential cumulative impacts and urbanization resulting from approval of PEF. (9/19 RT 38-49, 60.) CEQA Guidellines require an analysis of whether conversion of prime farmland to uses that conflict with agricultural zoning or Williamson Act contracts would result in potential significance. (Cal. Code of Regs., tit. 14, ⁄ 15000 et seq., Appendix G.) Staff conducted an

analysis that considered the combined effect of PEF, the Tejon Industrial Complex, the San Emidio New Town Specific Plan and other commercial, industrial, and residential uses proposed or currently under construction in southern Kern County, all of which represent a conversion of 9,800 acres to urban uses. (Ex. 35, p. 151.) Since each new development is subject to applicable land use controls, zoning, and development standards, Staff concluded that sufficient safeguards exist to prevent significant cumulative impacts. (*Ibid.*)

Given the current pressure on agricultural lands in Kern County, Staff was concerned that the project s impacts would be significant if the site represented highly cultivated land. However, the site is uncultivated with marginal agricultural value that is further compromised by the proximate non-agricultural uses such as the gravel quarry, the Edmonston Pumping Plant, and the Aqueduct. There is no evidence to indicate that the project will trigger adjacent development that would cause further agricultural land conversion. In light of these circumstances the cumulative impact of the project is less than significant. (Ex. 35, p. 151.)

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility and its related facilities are permitted uses under the Kern County General Plan and applicable Zoning Ordinances.

2. Approximately 31.05 acres of the proposed site were subject to a Williamson Act contract held by the property owner, Tejon Ranchcorp.

3. The Kern County Board of Supervisors approved Tejon Ranchcorp s petition for cancellation of the Williamson Act contract for 31.05 acres that will be dedicated to construction and operation of the project.

4. The Kern County Planning Department approved a new parcel map and zone variance for the 31.05-acre parcel.

5. The site has been historically used for grazing and does not represent prime agricultural land.

6. Use of the site to construct and operate the project will not adversely affect agricultural production in Kern County or initiate eventual development of the surrounding area.

7. The project s potential cumulative impacts on agricultural lands are insignificant.

8. Implementation of the Conditions of Certification, below, ensures that the project will comply with all applicable laws, ordinances, regulations, and standards relating to land use as identified in the pertinent portions of APPENDIX A of this Decision.

The Commission therefore concludes that the project will not create any significant direct, indirect, or cumulative adverse land use impacts.

CONDITIONS OF CERTIFICATION

LAND USE-1 Prior to the issuance of building or grading permits, the project owner shall submit a site development plan for the project to Kern County for their review and comment, and to the California Energy Commission Compliance Project Manager (CPM) for review and approval. The site development plan shall comply with all applicable provisions of Chapters 9.12, 19.82, and 19.86 of the Kern County Zoning Ordinance. The project owner shall provide a letter of comment from the Kern County Planning Director stating that the project is consistent with the provisions of the Kern County Land Division Ordinance, the Kern County General Plan, and the Kern County Zoning Ordinance.

Protocol: The project owner shall submit a letter to the CPM from the Kern County Planning Director stating that the site development plan conforms to Kern County s Zoning Ordinance and is consistent with the General Plan. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

Verification: At least 60 days prior to the start of any ground disturbance related to construction, the project owner shall submit the proposed site development plan and a copy of the letter of comment from the Kern County Planning Director to the CPM for review and approval. The project owner shall submit any required revisions within 30 days of notification by the CPM.

LAND USE-2 No later than the first planting season after project construction is completed, PEF will reseed the 25-acre laydown area with grasses and release the property to the owner of record. All areas which have been disturbed by the installation of the transmission lines and underground gas, wastewater, and water lines will be reseeded and/or reestablished to original condition (i.e., row crop, orchard, grazing).

Verification: Within 30 days after reseeding of the subject property the project owner shall submit to the CPM written notification that the 25-acre laydown area has been reseeded to the satisfaction of the owner of the parcel, and that the parcel is ready for inspection. Within 30 days after reseeding of areas disturbed by installation of the transmission lines and underground gas, wastewater, and water lines, the project owner shall submit to the CPM written notification that these areas have been reseeded and that they are ready for inspection.

B. TRAFFIC AND TRANSPORTATION

Construction and operation of the project have the potential to adversely impact the transportation system in the project vicinity. During the construction phase, large numbers of workers arriving and leaving during peak traffic hours and transportation of large pieces of equipment could increase roadway congestion and affect traffic flow. Trenching and other activities associated with building the linear facilities may also be disruptive. During plant operation, there is reduced potential for impacts due to the limited number of vehicles involved.

The evidentiary record contains a review of the roads and routings that will be used; the potential traffic problems associated with those routes; the anticipated number of deliveries of oversized/overweight equipment; anticipated encroachments upon public rights-of-way; the frequency of, and routes associated with the delivery of hazardous materials; and the availability of alternative transportation methods.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located on an undeveloped parcel owned by Tejon Ranch, about 30 miles south of Bakersfield to the east of Interstate 5 (I-5). Regional access to the site is provided by State Highway 99 from the north, which joins I-5 about 20 miles south of Bakersfield. Highway 43 and Highway 58 intersect west of Bakersfield and also cross I-5. Highway 33 intersects Highway 43 and I-5 near Bakersfield and intersects Highway 166 just north of the I-5 and Highway 99 junction. Highway 223 traveling west from Arvin intersects with I-5 about 10 miles south of Bakersfield.

Access to the site from any direction will be the Grapevine Exit off I-5. From the exit, traffic will travel along the Edmonston Pump Plant Road for approximately 6.5 miles to the new PEF access road, which will turn north for 0.85 mile to the

site. The new road will be paved with asphalt and built to Kern County standards to provide sufficient width and strength for site-related traffic. (Ex. 35, p. 168.) PEF has applied for an encroachment permit from the Department of Water Resources (DWR) to construct an intersection with the Edmonston Pump Plant Road for the new access road.[60] (*Ibid*.)

The levels of service (LOS) that measure existing and anticipated traffic flows were used to evaluate the project s potential impacts on the local transportation system.[61] LOS measurements represent the flow of traffic, ranging from level A (free flowing traffic) to level F (heavily congested with stoppage of traffic flow). Applicant s evaluation of potential traffic impacts began with documentation of existing traffic volumes and LOS, which are shown in **Traffic and Transportation Tables 1 and 2**, below. Using this data, Applicant developed forecasts of both short-term construction and long-term operational traffic attributable to the project. Applicant then evaluated the potential impacts of those traffic increases upon available roadway capacity and LOS, including the impacts of moving major pieces of equipment or hazardous materials to the site. (Ex. 1,/5.11.1.2.)

1. Construction Impacts

Commuter Traffic. The 24-month construction schedule anticipates an average workforce of 193 workers per month and a peak workforce of 365 workers in the 17th month. (Ex. 1,/5.11.2.2.1.) Applicant assumed that at least 350 workers

---

[60] DWR owns the Edmonston Pump Plant Road (a private, two-lane road on Tejon Ranch property), which provides access to the California Aqueduct and to the gravel quarry adjacent to the project site. (Ex. 35, p. 173.) When Tejon Ranch transferred the road right-of-way to the State of California, it reserved rights to an easement for access purposes. (Ex. 36, p. 14.)

[61] The LOS ratings for highways in the project area are established by CalTrans. LOS criteria for local roadway intersections are defined by the Kern County General Plan Circulation element. (Ex. 1,/5.11.1.2.)

would commute from the local Bakersfield area and about 15 would come from outside the area. (*Ibid.*)

\\\

\\\

\\\

TRAFFIC AND TRANSPORTATION Table 1
Current Traffic Characteristics of Highways in the Project Area

Highway/Mile post	Location	Annual Average Daily Traffic(1)	Annual Average Peak Hour Traffic(1)	Annual Average Daily Truck Traffic(2)	Percent of Truck Traffic(3)	Highway Capacity (vphpd) (4)	LOS(6)
Interstate 5							
0	Los Angeles-Kern County Line	52,000	7,000	17,820	34	5,520	D
10.15	Grapevine	52,000	6,200	13,770	26	7,360	C
15.86	Jct. Rte 99 North	25,550	2,700	5,250	21	3,560	A
19.61	Jct. Rte 166	23,900	2,550	4,997	21	3,520	C
33.49	Jct. Rte 223	23,200	2,420	4,830	21	3,560	C
38.78	Jct. Rte 119	23,600	2,500	4,914	21	3,560	C
41.19	Jct. Rte 43	23,200	2,450	4,914	21	3,600	C
52.15	Jct. Rte 58	24,100	2,600	7,378	31	3,600	C
65.61	Lerdo Hwy	24,300	2,550	7.953	32	3,600	C
73.02	Jct. Rte 46	23,700	4,200	7,260	31	3,560	C
Highway 33							
11.56	Jct Rte 166-East	4,400	450	1104	26	1,920	C
12.91	County Road P263	6,200	610	NA	NA	1,780	D
17.89	Jct Rte 119-East	8,600	840	2,236	26	1,860	D
Highway 43							
1.9	Jct Rte 5	3,550	320	856	26	1,760	B
8.11	Jct Rte 58-East Rosedale Hwy	3,300	300	795	24	1,690	B
9.16	Jct Rte 58-West McKittrick Hwy	9,600	940	853	9	1,640	A
16.55	East Lerdo Hwy	7,600	670	684	9	1,915	A
25.13	Jct Rte 46-West Famoso Hwy	7,200	650	864	12	1,760	C
25.19	Jct Rte 46-East	3,100	280	498	16	1,760	B
36.67	Garces Hwy (Jct Rte 155)	1,600	150	NA	NA	1,760	A
Highway 58							
75.62	Jct Rte 223-West	18,500	1,750	6,301	34	2,040	B
77.25	Bear Mt. Ranch	18,200	1,800	5,249	28	2,400	B
90.72	Jct Rte 202	19,500	2,650	7,718	37	3,320	B
Highway 99							B
0.75	Jct Rte 5	26,500	1,950	6,240	23	5,280	B
2.73	Jct Rte 166	28,000	3,050	6,600	24	5,280	B
13.41	Jct Rte 223	32,500	3050	6,840	21	5,280	B
17.50	Jct Rte 119	42,000	3,650	8,250	20	5,520	B
23.51	Jct Rte 58-East	108,000	11,000	20,520	19	7,280	C
25.65	Jct Rte 58 West-Jct 178 West	114,000	11,600	20,520	18	7,170	D
27.05	Jct Rte 204	73,000	5,800	27,170	37	5,340	C
29.88	Jct Rte 65	59,000	6,100	17,110	29	5,340	C
44.31	Jct 46	39,000	3,500	11,165	29	5,340	B
55.52	Jct Rte 155	36,000	2,700	9,940	27	3,600	B
Highway 166							
0.01	Jct Rte 33 North	36,000	280	860	27	1,260	C
22.80	Jct Rte 5 Freeway	2,200	200	601	27	1,820	B
24.62	Jct Rte 99	2,600	240	725	28	1,820	B
Highway 223							
1.85	Jct Rte 5	3650	310	667	18	1,600	A
10.94	Jct Rte 99	4,250	350	1,178	27	1,760	B
21.17	Derby Street	2,100	180	NA	NA	1,690	B
31.92	Jct Rte 58	1,150	100	290	25	1,090	B

Source: Ex. 1, Table 5.11-1.

(1) Source: 1998 Traffic Volumes on the California State Highway System (Caltrans, 1999).
(2) Source: 1997 Truck Volumes on the California State Highway System (Caltrans, 1998).
(3) Percentages calculated using 1996 average daily truck traffic as a percentage of 1998 annual average daily traffic (AADT).
(4) Vphpd = vehicles per hour per direction, Source: Oputa 1999.
(5) Data not available from Caltrans, extrapolated from data on adjacent highway segments.
(6) Source: Oputa, 1999.

TRAFFIC AND TRANSPORTATION Table 2
EXISTING TRAFFIC CHARACTERISTICS OF LOCAL ROADWAYS IN THE PROJECT AREA

Roadway	Location	Classification	Annual Average Daily Traffic (V)1	Annual Peak Hour Traffic(2)	Capacity (C)(3)	LOS (V/C)(4)
Edmonston Pump Plant Road	**South of Plant Site**	**2-Lane local road**	**720**	**72**	**9,000**	**A**

Source: Ex. 1, Table 5.11-2.

1. Edmonston Pump Plant Road is a private road. Traffic count data is not available from the Kern County Roads Department (Hayslett, 1999). Based on a visual observation of traffic conducted 9/14/99, it is assumed that ADT for Edmonston Pump Plant Road is 720 trips per day (average of 60 trips per hour x12 daytime hours).
2. Based on 10 percent of AADT.
3. Kern County, 1998.
4. LOS calculated by dividing volume, V and capacity, C and then using the V/C ratio to define LOS (Kern County, 1998).

Traffic and Transportation Table 3, below, shows the estimated commuting routes that will be used by the construction workforce. **Traffic and Transportation Table 4**, below, shows the origin and distribution of the workforce. Based on a worst-case scenario, Applicant assumed that each of the 193 workers would drive separately to the project site, making two trips per day, resulting in approximately 386 total vehicle trips per day. Peak construction would result in 730 trips per day. (*Ibid*.; Ex. 35, pp. 171-172.) See, **Traffic and Transportation Table 5**, below.

TRAFFIC AND TRANSPORTATION Table 3
Preferred Commuting Routes

Commuting From	Percent of Workforce	Preferred Route
Bakersfield	69	Highway 99 south to I-5 south, and east on Edmonston Pump Plant Road to the PEF
Delano and MacFarland	14	Highway 99 south to I-5 south, and east on Edmonston Pump Plant Road to the PEF
Wasco and Shaffer	9	Highway 43 to Highway 99 south to I-5, and east on Edmonston Pump Plant Road to the PEF
Taft and Maricopa	2	Highway 166 to Highway 99 south to I-5, and east on Edmonston Pump Plant Road to the PEF
Arvin and Tehachapi	4	Highway 223 to Highway 99 south to I-5, and east on Edmonston Pump Plant Road to the PEF
Southern California (Los Angeles Area)	2	Interstate 5 north and then east on Edmonston Pump Plant Road to the PEF

Source: Ex. 1, Page 5.11-11.

TRAFFIC AND TRANSPORTATION Table 4
Plant Construction Workforce Distribution

Origin of Vehicle Travel to Pastoria Energy Facility Site	Distribution of Local Workforce	Average Local Workforce	Peak Local Workforce	Distribution of Non-Local Workforce	Average Non-Local Workforce	Peak Non-Local Workforce	Total Average Workforce (1)	Total Peak Workforce(2)
Bakersfield	69%	122	241	69%	11	10	133	251
Delano	11%	20	38	11%	2	2	21	40
Wasco	6%	11	21	6%	1	1	11	22
Arvin	4%	7	14	4%	1	1	8	15
McFarland	3%	5	11	3%	.5	.5	6	11
Shafter	3%	5	11	3%	.5	.5	6	11
Taft and Maricopa	2%	3.5	7	2%	.5	--	4	7.5
Other Areas Including Tehachapi and Southern California	2%	3.5	7	2%	.5	--	4	7.5
TOTAL	100%	177	350	100%	16	15	193	365

Source: Ex. 1, Table 5.11-3A.

(1) Sum of average local workforce and average non-local workforce.
(2) Sum of total peak local workforce and total peak non-local workforce.

TRAFFIC AND TRANSPORTATION Table 5
Plant Construction Vehicle Trip Generation and Workforce Distribution

Origin of Trip, Distribution To/From Pastoria Energy Facility Project Generating Plant Site	Average Workforce (1)	Average Vehicle Trips (2)	Peak Workforce	Peak Vehicle Trips
Bakersfield	133	266	251	502
Delano	21	42	40	80
Wasco	11	22	22	44
Arvin	8	16	15	30
McFarland	6	12	11	22
Shaffer	6	12	11	22
Taft and Maricopa	4	8	7.5	15
Other Areas Including Tehachapi and Southern California	4	8	7.5	15
Total	193	386	365	730

Source: Ex. 1, Table 5.11-3b.

1. From Table 4, Total Average Workforce.
2. From Table 4, Total Peak Workforce.

The evidence indicates that during peak construction, commuter-related traffic would primarily affect Highways 99 and 223, resulting in minimal short-term traffic increases that would not affect the existing highway LOS. (Ex. 1,/5.11.2.2.1 et seq.; Ex. 35, p. 173.)

Construction-related commuter traffic[62] on Edmonston Pump Plant Road will result in a traffic increase of over 54 percent. During peak construction, commuter traffic will increase by 101 percent. Evidence indicates that Edmonston Pump Plant Road, which currently accommodates about 720 vehicle trips per day, has the capacity to carry 9,000 vehicles per day with a LOS rating of A. (Ex. 35, p. 174. Ex. 1, p. 5.11-12.) See, **Traffic and Transportation Figure 2,** above. Therefore, anticipated peak traffic increases are far below capacity and would not result in significant impacts. (*Ibid*.) Applicant will utilize appropriate traffic signs and control measures to ease temporary traffic congestion at the Grapevine/I-5 exit in accordance with Caltrans and Kern County requirements. (Conditions **TRANS-2** and **TRANS-4**.)

[62] This traffic increase will occur during the morning and evening peak commute hours. (Ex. 35, p. 173.)

Truck Traffic. Whenever possible, rail lines will be used to transport heavy equipment and machinery to minimize truck transport. Cargo will be unloaded at the Arvin Branch Station and transported by truck on Highway 223 to Highway 99 south to the site, a distance of about 33 freeway miles. (Ex. 1, p. 5.11-13 et seq.)

Applicant estimates 4,708 truck deliveries to the site during the construction period, with an average of 196 deliveries per month and about 20 truck trips per day. (Ex. 1, p. 5.11-14.) According to Applicant, an estimated influx of 20 trucks per day on local highways results in a negligible increase (0.003 to 0.3 percent) along the proposed routes of travel. (*Ibid*.; see also Ex. 1, Table 5.11-4.) Therefore, the impact on highways will not be significant. (*Ibid.*)

The addition of construction-related truck traffic on Edmonston Pump Plant Road will contribute to wear on the road, increasing the need for regular maintenance to meet safety standards. (Ex. 1, p. 5.11-14.) Condition **TRANS-7** ensures that the project owner will make necessary repairs to restore the road to its original condition after the construction period.

Linear facilities. The evidence indicates that construction of the gas pipeline will impact traffic on Sebastian Road for 2.5 miles. However, the low traffic volume on the road and implementation of appropriate safety measures will mitigate any short-term impacts. (Ex. 35, p. 181.) See, Conditions **TRANS-4** and **TRANS-7**. There will be no additional impacts to local roadways or highways.[63] (Ex. 35, p. 179.) Conditions **TRANS-5** and **TRANS-6** ensure that the project owner will obtain appropriate encroachment permits and implement safety measures consistent with Caltrans requirements.

---

[63] During construction of the pipeline along Sebastian Road, workers and truck deliveries will use the Laval Road/I-5 exit. The exit has a LOS of C, which will not be affected by the estimated 40 vehicle trips per day during the four-month pipeline construction period. (Ex. 35, p. 181.)

2. Operation Impacts

The project will employ 25 permanent fulltime employees. To determine a worst-case scenario, Applicant assumed employees would commute from Bakersfield in separate vehicles, resulting in 50 vehicle trips per day south on Highway 99 to I-5 and east on Edmonston Pump Plant Road to the project. Testimony indicates that these anticipated travel routes could easily accommodate the commuter traffic. (Ex. 1,/5.11.2.2.2.)

Safeguards incorporated in Applicant s mitigation plans for the transport of hazardous materials will reduce potential traffic impacts to insignificant levels.[64] (Ex. 36, pp. 16-17.) Commercial truck operators and trucking companies that transport hazardous materials on public roadways must comply with federal and state safety requirements. (Ex. 35, p. 178.) Condition **TRANS-3** ensures that all requisite permits and licenses for the transport of hazardous materials will be obtained.

The PEF will have exhaust stacks that exceed 200 feet. PEF has indicated that a lighting system will be installed on each stack as required by Federal Aviation Administration (FAA) regulations. If this is done, the stacks should not present a hazard to flying aircraft. (Ex. 35, p. 165.)

3. Cumulative Impacts

Cumulative impacts could result if construction of PEF and other projects occur at the same time and the workforce and/or truck deliveries use the same roadways. Construction of the Tejon Industrial Complex at the Laval Road/I-5

[64] Applicant anticipates about 11 truck deliveries of aqueous ammonia per month, if SCR is installed. Safety measures for the transport and delivery of ammonia are designed to mitigate any potential adverse impacts resulting from these deliveries. (Ex. 1,//5.11.2.2.2; 5.15.)

exit will begin in the last quarter of 2000 and continue for two years overlapping the PEF construction period. Evidence indicates that the regional highways can accommodate additional commuter and truck traffic without impacts to existing LOS. Construction traffic for the Tejon Industrial Complex will use the Wheeler Ridge/I-5 exit. (Ex. 36, p. 16.) While construction of PEF s gas pipeline will temporarily increase traffic volumes at the Laval Road/I-5 exit, the impact is not significant due to the low numbers of commuter vehicle trips and truck deliveries and the short-term duration. (Ex. 1,/5.11.2.8.)

Applicant and Staff agreed that the project s traffic impacts, including potential cumulative impacts, would be insignificant compared with available highway capacities and LOS levels. (Ex. 35, pp. 184-185.)

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the Pastoria Energy Facility will cause increased traffic on roadways in the local and regional areas.

2. The roadway capacities in the local and regional areas are sufficient to accommodate the increased traffic resulting from construction and operation of the project.

3. Impacts upon traffic and roadway conditions due to construction activities will be temporary and not significant.

4. The project owner will obtain necessary encroachment permits from Caltrans for access to public rights-of-way and for traffic management during the construction phase.

5. The project owner will obtain necessary encroachment permits for the new project access road to intersect with Edmonston Pump Plant Road.

6. The project owner will repair any damage to Edmonston Pump Plant Road and Sebastian Road after completion of the construction phase.

7. Potential cumulative impacts to traffic resulting from construction and operation of the project will be insignificant.

8. Potential adverse impacts associated with the transportation of hazardous materials will be mitigated to insignificant levels by compliance with applicable laws.

9. Implementation of the Conditions of Certification, below, ensures that construction and operation of the Pastoria Energy Facility will comply with applicable laws, ordinances, regulations, and standards on traffic and transportation as identified in the pertinent portions of APPENDIX A.

The Commission therefore concludes that construction and operation of the project will not result in any significant, direct, indirect, or cumulative adverse impacts to the regional transportation system.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with Caltrans and Kern County limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any oversize and overweight transportation permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-2 The project owner or its contractor shall comply with Caltrans and Kern County limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans (for temporary signalization during construction at the intersection of Interstate5/Edmonston Pump Plant Road if necessary) and all relevant jurisdictions.

Verification: In Monthly Compliance Reports, the project owner shall submit copies of any encroachment permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least six months after the start of commercial operation.

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 Prior to commencing onsite work to install permanent equipment or structures for the facility, the project owner shall consult with DWR for Edmonston Pump Plant Road and Kern County for construction along Sebastian Road, and prepare and submit to the Compliance Project Manager (CPM) for approval a construction traffic control plan and implementation program which addresses the following issues:

- Timing of heavy equipment and building materials deliveries;
- Redirecting construction traffic with a flagperson;
- Signing, lighting, and traffic control device placement if required;
- Need for construction work hours outside of peak traffic periods;
- Insure access for emergency vehicles to the project site;
- Temporary travel lane closure;
- Access to adjacent residential and commercial property during the construction of the Fuel Gas Pipeline (Route 3); and
- How any necessary roadway repairs will be handled.

Verification: At least 30 days prior to commencing onsite work to install permanent equipment or structures for the facility, the project owner shall provide to the CPM for review and approval and to Kern County for review and comment, a copy of its construction traffic control plan and implementation program. Prior to the commencing onsite work to install permanent equipment or structures for the facility the project owner shall provide a copy of Kern County s comments on the plan.

TRANS-5 The project owner or its contractor shall obtain from DWR encroachment permits for its transmission line to cross Edmonston Pump Plant Road and the California aqueduct prior to commencing onsite work to install permanent equipment or structures for the transmission line.

Verification: At least 30 days prior to commencing onsite work to install permanent equipment or structures for the transmission line, the project owner shall provide the CPM with copies of the encroachment permits.

TRANS-6 The project owner or its contractor shall install crossing structures and netting across Edmonston Pump Plant Road as a safety precaution and to reduce the potential for damage from falling construction material or equipment during cable-stringing activities for its transmission line to the SCE Pastoria Substation. Prior to commencing onsite work to install permanent equipment or structures for the transmission line, the project owner shall consult with the DWR and Caltrans if necessary, and prepare and submit to the CPM a safety plan and implementation program.

Verification: At least 30 days prior to commencing onsite work to install permanent equipment or structures for the facility, the project owner shall provide to the CPM for review and approval, and to DWR and Caltrans for review and comment, a copy of its safety plan and implementation program for installing of transmission lines across roadways. Prior to the start of construction the project owner shall provide a copy of any comments received on the safety plan and implementation program.

TRANS-7 Following construction of the power plant and all related facilities, the project owner shall complete the repair of Edmonston Pump Plant Road and Sebastian Road to original or as near original condition as possible.

Protocol: At least thirty days prior to commencing onsite work to install permanent equipment or structures for the facility, the project owner shall photograph Edmonston Pump Plant Road between Interstate-5 and the plant entrance road, and that portion of Sebastian Road where pipeline construction will occur. The project owner shall provide the CPM, DWR, and Kern County with a copy of the photographs.

Verification: Prior to the commencing onsite work to install permanent equipment or structures for the facility the project owner shall provide copies of the photographs taken of the Edmonton Pump Plant Road and Sebastian Road. Within 30 days of the completion of project construction, the project owner shall meet with the CPM and Kern County to discuss appropriate road repairs for Sebastian Road. The project owner shall provide a copy of a letter from Kern County acknowledging satisfactory completion of the roadway repairs in the first Annual Compliance Report following start of operation.

Within 30 days of the completion of project construction, the project owner shall meet with the CPM and DWR to discuss appropriate road repairs for Edmonston Pump Plant Road. The project owner shall provide a copy of a letter from DWR acknowledging satisfactory completion of the roadway repairs in the first Annual Compliance Report following start of operation.

Trans-8 Construction of the HRSG stacks shall have all the lighting and marking required by the FAA so that the stacks do not create a hazard to air navigation.

Protocol: Prior to commencing onsite work to install permanent equipment or structures for the facility the project owner shall submit to the Federal Aviation Authority Form 7460-1, Notice of Proposed Construction or Alteration.

Verification: At least 30 days prior to the commencing onsite work to install permanent equipment or structures for the facility the project owner shall provide copies of the FAA Form 7460-1 filed with the regional FAA office, and with copies of the FAA response to Form 7460-1 and supporting documents on how the project plans to comply with stack lighting and marking requirements imposed by the FAA to the CPM and Kern County Planning Department.

C. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. The California Environmental Quality Act (CEQA) requires an examination of a project s visual impacts on the environment which, in this case, would focus on the project s 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 project site is located at the southern end of the San Joaquin Valley near the base of the Tehachapi Mountains, more than five miles east of Interstate 5 (I-5). The landscape in the project vicinity is characterized by vast tracts of mostly flat grassland with the mountains as the dominant feature rising dramatically above the valley floor. (Ex. 35, pp. 218-219.) Most views are open and panoramic. Irrigated cropland and grazing land are the primary visual elements. Several electric transmission lines on steel lattice towers cross the valley, but they are subordinate to the landscape due to its vast scale. A number of distribution lines on smaller wooden poles line many of the local roads and are more prominent due to their proximity. (*Ibid.*)

Due to the relatively flat valley floor, most views of the project site from as much as ten miles away are not blocked by terrain; however, many of these views are punctuated by vegetation and orchards. Visibility is also attenuated with increasing distance, particularly at times of the year when haze or fog occurs. (Ex. 1,/5.13.1.2; Ex. 35, p. 219.)

The most noticeable project features are the three heat recovery steam generators (HRSGs) at 70 feet tall, the three HRSG stacks at 213 feet tall, and the wet cooling tower banks at 64 feet tall. The cooling towers will be the primary sources of visible atmospheric plumes, releasing warm water vapor that will rise

into the air, resulting in elongated, vertical white plumes. (Ex. 1, p. 5.13-4.) Vapor plumes from the project may be seen from distances greater than ten miles on clear days. (Ex. 35, p. 219.)

1. Methodology

Applicable visual resource management policy was identified through a review of the Kern County General Plan Land Use, Open Space, and Conservation Element. (Ex. 1, / 5.13.1.1.) Applicant conducted visual field studies that viewed the project landscapes from public roads and vantage points to develop an overall assessment of landscape characteristics and the potential for project impacts. Three Key Observation Points (KOPs) were chosen to represent particularly sensitive viewpoints. (*Ibid*.)

- KOP 1 at Edmonston Pump Plant Road, approximately one mile north of the site, represents the area closest to the project that is accessible to the public.
- KOP 2 at I-5 about 5.2 miles west of the site represents the view area along the freeway, the only heavily used travel corridor and the primary area of public visual access.
- KOP 3 on Laval Road about 2.6 miles north of the site and five miles east of Interstate 5, represents the most panoramic view of the area, encompassing agricultural fields, orchards, and the Tehachapi Mountains.

Applicant took panoramic photographs of these viewpoints to document their existing visual features. Applicant then prepared photosimulations of the viewpoints that show project features superimposed on the original photographs. (Ex. 1, / 5.13, Figures 5.13-6, 5.13-7, and 5.13-8.) Applicant asserts that these simulations objectively demonstrate whether project impacts will be noticeable to sensitive public views. (*Id*., at / 5.13.2.1.) The results of Applicant s analysis are shown on the following Visual Analysis Data Sheets replicated from Exhibit 1, / 5.13, as modified below:

VISUAL ANALYSIS DATA SHEET

KEY OBSERVATION POINT DESCRIPTION

KEY OBSERVATION POINT NO.
1
PROJECT COMPONENT
Power Plant, Transmission Line
LOCATION
Edmonston Pumping Plant Road approximately 5 miles east of Interstate-5 and 100 feet east of existing transmission lines. Viewing north.
ANALYST
Michael Clayton
DATE
9/15/99

VISUAL QUALITY

Low o Moderate o High	Panoramic views across pastoral foreground and middleground landscapes generally lacking unique features or vivid coloration or textures. Foreground and middleground views are dominated by existing utility infrastructure. Visual Quality is considered indistinctive and is rated low.

VISUAL ABSORPTION CAPABILITY

Slope: LOW - Level terrain with no intervening landforms to screen project from view.

Vegetative Cover: LOW - Low growing vegetation provides no opportunities to screen project components from view.

Reclamation Potential: **MODERATE -** Areas of vegetation and soil disturbance would recover quickly following reclamation and replanting.

VIEWER SENSITIVITY

The site is generally lacking in intrinsic scenic features. Public access is restricted and overall viewer sensitivity from this location is considered **low.**

VIEWER EXPOSURE

Visibility: High	**Duration of View:** Extended
Distance Zones: [FG: 0-0.5 mi.; MG: 0.5 - 4 mil.; BG: 4 mi. - horizon] Foreground to middleground	**Overall Viewer Exposure:** Low - due to restricted public access
Number of Viewers: Few	

VISUAL IMPACT SUSCEPTIBILITY

Low	The low visual quality of the site combined with restricted visual access lead to a low rating for visual impact susceptibility.
o Moderate	
o High	

(over)

Key Viewpoint No. 1
(continued)

VISUAL CONTRAST RATING

CHARACTERISTIC LANDSCAPE DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Prominent, well-defined	Well-defined continuous blocks to irregular patchiness	Dominant, linear
LINE	Horizontal, angular to curvilinear	Prominent horizontal to irregular and indistinct	Horizontal and vertical
COLOR	Tan	Golden, green, lavender	White, gray, tan, brown
TEXTURE	Smooth	Smooth	Smooth to matte

PROPOSED ACTIVITY DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Same	Same	Same
LINE	Same	Curvilinear	Same + dark gray
COLOR	Same	Same	Same
TEXTURE	Same	Same	Same

DEGREE OF CONTRAST												
	LAND/WATER BODY				**VEGETATION**				**STRUCTURES**			
	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH
FORM	3				3						3	
LINE	3						3 ROAD			3		
COLOR	3				3						3 ROAD	
TEXTURE	3				3				3			

TERM: **Long o Short** | **CONTRAST SUMMARY:** **o None** **o Low** **Moderate** **o High**

PROJECT DOMINANCE

Subordinate o	**Co-dominant**	**Dominant o**

VIEW IMPAIRMENT

None o	**Low**	**Moderate o**	**High o**

VISUAL IMPACT SEVERITY

Low o	**Moderate**	**High o**

VISUAL ANALYSIS DATA SHEET

KEY OBSERVATION POINT DESCRIPTION

KEY OBSERVATION POINT NO.
2
PROJECT COMPONENT
Power Plant, Transmission Line
LOCATION
Southbound Interstate-5 at weigh station, approximately 1.1 miles north of Grapevine
ANALYST
Michael Clayton
DATE
9/15/99

VISUAL QUALITY

Low o Moderate o High	Foreground transportation and utility infrastructure dominate middleground to background ruderal agricultural landscapes. Distant hills are frequently, partially obscured by haze. Visual quality is considered indistinctive and is rated low.

VISUAL ABSORPTION CAPABILITY

Slope: LOW - Level terrain with no intervening landforms to screen project from view.

Vegetative Cover: LOW - Low growing vegetation provides no opportunities to screen project components from view.

Reclamation Potential: MODERATE - Areas of vegetation and soil disturbance would recover quickly following reclamation and replanting.

VIEWER SENSITIVITY

The site is generally lacking in intrinsic scenic features and would be barely discernible as a background visual element from Interstate-5 and KOP 2. Viewer expectations are tempered by prominence of transportation corridor characterisitics. Overall viewer sensitivity from this location is considered **low.**

VIEWER EXPOSURE

Visibility: Low	**Duration of View:** Brief
Distance Zones: [FG: 0-0.5 mi.; MG: 0.5 - 4 mil.; BG: 4 mi. - horizon] Background	**Overall Viewer Exposure:** Viewer exposure is **low** because the site is distant and perpendicular to the primary directions of view of motorists on I-5. Vehicles travel at high rates of speed and views to the site would be brief.
Number of Viewers: High	

VISUAL IMPACT SUSCEPTIBILITY

Low **o Moderate** **o High**	The low visual quality of the site combined its low visibility as a background visual element that is not in the primary direction of view of I-5 motorists, leads to a low rating for visual impact susceptibility.

(over)

Key Viewpoint No. 2
(continued)

VISUAL CONTRAST RATING

CHARACTERISTIC LANDSCAPE DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Prominent, well-defined	Well-defined continuous blocks to irregular patchiness	Dominant, linear
LINE	Horizontal, angular to curvilinear	Prominent horizontal to irregular and indistinct	Horizontal and vertical
COLOR	Tan	Golden, green, lavender	White, gray, tan, brown
TEXTURE	Smooth	Smooth	Smooth to matte

PROPOSED ACTIVITY DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Same	Same	Same
LINE	Same	Same	Same
COLOR	Same	Same	Same
TEXTURE	Same	Same	Same

DEGREE OF CONTRAST												
	LAND/WATER BODY				**VEGETATION**				**STRUCTURES**			
	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH
FORM	3				3				3			
LINE	3				3					3 PLUME		
COLOR	3				3					3 PLUME		
TEXTURE	3				3				3			

TERM: **Long o Short** | **CONTRAST SUMMARY:** **o None** **Low** **o Moderate** **o High**

PROJECT DOMINANCE

Subordinate	**Co-dominant o**	**Dominant o**

VIEW IMPAIRMENT

None	**Low o**	**Moderate o**	**High o**

VISUAL IMPACT SEVERITY

Low	**Moderate**	**High o**

VISUAL ANALYSIS DATA SHEET

KEY OBSERVATION POINT DESCRIPTION

KEY OBSERVATION POINT NO.
3
PROJECT COMPONENT
Power Plant, Transmission Line
LOCATION
Laval Road, approximately 5 miles east of Interstate-5. Adjacent and to the east of the existing transmission line corridor.
ANALYST
Michael Clayton
DATE
9/15/99

VISUAL QUALITY

o Low Moderate o High	Panoramic views of agricultural fields backdropped by the Tehachapi Mountains which are frequently, partially obscured by haze. Rural foreground to middleground landscapes blend harmoniously with background hills. However, utility infrastructure dominates foreground to middleground views. Visual quality is considered common for the area and is rated moderate.

VISUAL ABSORPTION CAPABILITY

Slope: **LOW to MODERATE** - Level terrain with no intervening landforms to screen project from view although background hills provide camouflaging backdrop.

Vegetative Cover: **MODERATE -** Intervening orchards provide partial screening of project elements.

Reclamation Potential: **MODERATE -** Areas of vegetation and soil disturbance would recover quickly following reclamation and replanting.

VIEWER SENSITIVITY

Views of the site from Laval Road encompass scenic features generally common to the region. The power plant would be perceived as a distant middleground visual element that would be subordinate to the more prominent foreground utility infrastructure. Therefore, viewer sensitivity is considered **low**.

VIEWER EXPOSURE

Visibility: Low	**Duration of View:** Brief to Moderate
Distance Zones: [FG: 0-0.5 mi.; MG: 0.5 - 4 mil.; BG: 4 mi. - horizon] Middleground	**Overall Viewer Exposure:** Viewer exposure is **low** due to the site s distance from Laval Road, its location perpendicular to motorists view directions on Laval Road, and the few number of viewers on Laval Road.
Number of Viewers: Few	

VISUAL IMPACT SUSCEPTIBILITY

Low	The moderate visual quality, in the context of low viewer sensitivity and low visual exposure, leads to a low rating for visual impact susceptibility.
o **Moderate**	
o **High**	

VISUAL ANALYSIS DATA SHEET

Key Viewpoint No. 3 (continued)

VISUAL CONTRAST RATING

CHARACTERISTIC LANDSCAPE DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Prominent, well-defined	Well-defined continuous blocks to irregular patchiness	Prominent, linear
LINE	Horizontal, angular to curvilinear	Prominent horizontal to irregular and indistinct	Horizontal and vertical
COLOR	Tan, brown	Golden, lavender	Gray
TEXTURE	Smooth to granular	Smooth to matte	Smooth

PROPOSED ACTIVITY DESCRIPTION			
	LAND/WATER BODY	**VEGETATION**	**STRUCTURES**
FORM	Same	Same	Generally indistinct, geometric, block mass
LINE	Same	Same	Same
COLOR	Same	Same	Tan to white (plume)
TEXTURE	Same	Same	Same

DEGREE OF CONTRAST												
	LAND/WATER BODY				**VEGETATION**				**STRUCTURES**			
	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH	NONE	LOW	MODERATE	HIGH
FORM	3				3				3			
LINE	3				3					3 PLUME		
COLOR	3				3					3 PLUME		
TEXTURE	3				3				3			

TERM: **Long** o **Short**

CONTRAST SUMMARY: o **None** **Low** o **Moderate** o **High**

PROJECT DOMINANCE

Subordinate	Co-dominant o	Dominant o

VIEW IMPAIRMENT

None o	Low	Moderate o	High o

VISUAL IMPACT SEVERITY

Low	Moder te	High o

2. Potential Impacts

Applicant s analysis indicates that viewer susceptibility and exposure at KOP 1 on Edmonston Pump Plant Road are low because public access is restricted and views are dominated by existing utility infrastructure. Visual impact susceptibility and overall viewer exposure at KOPs 2 and 3 are low because potential viewers along I-5 would be traveling at high rates of speed and views from Laval Road are too distant to distinguish the facility from the panoramic landscape. (Ex. 1,/ 5.13.2.4.1.)

Short-term visual impacts during construction will result from the temporary presence of vehicles, equipment, materials, and the workforce at the power plant site, along the transmission line, and along the pipeline rights-of-way. (Ex. 1,/ 5.13.2.3.1.) However, the evidence establishes these locations are sufficiently distant from public travel corridors and rural residences that no significant visual impacts will occur. Views of gas pipeline construction activities along Sebastian Road will be noticeable to the few drivers in the area and at the residence on David Road, but these are transitory visual intrusions that will not result in significant long-term visual impacts. (*Ibid.*; Ex. 35, p. 231.) The addition of the project s 1.38-mile long transmission line in the viewshed will not result in significant visual impacts since it will be visually absorbed into the greater panoramic landscape. (Ex. 1,/5.13.1.3.) There is no evidence that the project will contribute to cumulative visual impacts in the area. (Ex. 35, p. 238.)

3. Mitigation

Staff was concerned that visible white vapor plumes from the project cooling towers and HRSG exhaust stacks would have the potential to cause significant visual impacts. (Ex. 35, p. 232.) Applicant indicated that plumes from the two cooling tower banks would be relatively small and not visible at distances greater

than five miles where travelers on I-5 or residences along Laval Road could be affected. (*Ibid*., Ex. 16.) Applicant s impact assessment was based on modeling assumptions that included a commitment to mix dry ambient air with saturated air from the cooling towers to reduce plume size. (*Ibid.*) Staff proposed a mitigation measure to require Applicant to employ this plume reduction technique. The Commission has incorporated Staff s proposal in Condition **VIS-7**.

Applicant s modeling results indicated that visible plumes from the HRSG stacks would occur infrequently (18-20 percent of the time) excluding times when fog or other weather conditions reduce visibility. (Ex. 16; Ex. 35, p. 234.) Although industrial plumes are not part of the existing viewshed in this rural area, the plumes will only be visible intermittently from I-5 or Laval Road. Staff therefore concluded that the severity of the visual impact at KOPs 2 and 3 would be low to moderate and the visual impact would be less than significant. (*Ibid.*) At KOP 1, view impairment by the appearance of plumes would also be low because the plumes represent a transient phenomenon that would be viewed against open sky. (Ex. 1, p. 5.13-16.)

Staff indicated that exterior lighting for the project has the potential to change the nighttime visual character of the vicinity from rural to industrial by creating glare, backscatter to the nighttime sky, and illumination of visible plumes. (Ex. 35, p. 231.) To reduce potential impacts, Applicant proposed mitigation that includes hooded night lighting to direct illumination downward and inward, timed or motion detection switches on the HRSG stacks to only illuminate lights as necessary to meet FSAA requirements, and a complaint resolution process. (*Id*., at p. 240.) Condition **VIS-3** requires the project owner to implement these measures.

All project facilities will be painted with neutral earth tone tan or gray colors to blend with existing facilities and the background of existing vegetation. All fencing will be constructed with non-reflective materials. A specific landscaping plan for the facility will be coordinated with the Kern County Planning

Department. (Ex. 35, pp. 240-241.) At the evidentiary hearings, the Committee considered the option of requiring the project owner to install landscape screening along a portion of I-5 where drivers may view the project. (9/18 RT 185-194.) Subsequently, the parties agreed that it would be infeasible to install screening for miles along the highway; moreover, such screening would block panoramic views of the valley resulting in a negative visual effect. Therefore, this concept was dropped.

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility (PEF) is located in a rural area, which is characterized by panoramic views of the valley and the Tehachapi Mountains.

2. The nearest sensitive viewing areas are from Interstate 5 (I-5) more than five miles west of the project, Laval Road exit off I-5 about 5 miles north of the project, and Edmonston Pump Plant Road about one mile north with restricted public access.

3. Project facilities that could result in significant visual impacts include the cooling towers, HRSG exhaust stacks, and the transmission line.

4. Views of project facilities are too transitory or too distant to result in significant visual impacts.

5. The project owner will employ an air mixing technique to reduce the size of cooling tower plumes.

6. Vapor plumes from the HRSG stacks will occur infrequently.

7. Plumes from the cooling towers and HRSG stacks will not result in significant visual impacts to the panoramic landscape.

8. There is no evidence of potential cumulative visual impacts with the addition of PEF in the viewshed.

9. Implementation of the Conditions of Certification, below, will insure that PEF complies with all applicable laws, ordinances, regulations, and

standards relating to visual resources as identified in the pertinent portions of APPENDIX A of this Decision.

The Commission concludes that the implementation of the mitigation measures contained in the Conditions of Certification and otherwise described in the record of evidence will ensure that neither the power plant nor its overhead transmission line will cause significant adverse impacts to visual resources.

CONDITIONS OF CERTIFICATION

VIS-1 Prior to first turbine roll, the project owner shall treat the project structures, buildings, and tanks in an earthen hue or hues that minimize visual intrusion and contrast by blending with the surrounding landscape, and shall treat those items and the switchyard structures and electric transmission towers in a non-reflective finish with a low gloss.

Protocol: The project owner shall submit a treatment plan for the project to the California Energy Commission Compliance Project Manager (CPM) for review and approval. The treatment plan shall include:

- specification, and 11 x 17 color simulations, of the treatment proposed for use on project structures, including structures treated during manufacture;
- a list of each major project structure, building, and tank, specifying the color(s) proposed for each item;
- documentation that a non-reflective finish will be used on all project elements visible to the public;
- a detailed schedule for completion of the treatment; and,
- a procedure to ensure proper treatment maintenance for the life of the project.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall submit a revised plan to the CPM.

After approval of the plan by the CPM, the project owner shall implement the plan according to the schedule and shall ensure that the treatment is properly maintained for the life of the project.

For any structures that are treated during manufacture, the project owner shall not specify the treatment of such structures to the vendors until the project owner receives notification of approval of the treatment plan by the CPM.

The project owner shall not perform the final treatment on any structures until the project owner receives notification of approval of the treatment plan from the CPM.

The project owner shall notify the CPM within one week after all precolored structures have been erected and all structures to be treated in the field have been treated and the structures are ready for inspection.

Verification: At least 60 (sixty) days prior to ordering the first structures that are color treated during manufacture, the project owner shall submit its proposed plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification, the project owner shall submit to the CPM a revised plan.

Not less than 30 days prior to the start of commercial operation, the project owner shall notify the CPM that all structures treated during manufacture and all structures treated in the field are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-2 All fencing for the project shall be non-reflective.

Protocol: Prior to ordering the fencing the project owner shall submit to the CPM for review and approval the specifications for the fencing documenting that such fencing will be non-reflective.

If the CPM notifies the project owner that revisions of the specifications are needed before the CPM will approve the submittal, the project owner shall submit to the CPM revised specifications.

The project owner shall not order the fencing until the project owner receives approval of the fencing submittal from the CPM.

The project owner shall notify the CPM within one week after the fencing has been installed and is ready for inspection.

Verification: Prior to first turbine roll and at least 30 (thirty) days prior to ordering the non-reflective fencing, the project owner shall submit the specifications to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within seven days after completing installation of the fencing that the fencing is ready for inspection.

VIS-3 Prior to first turbine roll, the project owner shall design and install all lighting such that light bulbs and reflectors are not visible from public viewing areas and illumination of the vicinity and the nighttime sky is minimized. To meet these requirements:

Protocol: The project owner shall develop and submit a lighting plan for the project to the CPM for review and approval. The lighting plan shall require that:

- Lighting is designed so that exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that backscatter to the nighttime sky is minimized. The design of this outdoor lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;

- High illumination areas not occupied on a continuous basis such as maintenance platforms or the main entrance are provided with switches or motion detectors to light the area only when occupied;

- A lighting complaint resolution form (following the general format of that in attachment 1) will be used by plant operations, to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

- If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

- Lighting shall not be installed before the plan is approved. The project owner shall notify the CPM when the lighting has been installed and is ready for inspection.

Verification: At least 90 days before ordering the exterior lighting, the project owner shall provide the lighting plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days of completing exterior lighting installation that the lighting is ready for inspection.

VIS-4 The project owner shall provide landscaping satisfactory to the Kern County Planning Department.

Protocol: The project owner shall submit a landscaping plan to the CPM for review and approval. The submittal shall include evidence that the plan is satisfactory to the Director of the Kern County Planning Department.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the submittal, the project owner shall submit to the CPM a revised plan.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: Prior to first turbine roll and at least 60 days prior to installing the landscaping, the project owner shall submit the plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within 7 days after completing installation of the landscaping that the landscaping is ready for inspection.

VIS-5 The project owner shall screen all trash receptacles in such a manner so that they are not visually obtrusive from any off-site location. The location and method of screening for all trash receptacles shall be

approved by the Director of the Kern County Planning Department prior to construction.

Protocol: The project owner shall submit a plan for screening refuse storage areas to the CPM for review and approval. The submittal shall include evidence that the screening plan is acceptable to the Director of the Kern County Planning Department.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the submittal, the project owner shall submit to the CPM a revised plan.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: Prior to first turbine roll and at least 60 days prior to installing the screening, the project owner shall submit the plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within 7 days after completing installation of the screening that the screening is ready for inspection.

VIS-6 The project owner shall comply with Kern County s requirements regarding signs.

Protocol: The project owner shall submit a plan for signs for the project to the CPM for review and approval. The submittal shall include evidence that the plan is acceptable to the Director of the Kern County Planning Department.

If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the submittal, the project owner shall submit to the CPM a revised plan.

The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: Prior to first turbine roll and at least 60 days prior to installing the signage, the project owner shall submit the plan to the CPM for review and approval.

If the CPM notifies the project owner that revisions of the submittal are needed before the CPM will approve the submittal, within 30 days of receiving that notification, the project owner shall prepare and submit to the CPM a revised submittal.

The project owner shall notify the CPM within 7 days after completing installation of the signage that the signage is ready for inspection.

VIS-7 The project owner shall design and operate the project to mix dry ambient air with the saturated air exiting the cooling towers to prevent formation of plumes longer than 60 meters, higher than 60 meters, and wider than 30 meters.

The project owner shall develop and submit a plan to achieve this performance standard to the CPM for review and approval. If the CPM notifies the project owner that revisions of the plan are needed before the CPM will approve the plan, the project owner shall prepare and submit to the CPM a revised plan.

The plan shall not be implemented until it is approved. The project owner shall notify the CPM when the plan has been implemented.

Verification: At least 90 days before ordering any equipment to be used to limit the size of cooling tower plumes, the project owner shall provide the plan to the CPM for review and approval.

If the CPM notifies the project owner that any revisions of the plan are needed before the CPM will approve the plan, within 30 days of receiving that notification the project owner shall submit to the CPM a revised plan.

The project owner shall notify the CPM within seven days after implementing the plan.

D. NOISE

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts to the environment. In this section, the Commission evaluates whether noise produced by project-related activities will be sufficiently mitigated to comply with applicable noise control laws and ordinances.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Laws that regulate noise disturbances in the project vicinity are included in the Kern County General Plan Noise Element. Policy (5)(a) of the Noise Element restricts new sources of exterior noise to 65 dB L_{dn} or less.[65] Policy (5)(b) restricts noise intrusion into interior spaces to 45 dB L_{dn} or less. (Ex. 35, p. 192.) Noise Element Guidelines apply to Insensitive Uses[66] (agriculture, mining and extraction), and to Sensitive and Highly Sensitive Uses[67] (rural residential).

1. Setting

Existing *insensitive* land uses near the project site include undeveloped and agricultural lands, gravel pits, oil wells and fields, and the California Aqueduct. (Ex. 35, p. 194.) The nearest *sensitive* noise receptors are residential land uses, located about 4.4 miles northeast of the site near Laval Road, and 5.4 miles

---

[65] Staff s Noise Tables A1 and A2, replicated at the end of this section, explain the definitions of these and other noise measurement terms.

[66] The Kern County Noise Quality Standards for Insensitive Uses are 65 dBA L_{50} daytime and 60 dBA L_{50} nighttime.

[67] For noise sensitive uses, the most restrictive Noise Quality Standard (i.e., nighttime) is a maximum permissible noise level from the project of 45 dbA L_{50} at the nearest residential properties and 40 dBA L_{50} at the next nearest rural residential properties. (Ex. 1,/5.12.1.4.)

northeast of the site, within an agricultural activity support area near Sebastian and David Roads, known as Lower Citrus. The Laval Road location has a dozen residences, while Lower Citrus has four adjacent residential units with twelve permanent occupants. The gas pipeline route is located near several scattered rural residential uses along Sebastian Road. (Ex. 1,/5.12.1.1.2.)

2. Potential Impacts and Mitigation

Applicant conducted surveys of the ambient noise levels adjacent to the site and at the sensitive residential receptors. Noise levels near the site and general area are influenced primarily by the mining machinery and transportation activities associated with the gravel quarry as well as traffic, agricultural operations, and industrial activities in the area.[68] Measured noise levels at each of the four PEF site boundaries were about 39 dBA Leq. (Ex. 1,/5.12.1.3.) The ambient noise level at the nearest sensitive receptors along Laval Road was 40 dBA Leq. (*Ibid*.)

a. Construction

Construction of the power plant and associated linear facilities will cause short-term noise impacts. Although there are no specific LORS limiting construction noise in Kern County, Applicant will limit all construction activities to the hours between 6 a.m. and 6 p.m. during the 24-month construction period. (Ex. 1,/ 5.12.2.2.) Noisy construction work is restricted to the hours delineated in Condition **NOISE-8**. Applicant predicted construction noise impacts on the nearest sensitive residential receptors at Laval Road. If all the construction equipment were to operate simultaneously at maximum power, a total noise level of approximately 89 dBA would occur at a distance of 50 feet from the acoustic center of the construction activity. Noise levels at Laval Road residences would

[68] The adjacent gravel mining operation occurs on a portion of the quarry property distant from the boundary with PEF. Gravel piles intervene, further reducing the quarry noise to less than 65 dBA at the boundary. Thus, PEF is required to adhere to the 65 dBA limit at the site. (Ex. 36, p. 19.)

reach approximately 36 dBA compared with the ambient noise level of 40 dBA Leq at that location. (*Ibid.*) The evidence thus indicates that construction noise levels at the site would not be noticeable at this residential area.

Construction of the gas pipeline, the water line, and the access road will produce noticeable noise at the residences along Sebastian and David Roads. Applicant estimates outside noise levels may reach 84 dBA at a distance of 50 feet, which is higher than existing average noise levels in the area. However, construction activities will be moving along the route on a daily basis so that no single receptor will be subject to impacts for more than a few days. (Ex. 1,/5.12.2.6.) The transmission line will be constructed in an area far removed from noise-sensitive land use and no significant noise impacts will occur. (*Id.*, at / 5.12.2.4.) Conditions **NOISE-1** and **NOISE-2** require the project owner to notify all residents and business owners in the vicinity of planned construction activities and to establish a noise complaint resolution process.

The loudest construction noise is created by steam blows, which are necessary to flush piping and tubing of accumulated debris prior to start-up. A series of short steam blows, lasting a few minutes, is performed several times daily over a period of two or three weeks. Steam blows can produce noise as loud as 130 dBA at a distance of 100 feet, which would attenuate to 83 dBA at the nearest residence. (Ex. 35, p. 196.) The project owner will install an appropriate silencer to reduce steam blow noise levels by 20-30 dBA or employ a new, quieter steam blow process. (*Ibid.*) Condition **NOISE-4** restricts steam blows to daytime hours to minimize annoyance to residents. Condition **NOISE-5** requires notification to neighbors prior to initiating the steam blow process.

Project workers are susceptible to injury from excessive noise during construction-related activities. **NOISE-3** requires the project owner to implement

a noise control program for construction workers in accordance with Cal/OSHA standards.[69] (See also, Ex. 6, p. NOI-3 et seq.)

b. Operation

During normal baseload operation, PEF will emit a steady, continuous noise source day and night. Noise mitigation measures incorporated into the project design will ensure that noise levels at the nearest sensitive receptor will be about 30 dBA L_{50}, which is below the average ambient noise level of 40 dBA and well below the maximum allowable noise level of 45 dBA. (Ex. 1, // 5.12.3; 5.12.2.1.)

To prevent strong tonal noises or hissing sounds that could result from the various project components, PEF will be designed to blend the many noise sources so no single noise source will stand out. (Ex. 35, p. 198.) Condition **NOISE-6** requires project design that will blend noise levels and muffle equipment to prevent legitimate complaints from affected residential receptors.

The evidence establishes that there are no noise impacts associated with operation of the linear facilities: the gas and water pipelines will be buried below ground, and the transmission line and switchyard are not located near noise-sensitive land uses. (Ex. 35, p. 199.)

Staff reviewed the potential for cumulative impacts related to new or existing projects. There are several new projects planned for the region that may be constructed at the same time as PEF, including the Tejon Industrial Complex, the San Midio New Town Specific Plan, and State Route 223 improvements. However, none of these projects are close enough to PEF to result in cumulative noise impacts during construction or operation. (Ex. 35, p. 199.)

---

[69] Regulations adopted by the federal Occupational Safety and Health Administration (OSHA) and the state Cal/OSHA protect workers from noise-related health and safety hazards. (29 C.F.R., /1910 et seq.; Cal. Code of Regs., tit. 8, / 5095 et seq .)

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the Pastoria Energy Facility (PEF) will create noise.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to daytime hours, and providing notice to nearby businesses and residences, as appropriate.

3. Construction noise along the natural gas and water pipeline routes will be temporary and will not result in significant adverse noise impacts.

4. The nearest sensitive residential receptors potentially affected by operational noise are located about 4.4 miles away from the project site.

5. Operational noise from the power plant will not increase the existing ambient noise levels experienced at the nearest sensitive receptors.

6. The project owner will implement measures to protect workers from injury due to excessive noise levels.

7. Implementation of the measures contained in the Conditions of Certification, below, ensures that PEF will comply with the applicable laws, ordinances, regulations, and standards specified in the pertinent portion of Appendix A of this Decision, and that noise impacts will be mitigated to the extent feasible.

The Commission therefore concludes that the mitigation measures described in the evidentiary record and the Conditions of Certification, below, ensure that project-related noise levels will not cause significant adverse impacts to sensitive noise receptors.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of project-related earth moving activities, the project owner shall notify all residents and business owners within one-half mile of the site, by mail or other effective means, of the commencement of project construction. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. 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: The project owner shall transmit to the Energy Commission Compliance Project Manager (CPM) in the first Monthly Construction Report following the start of project-related earth moving activities, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints.

Protocol: The project owner or authorized agent shall:

- use the Noise Complaint Resolution Form (see Exhibit 1 for example), or 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 30 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the Kern County Environmental Health Services Department, and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 30-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 Prior to the start of project-related earth moving activities, the project owner shall submit to the CPM for review 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 project-related earth moving activities, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

NOISE-4 If a traditional, high-pressure steam blow process is employed, the project owner shall equip steam blow piping with a temporary silencer that quiets the noise of steam blows to no greater than 110 dBA measured at a distance of 100 feet. The project owner shall conduct steam blows only during the hours of 8 a.m. to 5 p.m., unless the CPM agrees to longer hours based on a demonstration by the project owner that offsite noise impacts will not cause annoyance. If a low-pressure continuous steam blow process is employed, the project owner shall submit a description of this process, with expected noise levels and projected hours of execution, to the CPM.

Verification: At least 15 days prior to the first high-pressure steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and the noise levels expected, and a description of the steam blow schedule. At least 15 days prior to any low-pressure continuous steam blow, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-5 At least 15 days prior to the first steam blow(s), the project owner shall notify all residents or business owners within one-half mile of the site of the planned steam blow activity, and shall make the notification

available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within five days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

NOISE-6 Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey, utilizing the same monitoring sites employed in the pre-project ambient noise survey as a minimum. The survey shall also include the octave band pressure levels to ensure that no new pure-tone noise components have been introduced. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints. If the results from the survey indicate that the project noise levels are in excess of 46 dBA Leq (41 dBA Leq + 5 dBA threshold) at the residence along Laval Road (4.4 miles northeast of the proposed site), additional mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

Verification: Within 30 days after completing the survey, the project owner shall submit a summary report of the survey to the Kern County Environmental Health Services Department, and to the CPM. Included in the report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 30 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 The project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted within 30 days after the facility is in full operation, and 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.

NOISE-8 Noisy construction work (that which causes offsite annoyance, as evidenced by the filing of a legitimate noise complaint) shall be restricted to the times of day delineated below:

High-pressure steam blows:	8 a.m. to 5 p.m.
Other noisy work	7 a.m. to 10 p.m.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

NOISE COMPLAINT RESOLUTION FORM

Pastoria Energy Facility
(99-AFC-7)

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).

E. SOCIOECONOMICS

The socioeconomic analysis evaluates the effects of project-related population changes on local schools, medical and protection services, public utilities, and other public resources, as well as the fiscal and physical capacities of local government to meet these needs. The construction phase of project development is typically the focus of the analysis because of the potential influx of workers into the area. Socioeconomic impacts are considered significant if a large influx of non-resident workers and dependents move to the project area, increasing demand for community resources that are not readily available.

SUMMARY AND DISCUSSION OF THE EVIDENCE

Applicant identified a study area of communities in southern Kern County most likely to be affected by the project s socioeconomic and fiscal impacts, including cities such as Bakersfield, Arvin, Wasco, and Delano, as well as 50 smaller communities within an 80-mile radius of the site. (Ex. 1,/5.10.1.1.)

1. Construction Impacts

Applicant has a project labor agreement with the Kern County Building and Construction Trades Council to supply the workforce for construction and operation of the project.[70] (Ex. 43.) Consultation with the Building Trades Council confirmed that construction workers in Kern County commute as much as two hours one-way from their homes to construction sites. (Ex. 1,/5.10.1.1.) Those who live more than two hours away tend to relocate to the project area during the work week and go home on weekends. (*Ibid.*; Ex. 36, p. 6.) Applicant assumed the workforce would be local except for contractor staff who may

[70] The evidence indicates there are more than adequate workers in Kern County for each skill category to meet the skilled labor requirements of project construction and operation. (Ex. 6, p. **SOC-2**; Ex. 1, Table 5.10-8.)

relocate to the area during portions of the 24-month construction period and some permanent employees who may relocate after plant operation begins. (Ex. 1,/5.10.2.2.)

The average daily construction workforce will be 177 local workers and 16 non-local workers per month. (Ex. 1,/5.10.2.2.) Peak employment will occur in the 17th month when a maximum of 365 workers will be needed. Applicant estimated that 350 workers would be local and the remaining 15 would be non-local. (*Ibid*.)

Housing and motel availability is sufficient to accommodate the influx of non-local workers with or without their families. (Ex. 35, p. 310.) The evidentiary record indicates that the potential population increases will be minimal and will have no significant adverse impacts on housing, schools,[71] public utilities, or emergency services[72] in the local communities. (Ex. 1,/5.10.2.2.)

Project construction will generate secondary employment such as indirect jobs supported through local purchasing of equipment and supplies and induced jobs supported by local purchases made by households whose income is derived from the project. Applicant estimated that about 2.2. indirect and induced jobs will result from each construction job. (Ex. 1;/5.10.2.3.)

The fiscal benefits will be substantial. Estimated construction payroll will be $146 million, the bulk of which will be spent in the study area communities. (Ex. 1,/

---

[71] Applicant has contacted the Superintendent for schools in the nearest local community to discuss support or other good neighbor measures that can be provided by PEF. (9/19/ RT 173-174.)

[72] Applicant is negotiating with the Kern County Fire Department to identify mitigation measures that may be necessary to ensure adequate emergency response to the site. Condition **WORKER SAFETY-3** requires Applicant to execute a final agreement with the Fire Department prior to the start of construction-related activities. (9/19 RT 168-174.) Emergency services for the project will be coordinated with the Westside District Hospital in Taft or the five hospitals in Bakersfield. Since the project is located in a remote site, an Emergency Medical Technician (EMT) or other medical personnel will be assigned to the site to provide advanced injury care. (Ex. 1,/ 5.10.2.7.)

5.10.2.8.) PEF will spend an estimated $42-$43 million locally on materials and equipment, generating about $17 million in sales tax revenues (one percent to the county and 6.25 percent to the state). To ensure that the project owner makes a good faith effort to recruit employees and procure materials within Kern County, we have added Condition **SOCIO-2**.

The project will generate a school impact fee of approximately $11,000. (Ex. 6, p. SOC-2.) Annual property tax for the project is estimated at $3.1 million, which will accrue to Kern County and be allocated to county government (19.8 percent), the Fire Department (8.3 percent), city governments (6.1 percent), special districts (5.3 percent), and county schools (61 percent). (Ex. 1,/5.10.2.8.)

2. Operational Impacts

During project operation, PEF will hire about 25 permanent employees, including engineers, equipment operators, maintenance, and security personnel. Applicant assumed that all these employees would be available in the local labor pool; however, under a worst-case scenario, up to 13 positions could be filled by non-local workers. The potential addition of 13 households to the area will be insignificant. (Ex. 5.10.2.2.2.) Applicant estimated that the 25 direct jobs created by project operation will support 72 secondary jobs in the region based on a multiplier of 2.88. (*Id.*,/5.10.2.3.) The yearly operation payroll is estimated at $2.5 million, which will generate about $70,800 in sales tax revenues for the local communities. (*Id.*,/ 5.10.2.8.)

3. Environmental Justice Screening Analysis

Applicant conducted a screening analysis to determine whether environmental justice concerns are present in this case.[73] (Ex. 1, p. 5.10-11.) The screening

[73] Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations requires the U.S. Environmental Protection Agency

analysis assessed 1) whether the potentially affected community includes minority and/or low-income populations; and 2) whether the project s potential environmental impacts are likely to fall disproportionately on minority and/or low-income members of the community. According to EPA guidelines, a minority population exists if the minority/low-income population of the affected area constitutes 50 percent or more of the general population. (*Ibid.*) Relevant census data within a five-mile radius of the site indicate that minority/low-income populations constitute less than 50 percent of the general population.[74] (*Ibid.*) Furthermore, there are no sensitive receptors within ten miles of the site. (*Id.*, p. 5.10-12, see Public Health section.)

PEF s compliance with the Conditions of Certification ensures that no unmitigated significant adverse impacts will result from project-related activities. Since the project will not result in adverse effects to any population, no further environmental justice analysis is required. (Ex. 35, p. 312.)

4. Cumulative Impacts

Staff considered the potential cumulative impacts of PEF with five other power plant projects in the Kern County area (La Paloma, Sunrise, Elk Hills, Midway Sunset, and Antelope Valley), which may have overlapping construction schedules and draw from the same workforce. (Ex. 35, pp. 315-318.) Since construction of La Paloma has already begun, it is anticipated that a portion of the La Paloma workforce will be available to work at PEF. Except for La Paloma,

---

(EPA) and all other federal agencies and state agencies receiving federal aid to identify and address disproportionately high and adverse human health or environmental effects of their programs on minority and low-income populations. Although the Energy Commission is not obligated as a matter of law to conduct an environmental justice analysis, we have typically included this topic in our power plant siting decisions to ensure that any potential adverse impacts on identified populations have been addressed.

[74] Staff used a six-mile radius in reviewing Applicant s analysis because it is the same radius used for Staff s cumulative air quality and public health analyses and captures the areas most likely to be impacted by the project. (Ex. 35, p. 312.) Staff s assessment of the six-mile radius confirms Applicant s conclusions. (*Ibid.*)

none of the other projects have been certified to date. It is therefore unlikely that a large influx of non-local workers will occur since the construction schedule overlap predicted in the evidentiary record has become moot. Moreover, the large labor pool in Kern County is available to meet most of the workforce requirements for each of the proposed projects. (*Ibid.*)

The combined property tax revenues resulting from development of the several proposed power plants in Kern County will provide fiscal resources to accommodate any potential influx of worker families. (Ex. 1, p. 5.10-18.) Potential cumulative impacts on the Kern County Fire Department will be mitigated by agreements with the proposed projects to provide funding for additional staffing and equipment.

FINDINGS AND CONCLUSIONS

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

1. The Pastoria Energy Facility has a project labor agreement with the Kern County Building and Construction Trades Council to supply the workforce for construction and operation of the project.

2. The project will not cause an influx of a significant number of construction or operation workers into the local area.

3. The project will not result in significant adverse effects to local employment, housing, schools, public utilities, or emergency services.

4. Applicant will execute an agreement with the Kern County Fire Department to identify and implement mitigation measures necessary to ensure adequate fire protection related to project activities.

5. The project will provide an estimated $3.1 million in annual property tax revenues that will accrue to Kern County.

6. The project will spend an estimated $42-$43 million for local purchases of materials and equipment during construction.

7. The project does not present any indications of environmental justice issues.

8. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

We therefore conclude that implementation of the Condition of Certification, below, and the mitigation measures identified in the evidentiary record, ensures that the project will comply with all applicable laws, ordinances, regulations, and standards relating to socioeconomic factors as identified in the pertinent portions of APPENDIX A.

CONDITIONS OF CERTIFICATION

SOCIO-1 The project owner shall pay the statutory school impact development fee as required at the time of filing for the in-lieu building permit with the Kern County Department of Engineering and Survey Services and Building Inspection.

Verification: The project owner shall provide proof of payment of the statutory development fee to the Compliance Project Manager (CPM) in the next Monthly Compliance Report following the payment.

SOCIO-2 The project owner and its contractors and subcontractors shall recruit employees and procure materials and supplies within Kern County, unless:

- To do so will violate federal and/or state statutes;
- The materials and/or supplies are not available; or
- Qualified employees for specific jobs or positions are not available; or
- There is a reasonable basis to hire someone for a specific position from outside the local area.

Verification: At least 60 days prior to the start of construction, the project owner shall submit to the Energy Commission Compliance Project Manager (CPM) copies of contractor, subcontractor, and vendor solicitations and guidelines stating hiring and procurement requirements and procedures. In addition, the project owner shall notify the Energy Commission CPM in each Monthly Compliance Report of the reasons for any planned procurement of materials or hiring outside the local regional

area that will occur during the next two months. The Energy Commission CPM shall shall review and comment on the submittal as needed.

PASTORIA
POWER PROJECT

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

Under the Federal Clean Air Act (42 USCA/7401 et seq.), there are two major components of air pollution control requirements for stationary sources, New Source Review (NSR) and Prevention of Significant Deterioration (PSD). NSR is a regulatory process for evaluation of those pollutants that violate federal ambient air quality standards. Conversely, PSD is a regulatory process for evaluation of those pollutants that do not violate federal ambient air quality standards. The NSR analysis has been delegated by the Environmental Protection Agency (EPA) to the San Joaquin Valley Unified Air Pollution Control District (District). The EPA determines the conformance with the PSD regulations. The PSD requirements apply only to those projects (known as major sources) that emit more than 100 tons per year for any pollutant.

STATE

The California State Health and Safety Code, section 41700, requires that no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerate number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

LOCAL

The proposed project is subject to the following San Joaquin Valley Unified Air Pollution Control District (District) rules and regulations:

RULE 2201 - NEW AND MODIFIED STATIONARY SOURCE REVIEW RULE

The main functions of the District s New Source Review Rule are to allow for the issuance of Authorities to Construct, Permits to Operate, the application of Best Available Control Technology (BACT) to new permit sources and to require the new permit source to secure emission offsets.

SECTION 4.1 - BEST AVAILABLE CONTROL TECHNOLOGY

Best Available Control Technology is defined as: a) has been contained in any State Implementation Plan and approved by EPA; b) the most stringent emission limitation or control technique that has been achieved in practice for a class of source, or c) any other emission limitation or control technique which the District s Air Pollution Control Officer (APCO) finds is technologically feasible and is cost effective. BACT will apply to any air pollutant that results in an emissions increase of 2 pounds per day. In the case of the PEF, BACT will apply for NO_x, SO_2, PM10, VOC and CO emissions from all point sources of the project.

SECTION 4.2 - OFFSETS

Emissions offsets for new sources are required when those sources exceed the following emissions levels:

Sulfur oxides - 150 lbs/day

PM10 - 80 lb./day

Oxides of nitrogen - 10 tons/year

Volatile organic compounds - 10 tons/year

The PEF exceeds all of the above emission levels; therefore offsets are required for all four of these pollutants. The emission offsets provided shall be adjusted according to the distance of the offsets from the project proposed site.

- The ratios are:

Within 15 miles of the same source - 1.2 to 1

15 miles or more from the source - 1.5 to 1

Section 4.2.5.3 allows for the use of interpollutant offsets (including PM10 precursors for PM10) on a case-by-case basis, provided that the PEF demonstrates that the emissions increase will not cause a violation of any ambient air quality standard. The ratio for interpollutant trading shall be based on an air quality analysis and shall be equal to or greater than the minimum offsetting requirements (the distance ratios) of this rule.

SECTION 4.3 - ADDITIONAL SOURCE REQUIREMENTS

Rule 4.3.2.1 requires that a new source not cause, or make worse, the violation of an ambient air quality standard as demonstrated through analysis with air dispersion models.

RULE 2520 — FEDERALLY MANDATED OPERATING PERMITS

Requires that a project owner file a Title V Operating Permit from EPA with the District within 12 months of commencing operation. A project is subject to this requirement if any of the following apply: the project is a major stationary source (under PSD definitions), it has the potential to emit greater than 100 tons per year of a criteria pollutant, any equipment permitted is subject to New Source Performance Standards, the project is subject to Title IV Acid Rain program, or the owner is required to obtain a PSD permit from EPA. The Title V permit application requires that the owner submit information on the operation of the air polluting equipment, the emission controls, the quantities of emissions, the monitoring of the equipment as well as other information requirements.

RULE 2540 — ACID RAIN PROGRAM

A project greater than 25 MW and installed after November 15, 1990, must submit an acid rain program permit application to the District. The acid rain requirements will become part of the Title V Operating Program (Rule 2520). The specific requirements for the PEF will be discussed in the Compliance with LORS — Local later in this analysis.

RULE 4001 - NEW SOURCE PERFORMANCE STANDARDS

Specifies that a project must meet the requirements of the Federal New Source Performance Standards (NSPS) specified in Title 40, Code of Federal Regulations, Part 60, Chapter 1. Subpart GG, which pertains to Stationary Gas Turbines, requires that NO_x concentrations are a function of the heat rate of the combustion, which in this case would be approximately 116 ppmv at 15% O_2. In addition, the SO_2 concentration shall be less than 150 ppmv and the sulfur content of the fuel shall be no greater than 0.8 percent by weight.

RULE 4101 - VISIBLE EMISSIONS

Prohibits air emissions, other than water vapor, of more than Ringelmann No. 1 (20 percent opacity) for more than 3 minutes in any one hour.

RULE 4201 - PARTICULATE MATTER CONCENTRATION

Limits particulate emissions from sources such as the gas turbines, cooling towers and emergency fire water pumps to less than 0.1 grain per cubic foot of exhaust gas at dry conditions.

RULE 4703 - STATIONARY GAS TURBINES

Limits NO_x concentrations to 12.2 ppm for the SCR controlled turbines. In addition there is a limit in CO concentrations of less than 200 ppm.

RULE 4801 - SO_2 CONCENTRATION

Limits the SO_2 concentration emitted into the atmosphere to no greater than 0.2 percent by volume.

RULE 8010 - FUGITIVE DUST ADMINISTRATIVE REQUIREMENTS FOR CONTROL OF FINE PARTICULATE MATTER (PM-10)

Specifies the types of chemical stabilizing agents and dust suppressant materials that can (and cannot) be used to minimize fugitive dust.

RULE 8020 - FUGITIVE DUST REQUIREMENTS FOR CONTROL OF FINE PARTICULATE MATTER (PM-10) FROM CONSTRUCTION, DEMOLITION, EXCAVATION, AND EXTRACTION ACTIVITIES

Requires that fugitive dust emissions during construction activities be limited to no greater than 40 percent opacity by means of water application or chemical dust suppressants. The rule also encourages the use of paved access aprons,

gravel strips, wheel washers or other measures to limit mud or dirt carry-out onto paved public roads.

RULE 8030 - CONTROL OF PM10 FROM HANDLING AND STORAGE OF BULK MATERIALS

Limits the fugitive dust emissions from the handling and storage of materials. It specifies that bulk materials be transported using wetting agents, allow appropriate freeboard space in the vehicles, or be covered. It also requires that stored materials be covered or stabilized.

RULE 8060 - CONTROL OF PM10 FROM PAVED AND UNPAVED ROADS

Specifies the width of paved shoulders on paved roads or the use of chemical dust suppressants on unpaved roadways, shoulders and medians.

RULE 8070 - CONTROL OF PM10 FROM VEHICLE/EQUIPMENT PARKING, SHIPPING, RECEIVING, TRANSFER, FUELING AND SERVICE AREAS

This rule is intended to limit fugitive dust from unpaved parking areas by means of using water or chemical dust suppressants or the use of gravel. It also requires that the affected owners/operators shall remove tracked out mud and dirt onto public roadways once a day.

BIOLOGICAL RESOURCES

FEDERAL

CLEAN WATER ACT OF 1977

Title 33, United States Code, sections 1251 — 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26).

ENDANGERED SPECIES ACT OF 1973

Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide for protection of threatened and endangered plant and animal species, and their critical habitat.

MIGRATORY BIRD TREATY ACT

Title 16, United States Code, sections 703 - 712, prohibits the take of migratory birds.

STATE

CALIFORNIA ENDANGERED SPECIES ACT OF 1984

Fish and Game Code sections 2050 et seq. protects California s rare, threatened, and endangered species.

NEST OR EGGS — TAKE, POSSESS, OR DESTROY

Fish and Game Code section 3503 protects California s birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs or any bird.

BIRDS OF PREY OR EGGS — TAKE, POSSESS, OR DESTROY

Fish and Game Code section 3503.5 protects California s birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.

MIGRATORY BIRDS — TAKE OR POSSESSION

Fish and Game Code section 3513 protects California s migratory birds by making it unlawful to take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird.

FULLY PROTECTED SPECIES

Fish and Game Code sections 3511, 4700, 5050, and 5515 prohibits take of animals that are classified as Fully Protected in California.

Significant Natural Areas

Fish and Game Code section 1930 et seq. designates certain areas such as refuges, natural sloughs, riparian areas and vernal pools as significant wildlife habitat.

Streambed Alteration Agreement

Fish and Game Code section 1600 et seq. requires CDFG to review project impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions and other disturbances.

Native Plant Protection Act of 1977

Fish and Game Code section 1900 et seq. designates state rare, threatened, and endangered plants.

California Code of Regulations

Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

Regional Water Quality Board

To verify that the federal Clean Water Act permitted actions comply with state regulations, PEF will need to get a Section 401 certification from the San Joaquin Valley Regional Water Quality Control Board. The Regional Board provides its certification after reviewing the federal Nationwide Permit(s) that is provided by the U. S. Army Corp of Engineers.

LOCAL

Kern County General Plan Land Use, Open Space, and Conservation Elements of 1994

Section 8, Resources

Policy 14: Habitats of threatened and endangered species should be protected to the greatest extent possible.

Kern County General Plan Energy Element of 1990

Part 1 - Issues, Goals, Policies, and Implementation

Policy 12 - The County should work closely with local, state, and federal agencies to assure that all projects, both discretionary and ministerial, avoid or minimize direct impacts to fish, wildlife and botanical resources, whenever practical.

Policy 13 - The County should develop and implement measures that result in long-term compensation for wildlife habitat that is unavoidably damaged by energy exploration and development activities.

CULTURAL

Cultural resources have been protected under the federal Antiquities Act since 1906 (Title 16, U. S. Code, Section 431 et seq.), with many subsequent enactments, regulations, policies, and guidelines, including standards for professional consultant qualifications. Portions of the project which may require a United States Army Corps of Engineers (USACE) 404 Permit would be regarded as an undertaking and therefore subject to compliance with Section 106 under the National Historic Preservation Act (NHPA). The State of California also has historic preservation laws and criteria for the evaluation of cultural resources; these are largely parallel to the federal measures. Projects licensed by the Energy Commission are reviewed to ensure compliance with these laws, as summarized below.

National Environmental Policy Act (NEPA): Title 42, United States Code, Section 4321 et seq., requires federal agencies to consider potential environmental impacts of projects with federal involvement and to consider appropriate mitigation measures.

Federal Register 48 44739-44738, 190 (September 30, 1983); updated 62 33708-33723 (June 20, 1997). Federal Guidelines for Historic Preservation Projects. The US Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These outline the appropriate professional methods and techniques for the preservation of archaeological and historical properties. The Secretary s standards and guidelines are used by federal agencies, such as the Forest Service, the Bureau of Land Management, and the National Park Service. The State Historic Preservation Office refers to these standards in its requirements for selection of qualified personnel and in the mitigation of potential impacts to cultural resources on public lands in California.

National Historic Preservation Act 16 USC 470, Section 106 requires federal agencies to take into account the effects of their undertakings on historic properties through consultations beginning at the early stages of project planning. Regulations revised in 1997 (36 CFR Part 800 et. seq.) set forth procedures to be followed for determining eligibility for nomination, the nomination, and the listing of cultural resources in the National Register of Historic Places (NRHP). The eligibility criteria and the process are used by federal, state and local agencies in the evaluation of the significance of cultural resources. Very similar criteria and procedures are used by the state in identifying cultural resources eligible for listing in the California State Register of Historic Resources. Recent revisions to Section 106 in 1999 have emphasized the importance of Native American consultation.

Executive Order 11593, Protection of the Cultural Environment, May 13, 1971 (36 Federal Register 8921) orders the protection and enhancement of the cultural environment by providing leadership, establishing state offices of historic preservation, and developing criteria for assessing resource values.

American Indian Religious Freedom Act: Title 42, United States Code, section 1996 protects Native American religious practices, ethnic heritage sites, and land uses.

Native American Graves Protection and Repatriation Act (1990): Title 25, United States Code, Section 3001, et seq. This Act defines cultural items, sacred objects, and objects of cultural patrimony ; establishes an ownership hierarchy; provides for review; allows excavation of human remains, but stipulates return of the remains according to ownership; sets penalties; calls for inventories; and provides for return of specified cultural items.

STATE

Public Resources Code, Section 5020.1 defines several terms, including the following:

> (j) Historical resource includes, but is not limited to, any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California.
>
> (q) Substantial adverse change means demolition, destruction, relocation, or alteration such that the significance of an historical resource would be impaired.

Public Resources Code, Section 5024.1 establishes the California Register of Historical Resources; sets forth criteria to determine significance; defines eligible properties; and lists nomination procedures. The criteria are essentially the same as for eligibility to the NRHP, but stipulate that some properties which may not retain sufficient integrity to meet NRHP standards, may still be eligible for the California Register.

Title 14, California Code of Regulations, Section 4852(c) explains that a resource that has lost its historic character or appearance may still have sufficient integrity for the California Register.

Public Resources Code, Section 5097.5 states that any unauthorized removal or destruction of archaeologic or paleontologic resources on sites located on public land is a misdemeanor. As used in this section, public lands means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority or public corporation, or any agency thereof.

Public Resources Code, Section 5097.98 defines procedures for notification of discovery of Native American human remains and for the disposition of human remains and associated grave goods.

Public Resources Code, Section 5097.99 prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and sets penalties for these actions.

Public Resources Code, Section 5097.991 states that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.

Public Resources Code, Section 21000, et seq., California Environmental Quality Act (CEQA). This act requires the analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

Public Resources Code, Section 21083.2 states that if a project may affect a resource that has not met the definition of an historical resource as set forth in Section 21084, then the lead agency may determine whether the project may have a significant effect on such resources. If a potential for damage to unique resources can be demonstrated, such resources must be avoided; if they can not be avoided mitigation measures shall be required. The law also discusses excavation as mitigation; discussed the costs of mitigation for several types of projects; sets time frames for excavation; defines unique and non-unique archaeological resources; provides for mitigation of unexpected resources; and sets financial limitations for this section.

Public Resources Code, Section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource; the section further defines a historic resource and describes what constitutes a significant historic resource.

CEQA guidelines, Title 14, California Code of Regulations, Section 15064.5 addresses the significance of impacts to archaeological and historical resources. Subsection (a) defines the term historical resources. Subsection (b) explains when a project may be deemed to have a significant effect and defines terms. Subsection (c) describes CEQA s relevance to archaeological sites. If a resource is found to be an historical resource, Public Resources Code 21083.2 does not apply.

CEQA Guidelines, Title 14, California Code of Regulations, Section 15064.7, Thresholds of Significance. This section encourages agencies to develop thresholds of significance to be used in determining potential impacts and defines the term cumulatively significant.

CEQA Guidelines, Title 14, California Code of Regulations, Section 15126.4, Consideration and Discussion of Mitigation Measures Proposed to Minimize Significant Effects. Subsection (b) discusses impacts of maintenance, repair, stabilization, restoration, conservation, or reconstruction of a historical resource. Subsection (b) also discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place; alternatives include documentation or data recovery by scientific excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.

CEQA Guidelines, Appendix G: Issue V: Cultural Resources. Lists four questions to be answered in determining the potential for a project to impact archaeological, historical, and paleontological resources.

California Penal Code, Section 622.5: Anyone who willfully damages an object or thing of archaeological or historic interest can be found guilty of a misdemeanor.

California Health and Safety Code, Section 7050.5. If human remains are discovered during earth-disturbing activities or construction, the project owner is required to contact the county coroner.

Public Resources Code, Section 5097.98. If the county coroner determines that the remains are Native American, the coroner is required to contact the Native American Heritage Commission, which is then required to determine the Most Likely Descendant to inspect the burial and to make recommendations for treatment or disposition of the remains and any associated burial items.

LOCAL

Although the Energy Commission has pre-emptive authority over local laws, it typically ensures compliance with local laws, ordinances, regulations, standards, plans, and policies. The project site and associated linear facilities are all located within unincorporated portions of southern Kern County.

KERN COUNTY

General provisions of the Kern County General Plan of 1994 require maintenance of a County inventory of areas with potential cultural and archaeological significance (EHPP 1999a, p. 6-35).

EFFICIENCY

FEDERAL

No federal laws apply to the efficiency of this project.

STATE

CALIFORNIA ENVIRONMENTAL QUALITY ACT GUIDELINES

CEQA Guidelines state that the environmental analysis shall describe feasible measures which could minimize significant adverse impacts, including where relevant, inefficient and unnecessary consumption of energy (Cal. Code Regs., tit.˚14, ⁄˚15126.4(a)(1)). Appendix F of the Guidelines further suggests consideration of such factors as the project s energy requirements and energy use efficiency; its effects on local and regional energy supplies and energy resources; its requirements for additional energy supply capacity; its compliance with existing energy standards; and any alternatives that could reduce wasteful, inefficient and unnecessary consumption of energy (Cal. Code regs., tit. 14, ⁄15000 et seq., Appendix F).

LOCAL

No local or county ordinances apply to power plant efficiency.

FACILITY DESIGN

The applicable LORS for each engineering discipline, civil, structural, mechanical and electrical, are included in the application as part of the engineering appendices, Appendices C through H, and summarized in Section 7, Table 7 (PEF 1999a). A summary of these LORS includes: Title˚24, California Code of Regulations, which adopts the current edition of the California Building Code (CBC) as minimum legal building standards; the 1998 CBC for design of structures; American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code; and National Electrical Manufacturers Association (NEMA) standards.

GEOLOGY AND PALEONTOLOGY

The applicable LORS are listed in the AFC, in Sections 5.3, 5.5, and 5.8, (Pastoria 1999a). A brief description of the LORS for paleontological resources, geological hazards and resources, and surface water hydrology follows:

FEDERAL

There are no federal LORS for geological hazards and resources, or grading and erosion control. The Pastoria Energy Facility (PEF) is not located on lands owned by the United States Government.

STATE AND LOCAL

The California Building Code (CBC) 1998 edition is based upon the Uniform Building Code (UBC), 1997 edition, which was published by the International Conference of Building Officials. The CBC is a series of standards that are used in the investigation, design (Chapters 16 and 18) and construction (including grading and erosion control as found in Appendix Chapter 33). The CBC supplements the UBC s grading and construction ordinances and regulations.

The California Environmental Quality Act (CEQA) Guidelines Appendix G provides a checklist of questions that a lead agency should normally address if relevant to a project s environmental impacts.

Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.

Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geological hazards.

Sections (X) (a) and (b) pose questions about the project s effect on mineral resources.

The Standard Procedures, Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources (SVP 1994) are a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. They were adopted in October 1994 by a national organization of vertebrate paleontologists (the Society of Vertebrate Paleontologists).

HAZARDOUS MATERIALS

The following federal, state, and local laws and policies generally apply to the protection of public health and hazardous materials management. Staff s analysis examines the project s compliance with these requirements.

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (SARA) Title III and Clean Air Act of 1990 established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The Act (codified in 40 C. F. R., ⁄ 68.110 et seq.) requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of these Acts are reflected in the California Health and Safety Code, section 25531 et seq.

STATE

The California Health and Safety Code, section 25534, directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local Administering Agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP).

Title 8, California Code of Regulations, Section 5189, requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

Title 8, California Code of Regulations, Section 458 and Sections 500 — 515, set forth requirements for design, construction and operation of vessels and equipment used to store and transfer anhydrous ammonia. These sections generally codify the requirements of several industry codes, including the ASME Pressure Vessel Code, ANSI K61.1 and the National Boiler and Pressure Vessel Inspection Code. While these codes apply to anhydrous ammonia, they may also be used to design storage facilities for aqueous ammonia.

California Health and Safety Code, section 41700, requires that No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.

LOCAL AND REGIONAL

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials. These provisions are contained in Articles 79 and 80. The latest revision to Article˚80 was in 1997 (UFC, 1997). These articles contain minimum setback requirements for outdoor storage of ammonia.

The California Building Code contains requirements regarding the storage and handling of hazardous materials. The Chief Building Official must inspect and verify compliance with these requirements prior to issuance of an occupancy permit. A further discussion of these requirements is provided in the **Facility Design chapter** of this document.

LAND USE

KERN COUNTY GENERAL PLAN

The general plan is the legal document that acts as a constitution for land use and development in Kern County. It consists of the seven mandatory elements: land use, circulation, open space, conservation, housing, safety and seismic safety, and noise; and four optional elements: recreation, energy, hazardous waste management, and public services and facilities (Kern County 1994). The following land use designations of the Kern County General Plan are specific to the proposed project.

GENERAL PLAN LAND USE DESIGNATIONS

NONJURISDICTIONAL LAND

State and Federal Land - All property under the ownership and control of various state and federal agencies.

RESOURCE

Intensive Agriculture

Applies to areas devoted to the production of irrigated crops or having the potential for such use. Other agricultural uses may be consistent with the intensive agriculture designation. Minimum parcel size is 20 acres gross. Permitted uses include, but are not limited to:

Primary: irrigated cropland, orchards, vineyards, ranch and farm facilities, etc.; one single-family dwelling unit.

Compatible: livestock grazing, water storage, mineral and petroleum exploration and extraction, and public utility uses, etc., pursuant to provisions of the Zoning Ordinance.

Extensive Agriculture

Applies to agricultural uses involving large amounts of land with relatively low value-per-acre yields. Minimum parcel size is 20 acres gross, except lands under Williamson Act Contract, in which case the minimum parcel size shall be 80 acres gross. Permitted uses include, but are not limited to:

Primary: livestock grazing, dry land farming, ranching facilities, wildlife and botanical preserves, timber harvesting, etc.; one single-family dwelling unit.

Compatible: irrigated croplands, water storage or ground water extraction, recharge areas, mineral and petroleum exploration, recreational activities, etc.

Mineral and Petroleum

Applies to areas, which contain producing, or potentially productive, petroleum fields and mineral deposits. Uses are limited to activities directly associated with resource extraction. Minimum parcel size is 5 acres gross. Permitted uses include, but are not limited to:

Primary: mineral and petroleum exploration and extraction.

Compatible: extensive and intensive agriculture, mineral and petroleum processing, pipelines, power transmission facilities, communication facilities, equipment storage yards, and one single-family dwelling unit (subject to a Conditional Use Permit).

SPECIAL TREATMENT AREAS

These are areas for which area-wide land use plans have been prepared or approved. They include both Accepted County Plan Areas and Rural Community plans:

Accepted County Plan Areas: Specific land use areas for which plans have been prepared and approved.

Rural Community: Settlements in the County that have individual character and are recognized as unique communities meriting Specific Plan level of detail.

PHYSICAL CONSTRAINTS

Includes overlay zones denoting physical constraints. Those applicable include:

Flood Hazard: Based on the Flood Hazard Boundary Maps of the US Department of Housing and Urban Development and the Kern County Water Agency. These areas include, for example, flood channels and watercourses, riverbeds, and gullies. Development within these areas is subject to review by the County and will include conformity with adopted ordinances.

Steep slopes: Land with an average slope of 30 percent or steeper.

The following tables indicate the Kern County General Plan land use designations and existing land uses of the proposed project and transmission line corridors.

The existing general plan land use designations for the facility are represented in **LAND USE Table 1**.

LAND USE Table 1

Location or Linear Facility	Land Use Designation
Pastoria Energy Facility and Laydown Area	Extensive Agricultural/Intensive Agriculture/Mineral and Petroleum/Nonjurisdictional Lands

Route 1Transmission Line Route	Extensive Agricultural/Mineral and Petroleum/Nonjurisdictional Lands
Route 2A Water Supply Line	Mineral and Petroleum/Extensive Agricultural/Intensive Agricultural/Mineral and Petroleum
Route 3 Proposed Fuel Gas Supply Line	Mineral and Petroleum/Extensive Agricultural/Intensive Agricultural
Route 5 Access Road	Extensive Agricultural/Mineral and Petroleum/Nonjurisdictional Lands

The existing land uses for the facility are represented in **LAND USE Table 2**.

LAND USE Table 2

Location or Linear Facility	Existing Land Uses
Pastoria Energy Facility and Laydown Area	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture
Route 1Transmission Line Route	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture
Route 2A Water Supply Line	Undeveloped/Agriculture/Oil Fields
Route 3 Proposed Fuel Gas Supply Line	Undeveloped/Gravel Pit/Agriculture/Oil Wells
Route 5 Access Road	Undeveloped/Gravel Pit/CA Aqueduct/Agriculture

LAND USE PLANS AND POLICIES RELATED TO PEF

The following provisions of the Kern County General Plan, and U.S. Fish and Wildlife Service are specific to the proposed project. Please refer to the **Socioeconomic Resources** and **Noise** sections of the Preliminary Staff Assessment (PSA) for a discussion of the applicable policies of the Kern County General Plan. Please refer to the **Biological Resources** section of the PSA for a discussion of the applicable policies of the U.S. Fish and Wildlife Service and the California Department of Fish and Game.

NONJURISDICTIONAL LAND

Coordination and cooperation will be promoted among the County, the incorporated cities and the various special districts where their planning decisions and actions affect more than a single jurisdiction (Policy No. 1).

Land under state and federal jurisdiction will be considered as land designated for Resource Management on the General Plan map (Policy No. 4).

PHYSICAL CONSTRAINTS

Kern County will not permit new developments to be sited on land that is environmentally unsound to support such development (Policy No. 1).

Development will not be allowed in natural hazard areas pending the adoption of ordinances that establish conditions, criteria and standards in order to minimize risk to life and property posed by those risks (Policy No. 2).

Zoning and other land use controls will be used to regulate and, in some instances, to prohibit development in hazardous areas (Policy No. 3).

New development will not be permitted in areas of landslide or slope instability as designated in the Safety and Seismic Safety Element of the General Plan, and as mapped on the Kern County Seismic Hazard Atlas (Policy No. 6).

Regardless of percentage of slope, development on hillsides will be sited in the least obtrusive fashion, thereby minimizing the extent of topographic alteration required (Nonjurisdictional Land - Policy No. 1, p. 1 - Policy No. 9)

Development proposed in areas with steep slopes will be reviewed for conformity to the adopted Hillside Development Ordinance to ensure that appropriate stability, drainage, and sewage treatment will result (Policy No. 10).

Designated flood channels and watercourses, such as creeks, gullies, and riverbeds will be preserved as resource management areas or, in the case of the urban areas, as linear parks (Policy No. 12).

New development will be required to demonstrate the availability of adequate fire protection and suppression facilities (Policy No. 13).

Kern County will evaluate the potential noise impacts of any development-siting action or of any applications it acts upon that could significantly alter noise levels in the community and will require mitigative measures where significant adverse effects are identified (Policy No. 14).

The air quality effects of a proposed land use will be considered when evaluating development proposals (Physical Constraints - Policy No. 15, p. 2-3).

Kern County will disapprove projects found to have significant adverse effects on Kern County s air quality, unless the Board of Supervisors, Board of Zoning Adjustment, or the Director of Planning and Development Services, acting as Hearing Officer or Parcel Map Advisory Agency makes findings under CEQA (Policy No. 16).

SPECIAL TREATMENT AREAS

In areas designated Specific Plan Required with more than one owner, the interim designations will reflect the existing zoning pattern until the County prepares and adopts a Specific Plan (Policy 3(b)).

RESOURCE

Areas designated agricultural use, which include Class I and II agricultural soils with surface water delivery systems will be protected against residential and commercial subdivision and development activities (Policy No. 1).

Areas identified by the Soil Conservation Service as having high range-site value will be reserved for extensive agricultural use or as resource reserves if located within a County water district (Policy No. 2).

In areas with a Resource designation on the General Plan map, only industrial activities which directly and obviously relate to the exploration, production, and transportation of the particular resource will be considered to be consistent with this plan (Policy No. 4).

Development will be constrained, pending adoption of ordinances, which establish conditions, criteria, and standards, in areas containing valuable resources in order to protect the access to and economic use of these resources (Policy No. 9).

Rivers and streams in the County are important visual and recreational resources and wildlife habitats. Areas of riparian vegetation along rivers and streams will therefore be preserved when feasible to do so (Policy No. 11).

The County will maintain and enhance air quality for the health and well being of County residents by encouraging land uses which promote air quality and good visibility (Policy No. 13).

Habitats of threatened or endangered species should be protected to the greatest extent possible (Policy No. 14).

Areas designated as Resource Reserve, Extensive Agriculture, and Resource Management which are presently under Williamson Act Contracts will have a minimum parcel size of 80 acres until such time as a contract expires or is canceled, at which time the minimum parcel size will become 20 acres (Policy No. 15).

GENERAL PROVISIONS

Prior to issuance of any development or use permit, the County shall make the finding, based on information provided by California Environmental Quality Act (CEQA) documents, staff analysis, and the applicant, that adequate public or private services and resources are available to serve the proposed development. The developer shall assume full responsibility for costs incurred in service extensions or improvements that are required as a result of the proposed project (Policy No. 3).

The air quality implications of new development will be considered in approval of major developments or area wide land use designations (Policy No. 15).

The County will promote the preservation of designated historic buildings and the protection of cultural resources which provide ties with the past and constitute a heritage value to residents and visitors (Policy No. 16).

Maintain the County s inventory of areas of potential cultural and archaeological significance (Implementation G).

FISH AND WILDLIFE

Encourage programs to locate and determine populations of rare and endangered species (Implementation, P. 85).

ENERGY ELEMENT OF THE KERN COUNTY GENERAL PLAN

The County shall encourage the development and upgrading of transmission lines and associated facilities (e.g., substations) as needed to serve Kern County s residents and access the County s generating resources, insofar as transmission lines do not create significant environmental or public health and safety hazards (Policy No. 1).

The County shall review proposed transmission lines and their alignments for conformity with the Land Use Element of the Kern County General Plan (Policy No. 2).

In reviewing proposals for new transmission lines and/or capacity, the County shall assert a preference for upgrade of existing lines and use of existing corridors where feasible (Policy No. 3).

The County shall work with other agencies in establishing routes for proposed transmission lines (Policy No. 4).

The County shall discourage the siting of above ground transmission lines in visually sensitive areas (Policy No. 5).

The County should encourage new transmission lines to be sited/configured to avoid or minimize collision and electrocution hazards to raptors (Policy No. 6).

The County should monitor the supply and demand of electrical transmission capacity locally and statewide (Implementation A).

The County shall continue to maintain provisions in the Zoning Ordinance and update as necessary to provide for transmission line development (Implementation B).

KERN COUNTY ZONING CODE

The Kern County Zoning Ordinance was adopted in July 1997. The ordinance implements the Kern County General Plan by applying development standards and construction requirements on land as it is developed within the unincorporated areas of the county. The following sections of the Kern County Zoning Ordinance apply to the project: Section 19.80.30 of Chapter 19.80 (Special Development Standards — Commercial and Industrial Districts); Sections 19.82.030 and 19.82.090 of Chapter 19.82 (Offstreet Parking - Design and Development Standards); and Section 19.86.060 of Chapter 19.86 (Landscaping Standards — Industrial Uses). The following zoning divisions of the Kern County Zoning Ordinance apply to the project.

ZONING DISTRICTS

EXCLUSIVE AGRICULTURE (A)

Areas that are suitable for agricultural uses. This designation is designed to prevent the encroachment of incompatible uses onto agricultural lands and the premature conversion of such lands to non-agricultural uses. Permitted uses in the A District are limited primarily to agriculture and other activities compatible with agriculture.

LIMITED AGRICULTURE (A-1)

Areas that are suitable for a combination of estate-type residential development, agricultural uses, and other compatible uses.

The following table indicates the Kern County zoning designations of the proposed project and linear corridors.

Zoning Designations Within The Affected Environment

Location or Linear Facility	Zoning Designations
Pastoria Energy Facility and Laydown Area	A Exclusive Agriculture
Route 1Transmission Line Route	A Exclusive Agriculture/ A-1 Limited Agriculture
Route 2A Water Supply Line	A Exclusive Agriculture
Route 3 Proposed Fuel Gas Supply Line	A Exclusive Agriculture
Route 5 Access Road	A Exclusive Agriculture

NEED CONFORMANCE

STATE

CALIFORNIA CODE OF REGULATIONS

The Commissions Siting Regulations state The presiding member s proposed decision shall contain the presiding member s recommendation on whether the application shall be approved, and proposed findings and conclusions on each of the following: (a) Whether and the circumstances under which the proposed facilities are in conformance with the 12-year forecast for statewide and service area electric power demands adopted pursuant to Section 25309(b) of the Public Resources Code. (Cal. Code of Regs., tit. 20,⁄1752(a).)

PUBLIC RESOURCES CODE

The Energy Commission s Final Decision must include, among other things, Findings regarding the conformity of the proposed facility with the integrated assessment of need for new resource additions determined pursuant to subdivision (a) to (f), inclusive, of Section 25305 and adopted pursuant to Section 25308 or, where applicable, findings pursuant to Section 25523.5 regarding the conformity of a competitive solicitation for new resource additions determined pursuant to subdivisions (a) to (f), inclusive, of Section 25305 and adopted pursuant to Section 25308 that was in effect at the time that the solicitation was developed. (Pub. Resources Code,⁄25523(f).)

NEED CONFORMANCE CRITERION

In order to obtain a license from the Energy Commission, a proposed power plant must be found to be in conformance with the Integrated Assessment of Need. The criterion governing this determination, for projects deemed data adequate prior to July 1, 1999, are contained in the *1996 Electricity Report (ER 96)*, and are most succinctly described on page 72 of that document:

In sum, the *ER 96* need criterion is this: during the period when *ER 96* is applicable, proposed power plants shall be found in conformance with the Integrated Assessment of Need (IAN) as long as the total number of megawatts permitted does not exceed 6,737.

Prior to January 1, 2000, the Public Resources Code prohibited the Energy Commission from certifying a power plant unless the Commission made a finding that the facility was found to be in conformance with the Commission s integrated assessment of the need for new resource additions. [Pub. Resources Code⁄⁄ 25523(f) and 25524(a).] The Public Resources Code directed the Commission to do an integrated assessment of need, taking into account 5- and 12-year forecasts of electricity supply and demand, as well as various competing interests, and to adopt the assessment in a biennial electricity report.

On September 28, 1999, the Governor signed Senate Bill No. 110, which became Chapter 581, Statutes of 1999. This legislation repealed Public Resources Code sections 25523(f) and 25524(a) and amended other provisions relating to the assessment of need for new resources. It removed the requirement that the Commission make a specific finding that the proposed facility is in conformance with the adopted integrated assessment of need. Regarding need-determination, Senate Bill 110 states:

> Before the California electricity industry was restructured the regulated cost recovery framework for power plants justified requiring the commission to determine the need for new generation, and site only power plants for which need was established. Now that power plant owners are at risk to recover their investments, it is no longer appropriate to make this determination.

(Pub. Resources Code,／25009, added by Stats. 1999, ch. 581,／1.) Senate Bill 110 takes effect on January 1, 2000 (Cal. Const. Art. 4,／8.). As of January 1, 2000, the Commission is no longer required to determine if a proposed project conforms with an integrated assessment of need. As a result, an application for certification for which the Commission adopts a final decision after January 1, 2000, is not subject to a finding of need-conformance.

NOISE

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. ⁄ 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. ⁄ 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise level exposure as a function of the amount of time during which the worker is exposed (see **Noise: Appendix A, Table A4** immediately following this section). The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed; assuring that workers are made aware of overexposure to noise; and periodically testing the workers hearing to detect any degradation.

There are no federal laws governing offsite (community) noise.

STATE

Similarly, there are no state regulations governing offsite noise. Rather, state planning law (Gov. Code, ⁄ 65302) requires that local authorities such as counties or cities prepare and adopt a general plan. Government Code section 65302(f) requires that a noise element be prepared as part of the general plan to address foreseeable noise problems. In addition, Title 4, California Code of Regulations has guidelines for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed in **Table 1**.

Other state LORS include the California Environmental Quality Act (CEQA) and California Occupational Safety and Health Administration (Cal-OSHA) regulations.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

CEQA requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. The CEQA Guidelines (Cal. Code Regs., tit. 14, ⁄ 15000 et seq., Appendix G, ⁄ XI) explain that a significant effect from noise may exist if a project would result in:

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project .

CAL-OSHA

Cal-OSHA has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, // 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards described above.

LOCAL

KERN COUNTY GENERAL PLAN NOISE ELEMENT

Two policies enunciated in this noise element (Kern County, 1989) impact the construction and operation of a project such as the PEF. Policy (5) (a) prohibits new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into project design to reduce exterior noise to 65 dB L_{dn} or less. Policy (5) (b) prohibits new noise-sensitive land uses in noise-impacted areas unless effective mitigation measures are incorporated into project design to reduce interior noise within living spaces or other noise sensitive interior spaces to 45 dB L_{dn} or less. It should be noted that there are no current noise ordinances in Kern County.

PUBLIC HEALTH

FEDERAL

The Clean Air Act of 1970 (42 U.S.C., section 7401 et seq.) required establishment of ambient air quality standards to protect the public from the effects of air pollutants. These standards have been established by the United States Environmental Protection Agency (EPA) for the major air pollutants: nitrogen dioxide, ozone, sulfur dioxide, carbon monoxide, sulfates, and particulate matter with a diameter of 10 micron or less (PM10), and lead.

STATE

California Health and Safety Code section 39606 requires the California Air Resources Board (ARB) to establish California s ambient air quality standards to reflect the California-specific conditions that influence its air quality. Such standards have been established by the ARB for ozone, carbon monoxide, sulfur dioxide, PM10, lead, hydrogen sulfide, vinyl chloride and nitrogen dioxide. The same biological mechanisms underlie some of the health effects of most of these criteria pollutants as well as the noncriteria pollutants. The California standards are listed together with the corresponding federal standards in the **Air Quality** section.

California Health and Safety Code section 41700 states that No person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause or have a natural tendency to cause injury or damage business or property.

The California Health and Safety Code section 39650 et seq. mandates that the California Environmental Protection Agency (Cal-EPA) establish safe exposure limits for toxic, noncriteria air pollutants and identify the best available methods for their control. These laws also require that the new source review rules for each air district include regulations establishing procedures to control the emission of these pollutants. The toxic emissions from natural gas combustion are listed in ARB s April 11, 1996 California Toxic Emissions Factors (CATEF) database for natural gas-fired combustion turbines. Cal-EPA has developed specific cancer potency estimates for assessing their related cancer risks at specific exposure levels. For noncancer-causing toxic air pollutants, Cal-EPA established specific no-effects levels (known as reference exposure levels, or RELs) for assessing the likelihood of producing health effects at specific exposure levels. Such health effects would be considered significant only when exposure exceeds these reference levels. The Energy Commission staff (staff) uses these Cal-EPA potency estimates and reference exposure values in its health risk assessments.

California Health and Safety Code section 44300 et seq. requires facilities, which emit large quantities of criteria pollutants and any amount of noncriteria pollutants to provide the local air district an inventory of toxic emissions. Such facilities may also be required to prepare a quantitative health risk assessment to address the potential health risks involved. The ARB and the Air Quality Management District will ensure implementation of these requirements for the proposed project.

LOCAL

The San Joaquin Unified Air Pollution Control District (SJUAPCD, or the District) has no specific rules implementing Health and Safety Code section 44300. It does, however, require the results of a health risk assessment as part of the application for the Determination of Compliance. Pastoria has complied with this requirement.

RELIABILITY

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation (Cal. Code Regs., tit. 20,／1752(c)). Staff takes the approach that a project is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely the case if the project exhibits reliability at least equal to that of other power plants on that system.

SOCIOECONOMICS

FEDERAL

Executive Order 12898, Federal Actions to address Environmental Justice (EJ) in Minority Populations and Low-Income Populations. The order focuses federal attention on the environment and human health conditions of minority communities and directs agencies to achieve environmental justice as part of this mission. The Executive Order requires the US Environmental Protection Agency (EPA) and all other federal agencies (as well as state agencies receiving federal funds) to develop strategies to address this problem. Agencies are required to identify and address any disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and/or low-income populations. The Energy Commission receives federal funds and is thus subject to this Executive Order.

STATE

CALIFORNIA GOVERNMENT CODE, SECTION 65955-659973

It places levies against development projects near school districts. The administering agency is Kern County.

CALIFORNIA GOVERNMENT CODE, SECTION 65996-65997

As amended by SB 50 (Stats. 1998, ch. 407, Sec. 23), states that public agencies may not impose fees, charges or other financial requirements to offset the cost for school facilities.

LOCAL

Kern County General Plan - Public facilities component pertinent to socioeconomics.

(Policy No. 8) In evaluating a development application, Kern County will consider impacts on the local school districts.

(Implementation E) Determine the local cost of facility and infrastructure improvements and expansion which are necessitated by new development of any type and prepare a schedule of charges to be levied on the developer at the time of approval of the Final Map.

SOIL AND WATER RESOURCES

FEDERAL

CLEAN WATER ACT

The Clean Water Act (33 USC/1257 et seq.) requires states to set standards to protect water quality through the regulation of point source and certain non-point source discharges to surface water. These discharges are regulated through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits. Stormwater discharges during construction and operation of a facility, and incidental non-stormwater discharges associated with pipeline construction also fall under this act, and are addressed through a general NPDES permit. In California, requirements of the Clean Water Act regarding regulation of point source discharges and stormwater discharges are delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCB). Section 404 of the act regulates the discharge of dredged or fill material into waters of the United States, including rivers, streams and wetlands. Site-specific or general (nationwide) permits for such discharges are issued by the Army Corp of Engineers (ACOE) and are certified by the RWQCB.

STATE

PORTER-COLOGNE WATER QUALITY CONTROL ACT

The Porter-Cologne Water Quality Control Act of 1967, Water Code section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards and implementation procedures. The criteria for the project area are contained in the Water Quality Control Plan for the Tulare Lake Basin (1995). The Porter-Cologne Water Quality Control Act also requires the SWRCB and the nine RWQCBs to ensure the protection of water quality through the regulation of waste discharges to land. Such discharges are regulated under Title 23, California Code of Regulations, Chapter 15, Division 3. These regulations require that the RWQCB issue a Waste Discharge Requirement which specifies conditions regarding the construction, operation, monitoring and closure of the waste disposal site, including injection wells for waste disposal.

STATE WATER RESOURCES CONTROL BOARD POLICY 75-58

The SWRCB has also adopted a number of policies that provide guidelines for water quality protection. The principle policy of the State Board which addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling (adopted by the Board on June 19, 1976 by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources

or other methods of cooling would be environmentally undesirable or economically unsound. The SWRCB Policy 75-58 requires that power plant cooling water should, in order of priority come from wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy also addresses cooling water discharge prohibitions.

401 WATER QUALITY CERTIFICATION

Section 401 of the Clean Water Act provides for state certification that federal permits allowing discharge of dredged or fill material into waters of the United States will not violate federal and state water quality standards. A number of the proposed PEF linear facilities cross ephemeral drainages that are considered waters of the United States. For the PEF, the Central Valley RWQCB will issue the 401 certification for this project.

WATER SUPPLY PERMIT

Under Title 22 of the California Code of Regulations, the California Department of Health Services reviews and approves surface water treatment systems that serve the domestic water needs of more than 25 people daily, 60 days out of the year. This program is administered through the Drinking Water Program.

MONTEREY AGREEMENT AND THE KERN WATER BANK

The Monterey Agreement was the result of extensive negotiations between SWP contractors and the State to resolve disputes among them. Included in this agreement was the exchange of 45,000 acre-feet of SWP contractor entitlements for the Kern Water Bank (KWB) property and transfer of the bank to the Kern Water Bank Authority (KWBA). A final Program EIR was completed on the Monterey Agreement in 1995 that included possible impacts associated with the KWB. An Initial Study and Addendum to the Monterey Agreement EIR (KWB Addendum EIR) was completed for the KWBA to address issues associated with the Habitat Conservation Plan/Natural Community Conservation Plan. Subsequent to this KWB Addendum EIR, mitigation measures were developed to address possible impacts associated with the construction, operation and maintenance of the KWB, as well as a water recharge and recovery, farming and conservation bank program and related habitat conservation activities proposed for approximately 20,000 acres in Kern County. Implementation of the KWB program and subsequent sale of groundwater to third parties were considered and addressed in these documents.

The mitigation measures specify actions to be taken during construction, operation and maintenance of the bank including biological monitoring, construction practices, implementation of the MOU between KWBA and its member agencies and surrounding entities and protection of various resources (KWBA 1997). The MOU specified a set of rules and processes (i.e, minimum operating criteria, a comprehensive monitoring program that includes surrounding entities and a dispute resolution process) to ensure that the KWB

provides maximum benefits to its participants without adversely impacting water levels, water quality or resulting in land subsidence in the area (MOU 1995).

LOCAL

Kern County Code of Building Regulations, Chapter 17.28 sets forth grading requirements.

Kern County Environmental Health Department specifies permit requirements for onsite water treatment facilities that serve less than 25 people (not just employees) more than 60 days a year.

TRAFFIC AND TRANSPORTATION

FEDERAL

The federal government addresses transportation of goods and materials in Title 49, Code of Federal Regulations:

Title 49, Code of Federal Regulations, section 171-177, governs the transportation of hazardous materials, the type of materials defined as hazardous, and the marking of the transportation vehicles.

Title 49, Code of Federal Regulations, section 350-399, and Appendices A-G, Federal Motor Carrier Regulations, addresses safety considerations for the transport of goods, materials and substances over public highways.

STATE

The California Vehicle Code and the Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, the transportation of hazardous materials and right-of-way. In addition, the California Health and Safety Code addresses the transportation of hazardous materials. Specifically, these codes include:

California Vehicle Code, section 353, defines hazardous materials.

California Vehicle Code, sections 31303-31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.

California Vehicle Code, section 31030, requires that permit applications shall identify the commercial shipping routes they propose to utilize for particular waste streams.

California Vehicle Code, sections 31600-31620, regulates the transportation of explosive materials.

California Vehicle Code, sections 32000-32053, regulates the licensing of carriers of hazardous materials and includes noticing requirements.

California Vehicle Code, sections 32100-32109, establishes special requirements for the transportation of inhalation hazards and poisonous gases.

California Vehicle Code, sections 34000-34121, establishes special requirements for the transportation of flammable and combustible liquids over public roads and highways.

California Vehicle Code, sections 34500, 34501, 34501.2, 34501.4, 34501.10, 34505.5-7, 34507.5 and 34510-11, regulate the safe operation of vehicles, including those which are used for the transportation of hazardous materials.

California Vehicle Code, sections 2500-2505, authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.

California Vehicle Code, sections 13369, 15275, and 15278, address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles. In addition, it requires the possession of certificates permitting the operation of vehicles transporting hazardous materials.

California Streets and Highways Code, sections 117 and 660-72, and California Vehicle Code 35780 et seq., require permits for the transportation of oversized loads on county roads.

California Streets and Highways Code, sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulate right-of-way encroachment and the granting of permits for the encroachment on state and county roads.

California Health and Safety Code, sections 25160 et seq., address the safe transport of hazardous materials.

LOCAL

KERN COUNTY

The Circulation Element of the Kern County General Plan sets up local goals and guidance policies about building and transportation improvements. It introduces planning tools essential for achieving the local transportation goals and policies (County of Kern, 1972). Relevant goals and policies include, in part, the following:

PRIVATE DEVELOPMENT ACCESS TO EXISTING ROADWAY NETWORK

As a condition of private development approval, developers shall build roads needed to access the existing road network. Developers shall build these roads to County standards (Policy No. 1).

GROWTH BEYOND 2010

The County should monitor traffic volumes and patterns on County major highways (Policy No. 1).

Development applications must demonstrate that sufficient transportation capacity is available to serve the proposed project at Level of Service D (LOS D) or better.

TRUCKS ON HIGHWAYS

Make the California Department of Transportation (Caltrans) aware of heavy truck activity on Kern County s roads (Policy No. 1).

Start a program that monitors truck traffic operations (Policy 2).

Promote a monitoring program of truck traffic operations (Policy 2).

TRUCKS ROUTES

The Transportation Management Department should oversee truck travel patterns and be made aware of any locations where heavy trucks traverse residential areas (Policy No. 1).

TRANSPORTATION OF HAZARDOUS MATERIALS

State maintained highways are acceptable as commercial hazardous waste transportation routes (Policy No. 1).

Kern County and affected cities should reduce use of County maintained roads and city maintained streets for transportation of hazardous materials (Policy No. 3).

Restrict commercial transportation of hazardous materials in accordance with Vehicle Code, section 31303 (Policy No. 4). This Circulation Element recommends charting routes where hazardous material shipments can go.

ROAD PAVEMENT DAMAGE

The County shall continue to maintain pavement conditions and check operating conditions by collection and review of traffic flow and accident data to rate the circulation system (Policy No. 1).

TRANSMISSION LINE SAFETY AND NUISANCE

AVIATION SAFETY

Any hazard to area aircraft relates to the potential for collision with the line in the navigable air space. The applicable federal LORS as discussed below are intended to ensure the distance and visibility necessary to avoid such collisions.

FEDERAL

Title 14, Part 77 of the Federal Code of Regulations (CFR), Objects Affecting the Navigation Space Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a Notice of Proposed Construction or Alteration is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the structure is located to avoid any significant hazards to area aviation.

FAA Advisory Circular (AC) No. 70/460-2H, Proposed Construction and or Alteration of Objects that may Affect the Navigation Space. This circular informs each proponent of a project that could pose an aviation hazard of the need to file the Notice of Proposed Construction or Alteration (Form 7640) with the FAA.

FAA AC No. 70/460-1G, Obstruction Marking and Lighting. . This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

INTERFERENCE WITH RADIO-FREQUENCY COMMUNICATION

Transmission line-related radio-frequency interference is one of the indirect effects of line operation produced by the physical interactions of line electric fields. The level of such interference usually depends on the magnitude of the electric fields involved. Because of this, the potential for such impacts could be assessed from field strength estimates obtained for the line. The following regulations are intended to ensure that such lines are located away from areas of potential interference and that any interference is mitigated whenever it occurs.

FEDERAL

Federal Communications Commission (FCC) regulations in Title 47 CFR, Section 15.25. Provisions of these regulations prohibit operation of any devices producing force fields, which interfere with radio communications, even if (as with transmission lines) such devices are not intentionally designed to produce radio-frequency energy. Such interference is due to the radio noise produced by the

action of the electric fields on the surface of the energized conductor. The process involved is known as corona discharge but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis. Staff usually recommends specific conditions of certification to ensure compliance with this FCC requirement.

STATE

General Order 52 (GO-52), California Public Utilities Commission (CPUC). Provisions of this order govern the construction and operation of power and communications lines and specifically deal with measures to prevent or mitigate inductive interference. Such interference is produced by the electric field induced by the line in the antenna of a radio signal receiver.

Several design and maintenance options are available for minimizing these electric field-related impacts. When incorporated in the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

AUDIBLE NOISE

INDUSTRY STANDARDS

There are no design-specific federal regulations to limit the audible noise from transmission lines. As with radio noise, such noise is limited instead through design and maintenance standards established from industry research and experience as effective without significant impacts on line safety, efficiency maintainability and reliability. All high-voltage lines are designed to assure compliance. Such noise usually results from the action of the electric field at the surface of the line conductor and could be perceived as a characteristic crackling, frying or hissing sound or hum. Since (as with communications interference), the noise level depends on the strength of the line electric field, the potential for occurrence can be assessed from estimates of the field strengths expected during operation. Such noise is usually generated during wet weather and from lines of 345 kV or higher. It is, therefore, not generally expected at significant levels from lines of less than 345 kV such as the one proposed for Pastoria. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing the fair-weather audible noise from modern

transmission lines to be generally indistinguishable from background noise at the edge of a 100-ft right-of-way.

NUISANCE SHOCKS

INDUSTRY STANDARDS

There are no design-specific federal regulations to limit nuisance shocks in the transmission line environment. For modern high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). 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. Such electric charges are induced in different ways by the line electric and magnetic fields.

As with lines of the type proposed, the applicant will be responsible in all cases for ensuring compliance with these grounding-related practices within the right-of-way. Staff usually recommends specific conditions of certification to ensure that such grounding is made within the right-of-way by both the applicant and property owners.

FIRE HAZARDS

The fire hazards addressed through the following regulations are those that could be caused by sparks from conductors of overhead lines or that could result from direct contact between the line and nearby trees and other combustible objects.

STATE

General Order 95 (GO-95), CPUC, Rules for Overhead Electric Line Construction specifies tree-trimming criteria to minimize the potential for power line-related fires.

Title 14 Section 1250 of the California Code of Regulations, Fire Prevention Standards for Electric Utilities specifies utility-related measures for fire prevention.

HAZARDOUS SHOCKS

The hazardous shocks that are addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line. 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.

STATE

GO-95, CPUC. Rules for Overhead Line Construction . These rules specify uniform statewide requirements for overhead line construction regarding ground clearance, grounding, maintenance and inspection. Implementing these requirements ensures the safety of the general public and line workers.

Title 8, CCR, Section 2700 et seq., High Voltage Electric Safety Orders . These safety orders establish essential requirements and minimum standards for safely installing, operating, and maintaining electrical installations and equipment.

INDUSTRIAL STANDARDS

There are no design-specific federal regulations to prevent hazardous shocks from power lines. Safety is assured through compliance with the requirements in the National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. These provisions specify the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. They are intended to minimize the potential for direct or indirect contact with the energized line.

ELECTRIC AND MAGNETIC FIELD (EMF) EXPOSURE

The possibility of deleterious health effects from electric and magnetic field exposure has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of considering both as EMF exposure. As noted by the applicant, (Pastoria 1999a, pages 4-6 through 4-8), the available evidence as evaluated by CPUC and other regulatory agencies, has not established that such fields pose a significant health hazard to exposed humans. However, staff considers it important, as does the CPUC, to note that while such a hazard has not been established from the available evidence, the same evidence does not serve as proof of a definite lack of a hazard. Staff, therefore considers it appropriate, in light of present uncertainty, to reduce such fields to some degree, where feasible, until the issue is better understood. The challenge has been to establish when, and how far to reduce them.

While there is considerable uncertainty about the EMF/health effects issue, the following facts have been established from the available information and have been used to establish existing policies:

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.

STATE

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. It required each utility within its jurisdiction to establish EMF-reducing design guidelines for all new or upgraded power lines and related facilities within their respective service areas. The CPUC further established specific limits on the resources to be used in each case for field reduction. Such limitations were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Utilities not within the jurisdiction of the CPUC voluntarily comply with these CPUC requirements. This PUC policy resulted from assessments made to implement CPUC Decision 93-11-013 of 1989.

In keeping with this CPUC policy, staff requires evidence that each proposed line will be designed according to the EMF-reducing design guidelines applicable to the utility service area involved. These field-reducing measures can impact line operation if applied without appropriate regard for environmental and other local issues bearing on safety, reliability efficiency and maintainability. It is therefore, up to each applicant to ensure that such measures are applied in ways, and to an extent, without significant impacts on line operation. The extent of such applications will be reflected by the ground-level field strengths as measured during operation. When estimated or measured for the line, such field strengths can be used by staff and other regulatory agencies for comparison with fields of lines of similar voltage and current-carrying capacity. Such field strengths can be estimated for any given design using established procedures. Estimates are specified 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 structures, degree of cancellation from nearby conductors, distance between conductors and, in the case of magnetic fields, amount of current in the line.

Since each new line in California is currently required to be designed according to the EMF-reducing guidelines of the utility in the service area involved, their fields are required under existing CPUC policies to be similar to fields from similar lines in that service area. A condition of certification is usually proposed by staff to ensure implementation of the reduction measures necessary. The applicable condition for this project is TLSN-1.

INDUSTRIAL STANDARDS

No federal regulations have been established specifying environmental limits on the strengths of fields from power lines. However, the federal government

continues to conduct and encourage research necessary for an appropriate policy on the EMF issue.

In the face of the present uncertainty, several states have opted for design-driven regulations ensuring that fields from new lines are generally similar to those from existing lines. Some states (Florida, Minnesota, New Jersey, New York, Montana) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects. Most regulatory agencies believe, as does staff, that health-based limits are inappropriate at this time. They also believe that the present knowledge of the issue does not justify any retrofit of existing lines.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component, whose effects can manifest as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate building materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic fields from the more visible transmission and other high-voltage power lines, staff considers it important for perspective, to note that an individual in a home could be exposed for short periods to much stronger fields while using some common household appliances (National Institute of Environmental Health Services and the U.S Department of Energy, 1995). Scientists have not established which of these types of exposures would be more biologically meaningful in the individual. Staff notes such exposure differences only to show that high-level magnetic field exposures regularly occur in areas other than the power line environment.

TRANSMISSION SYSTEM ENGINEERING

California Public Utilities Commission (CPUC) General Order 95 (GO-95), Rules for Overhead Electric Line Construction , formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance, operation or use of overhead electric lines and to the public in general.

CPUC Rule 21 provides standards for the reliable connection of parallel generating stations connected to participating transmission owners.

Western Systems Coordinating Council (WSCC) Reliability Criteria provides the performance standards used in assessing the reliability of the interconnected system. These Reliability Criteria require the continuity of service to loads as the first priority and preservation of interconnected operation as a secondary priority. The WSCC Reliability Criteria includes the Reliability Criteria for Transmission System Planning, Power Supply Design Criteria, and Minimum Operating Reliability Criteria. Analysis of the WSCC system is based to a large degree on WSCC Section 4 Criteria for Transmission System Contingency Performance which requires that the results of power flow and stability simulations verify established performance levels. Performance levels are defined by specifying the allowable variations in voltage, frequency and loading that may occur on systems other than the one in which a disturbance originated. Levels of performance range from no significant adverse effect outside a system area during a minor disturbance (loss of load or facility loading outside emergency limits) to a performance level that only seeks to prevent system cascading and the subsequent blackout of islanded areas. While controlled loss of generation, load, or system separation is permitted in extreme circumstances, their uncontrolled loss is not permitted (WSCC 1998).

North American Electric Reliability Council (NERC) Planning Standards provide policies, standards, principles and guides to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC s Criteria for Transmission System Contingency Performance. The NERC planning standards provide for acceptable system performance under normal and contingency conditions, however the NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).

Cal-ISO Reliability Criteria also provide policies, standards, principles and guides to assure the adequacy and security of the electric transmission system. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC s Criteria for Transmission System Contingency Performance and the NERC Planning Standards. The Cal-ISO Reliability Criteria incorporate the WSCC Criteria and NERC Planning Standards. However, the Cal-ISO Reliability Criteria also provide some additional requirements that are not found in the WSCC Criteria or the NERC Planning Standards. The Cal-ISO Reliability

Criteria apply to all existing and proposed facilities interconnecting to the Cal-ISO controlled grid.

Cal-ISO Scheduling Protocols and Dispatch Protocols require conformance with NERC, WSCC, and Local Area Reliability and Planning Criteria. These standards will be applied to the assessment of the system reliability implications of the MEC project. Also of major importance to projects which may sell through the California Power Exchange (Cal-PX) are the Cal-ISO Day/Hour Ahead Inter-zonal Congestion Management Scheduling Protocol (SP 10), the Transmission System Loss Management Scheduling Protocol (SP 4), and the Creation of the Real Time Merit Order Stack (SP 11). The Congestion Management Scheduling Protocol provides that the operation of power plants not violate system criteria when market participants request generation dispatch or the use of major interties. The Real Time Merit Order Stack is developed based on increasing energy bid prices so that the least cost bids are accepted early on and if congestion is anticipated the highest bids are not selected. The Transmission System Loss Management Scheduling Protocol uses the Cal-ISO power flow model to identify total transmission losses at each generating unit and scheduling point. Additional calculations are performed to determine the actual net power output required by the generating units to meet their scheduled obligations. (Cal-ISO 1998a, Cal-ISO 1998b).

Cal-ISO Participating Generator Agreement consists of detailed explanations of the requirements in the Cal-ISO Tariff pertaining to the paralleled generating unit.

VISUAL

FEDERAL AND STATE

The proposed project, including the linear facilities, is located on private lands and is thus not subject to federal land management requirements. Likewise, no roadway in the project vicinity is a designated or eligible State Scenic Highway. Therefore, no federal or state regulations pertaining to scenic resources are applicable to the project.

LOCAL

The proposed power plant and linear facilities would be located in Kern County.

KERN COUNTY

Kern County has no specific policies on visual or aesthetic resources that apply to the PEF. However, these topics are addressed in the Kern County General Plan, Open Space Element, and are implemented by the Kern County Planning and Development Services Department (Kern County, 1994).

WASTE

FEDERAL

RESOURCE CONSERVATION AND RECOVERY ACT - RCRA (42 U.S.C.／6922)

RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding:

Record keeping practices which identify quantities of hazardous wastes generated and their disposition,

Labeling practices and use of appropriate containers,

Use of a manifest system for transportation, and

Submission of periodic reports to the EPA or authorized state.

TITLE 40, CODE OF FEDERAL REGULATIONS, PART 260

These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.

STATE

CALIFORNIA HEALTH AND SAFETY CODE／25100 ET SEQ. (HAZARDOUS WASTE CONTROL ACT OF 1972, AS AMENDED).

This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

TITLE 22, CALIFORNIA CODE OF REGULATIONS,／66262.10 ET SEQ. (GENERATOR STANDARDS)

These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous

waste must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established.

LOCAL

KERN COUNTY GENERAL PLAN PUBLIC FACILITIES ELEMENT

All generators and processors of hazardous waste are encouraged to develop long-term waste management programs. Large generators of hazardous waste should be encouraged to recycle, treat and detoxify their wastes on site. Many such processes could be implemented in existing industrial map designations, if zoned appropriately (Policy No. 17).

WORKER SAFETY

FEDERAL

In December 1970 Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act of 1970 (the Act). The Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, ⁄651 (29 U.S.C.⁄⁄651 through 678). This public law is published at Title 29 of the Code of Federal Regulations, under General Industry Standards, Parts 1910.1 through 1910.1450 (29 CFR Part 1910.1 - 1910.1450). It defines the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the safety and health standards now in force under the Act for general industry represent a compilation of materials authorized by the Act from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI), and the National Fire Protection Association (NFPA) which publishes the National Fire Codes. The Federal Department of Labor established the Occupational Safety and Health Administration (OSHA) in 1971 to discharge the responsibilities assigned by the Act.

Applicable Federal requirements include:

29 U.S. Code⁄651 et seq. (Occupational Safety and Health Act of 1970)

29 CFR Part 1910.1 - 1910.1450 (Occupational Safety and Health Administration Safety and Health Regulations)

29 CFR Part 1952.170 — 1952.175 (Federal approval of California s plan for enforcement of its own Safety and Health requirements, in lieu of most of the Federal requirements found in 29 CFR Part 1910.1 — 1910.1500)

STATE

California passed the Occupational Safety and Health Act of 1973 (Cal/OSHA) as published in the California Labor Code⁄6300. Regulations resulting from the Act are published at Title 8 of the California Code of Regulations, beginning with Part 450 (8 CCR Part 450 et seq.) The California Labor Code requires that the State Standards Board must adopt standards at least as effective as the federal standards (Calif. Labor Code⁄142.3(a)). State Health and Safety laws meet or exceed the Federal requirements. Hence, California obtained federal approval of its State health and safety regulations, in lieu of the federal requirements published at 29 CFR Parts 1910.1 - 1910.1500). The Federal Secretary of Labor, however, continually oversees California s program and will enforce any federal standard for which the State has not adopted a Cal/OSHA counterpart.

The State of California Department of Industrial Relations administers the Cal/OSHA plan and oversees industrial accidents, occupational safety and health, labor standards enforcement, statistics and research, and the State Compensation Insurance Fund (workers compensation).

Employers are responsible for informing their employees about workplace hazards, potential exposure and the work environment (Calif. Labor Code / 6408), principally through the use of the Material Safety Data Sheet (MSDS) (8 CCR / 5194). This regulation was promulgated in response to California s Hazardous Substances Information and Training Act of 1990 (1980 Calif. / 874 and Calif. Labor Code // 6360-6399.7). It mirrored the Federal Hazard Communication Standard (29 CFR Part 1910.1200) which established an employee s right to know about chemical hazards in the workplace.

Finally, California Senate Bill 198 required that employers establish and maintain a written Injury and Illness Prevention Program to identify workplace hazards and communicate them to its employees through a formal employee training program (8 CCR 3203).
Applicable State requirements include:

8 CCR / 339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act

8 CCR / 450, et seq. Cal/OSHA regulations

24 CCR / 3, et seq. - incorporates the current edition of the Uniform Building Code

La Follette Bill (Health and Safety Code / 25500, et seq.) - Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at the facility

Health and Safety Code / 255000 - 25541 - Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at the facility

LOCAL

The California Building Standards Code published at Title 24 of the California Code of Regulations, (24 CCR / 3, et seq.) is comprised of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and fire codes applicable to the project. Local planning /building & safety departments enforce the California Uniform Building Code.

National Fire Protection Association (NFPA) standards are published in the California Fire Code. The fire code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive

construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code reflects the body of regulations published at Part 9 of the California Code of Regulations pertaining to the California Fire Code (24 CCR Part 9).
Similarly the Uniform Fire Code Standards, a companion publication to the California Fire Code, contains standards of the American Society for Testing and Materials and the NFPA. It is the United State s premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition.

Applicable local requirements include:

1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9)

Uniform Fire Code Standards

California Building Code Title 24, California Code of Regulations (24 CCR／3, et seq.)

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.2 Need for Facility Demand Conformance	Section 2.0, Project Objectives	None	None applicable.	--	--
7.3 Project Siting and Construction				--	--
7.3.1 Engineering Geology	Section 5.3, Geological Hazards and Resources	Federal	None applicable.	--	--
		State	Cal. PRC 25523(a); 20 CCR/ 1752(b) & (c).	Kern County Building Dept.	Protect environment quality and assure public health.
		Local	California Building Code (CBC) Appendix Chapter 33.	Kern County Building Dept.	Control excavation, grading, construction, to safeguard life and property welfare.
		Industry	See Foundations and Civil Engineering Design Criteria (Appendix C).	--	Meet design criteria.
7.3.2 Civil and Structural Engineering	Section 3.5, Facility Civil/ Structural Features	Federal	None applicable.	--	--
		State	None applicable.	--	--
		Local	Kern County Improvement Standards	Kern County Engineering and Design Services	Meet Design Criteria

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.3.3 Mechanical Engineering		Industry	See Foundations and Civil Engineering Design Criteria (Appendix C) and Structural and Seismic Engineering Design Criteria (Appendix D).	--	Meet design criteria.
		Federal	None applicable.	--	--
		State	State Fire Marshall	--	Boiler and Pressure Vessel Code Inspection
		Local	None applicable.	--	--
		Industry	See Mechanical Engineering Design Criteria (Appendix E) and Control Systems Engineering Design Criteria (Appendix G).	--	Meet design criteria.
7.3.4 Electrical Engineering		Federal	None applicable.	--	--
		State	None applicable.	--	--
		Local	None applicable.	--	--
		Industry	Control Systems Engineering Design Criteria (Appendix G) and Electrical Engineering Design Criteria (Appendix F).	--	Meet design criteria.
7.4 Project Design and Operation					
7.4.1 Power Plant Reliability		Federal	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.4.1 Power Plant Reliability (continued)		State	None applicable.	--	--
		Local	None applicable.	--	--
		Industry	EPRI, NERC, various codes and standards for components.	--	EPRI and NERC trade associations guidelines will be followed.
7.4.2 Public/Worker Safety and Health Protection	Section 5.16, Public Health; Section 5.17, Worker Safety	Federal	Occupational Health & Safety Act of 1970 (OSHA), 29 USC 651 et seq.; 29 CFR 1910 et seq.; and 29 CFR 1926 et seq.	Fed-OSHA and Cal-OSHA	Meet employee health and safety standards for employer-employee communications, electrical operations, and chemical exposures.
			Department of Labor, Safety and Health Regulations for Construction Promulgated Under Section 333 of the Contract Work Hours and Safety Standards Act, 40 USC 327 et seq.	Fed-OSHA and Cal-OSHA	Meet employee health and safety standards for construction activities. Requirements addressed by CCR Title 8, General Construction Safety Orders.
			Uniform Fire Code, Article 80, 79, 4.	Kern County Fire Department 2	Meet requirements for the storage and handling of hazardous materials (Article 80), flammable and combustible liquids (Article 79), and for obtaining permits (Article 4).
			National Fire Protection Association (See Table 7.4-1 for list of standards).	Kern County Fire Department 2	Meet standards necessary to establish a reasonable level of safety and property protection from the hazards created by fire and explosion.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.4.2 Public/Worker Safety and Health Protection (Continued)		State	California Code of Regulations, Title 8.	Cal-OSHA	Meet requirements for a safe and hazard-free working environment. Categories of requirements include General Industry Safety Orders, General Construction Safety Orders, Electrical Safety Orders.
			California Clean Air Act, California Health & Safety Code 39650 et seq.	California Air Resources Board (CARB), San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) 5	Meet requirements for Best Available Control Technology to minimize exposure limits to toxic air pollutants and possible risk assessments for carcinogen pollutants.
			California Health & Safety Code, Part 6, Section 44300 et seq.	SJVUAPCD 1	Estimate emissions for listed air toxic pollutants and submit inventory to air district for major sources of criteria air pollutants. Follow-up from air district may require a health risk assessment.
		Local	Kern County Zoning Ordinance.	Kern County Engineering and Design Services	Provide safety setbacks as required by Kern County Fire Department.
		Industry	Various	Various	Industry codes and trade association standards are typically requirements of the manufacturers of equipment - see text (7.4.2) for partial listing.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.4.3 Transmission Line Safety and Nuisance	Section 3.6, Transmission Facilities; Section 4.2, Transmission Line Safety and Nuisance	Federal	14 CFR Part 77, Objects Affecting Navigable Airspace.	Federal Aviation Administration (FAA) 18	Completion of Notice of Proposed Construction or Alteration (NCPA), FAA Form 7460-1H.
			Advisory Circular No. 70/7460, Obstruction Marking and Lighting.	FAA	Meet FAA standards for marking and lighting of obstructions as identified by FAR Part 77.
			Advisory Circular 70/7460-2I, Proposed Construction or Alteration of Objects that May Affect the Navigable Airspace.	FAA 18	Notify FAA prior to construction, as appropriate.
			14 CFR Part 91 Air Traffic and General Operating and Flight Rules.	FAA 18	Comply with restrictions governing the operation of aircraft, including helicopters.
			49 USC／ 1348, Subdivision (a).	FAA 18	Comply with Secretary of Transportation policy regarding safety of aircraft and utilization of airspace.
			47 CFR／ 15.25, Operating Requirements, Incidental Radiation.	FAA 18	Mitigation for any device that causes communications interference.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.4.3 Transmission Line Safety and Nuisance (Continued)		State	20 CCR, Appendix B, Subdiv. (a), (d) (g) and Subdiv. (a), (h),／／˚1741 through 1744 and／ 1752 Information Requirements for a Non-geothermal Application.	CEC	Compliance with applicable laws for safety and reliability.
			Cal. Pub. Res. Code,／ 25000 et seq., Warren-Alquist Act,／ 25520 Subdivision (g).	CEC	Provide description of transmission line including the right of way.
			General Order 52(GO-52) CPUC, Construction and Operation of Power and Communication Lines.	California Public Utility Commission (CPUC)	Prevent or mitigate inductive interference.
			General Order 95 (GO-95) CPUC, Rules for Overhead Electric Line Construction .	CPUC, CEC	Design and construct line in compliance with GO-95.
			Radio & Television Interference (RI/TVI) Criteria.	CEC	RI/TVI mitigation requirements if applicable.
		Local	Kern County Energy Element.	Kern County Planning 3	Design and construct in compliance with policies.
		Industry	None applicable.	--	--
7.4.4 Pipelines	Section 3.7, Pipelines	Federal	Title 49 CFR, Part 192-Transportaion of Natural and Other Gas by Pipeline	U.S. Department of Transportation (USDOT)	Construction must conform to DOT standards.
		State	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.4.4 Pipelines (Continued)		Local	Standard specifications for Water Distribution Facilities.	Wheeler Ridge-Maricopa Water District 4	Construction must conform to standards and related specifications.
			Standard Subdivision Improvement Agreement and Rule 15. None applicable.	Wheeler Ridge-Maricopa Water District 4	Construction must conform to standards and related specifications.
		Industry	ANSI/AWWA C151/A21.5.	--	Construction must conform to standards and related specifications.
7.5 Environmental Information					
7.5.1 Introduction					
7.5.2 Air Quality	Section 5.2, Air Quality	Federal	Federal Clean Air Act (FCAA), as amended	EPA, Region IX, CARB and SJVUAPCD (as delegated)	Portions of Clean Air Act, codified by the EPA or delegated to state/local agencies as described below.
			40 CFR 52.21	EPA Region IX	Applicant will apply for PSD permit and project will satisfy all PSD permits.
		Federal/Local	40 CFR/ 60 Subpart GG, , SJVUAPCD Rule 4001	SJVUAPCD	Project s controlled emissions will satisfy NSPS for stationary gas turbines. NO_x emissions will be less than NSPS limits. Natural gas will satisfy NSPS fuel requirements for SO_2. Required monitoring plans will be prepared and monitoring will be performed.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.2 Air Quality (Continued)		Federal/Local	FCAA Title V, 40 CFR 70, SJVUAPCD Rule 2520	SJVUAPCD	Applicant will file an application within 12 months after plant startup, as required, and obtain a Permit to Operate.
			FCAA Title IV, 40 CFR 72, 73 and 75.	EPA, Region IX	SO_2 allowances will be acquired by the Applicant. Required monitoring plans will be prepared and emissions will be monitored for acid rain programs.
		State	California Clean Air Act of 1988 (CCAA).	SJVUAPCD with California Air Resources Board (CARB) oversight.	Project will comply with CCAA requirements through compliance with all applicable SJVUAPCD rules.
		Local	SJVUAPCD Rules 2010 and 2201	SJVUAPCD with CARB oversight.	New source permitting requirements will be satisfied via SJVUAPCD s review and issuance of a Determination of Compliance and Certification by CEC. Furthermore, project will apply BACT and emissions will be offset by valid ERCs, as required. Project will not cause or contribute to a violation of state or federal AAQS.
			Cal. Health & Safety Code,／ 4430.	SJVUAPCD with CARB oversight	Future requirement: Applicant will file Air Toxics Hot Spots Information and Assessment, as required, after start of operation.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.2 Air Quality (Continued)		Industry	None applicable	--	--
7.5.3 Geologic Hazards and Resources (addressed in Section 7.3.1 of this table)	Section 5.3, Geologic Hazards and Resources	--	--	--	--
7.5.4 Agriculture and Soils	Section 5.4, Agriculture and Soils	Federal	Federal Water Pollution Control Act of 1972; Clean Water Act of 1977 (including 1987 amendments).	RWQCB; 11 Central Valley Region under the direction of the State Water Resources Control Board. 11	Meet discharge requirements relative to sediment due to accelerated erosion.
			Soil Conservation Service (SCS), National Engineering Handbook (1983), Sections 2 and 3.	USDA Natural Resources Conservation Service (NRCS). 11	Implement standards for the planning, design, and conservation of soil conservation practices.
			Soil Conservation Service (SCS), *National Engineering Handbook* (1983), Sections 2 and 3.	USDA Natural Resources Conservation Service (NRCS). 27 28	Implement standards for the planning, design, and construction of soil conservation practices.
		State	Cal. Pub. Res. Code／ 25523(a); CCR // 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i).	CEC	Submission of information to the CEC concerning potential environmental impacts.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.4 Agriculture and Soils (Continued)			Guidelines for Implementation of CEQA, Appendix G; 14 CCR／ 15000 —15387.	CEC	Evaluate erosion or siltation and conversion of agricultural lands.
			California Porter-Cologne Water Quality Control Act of 1972; Cal. Water Code,／ 13260 - 13269; 23 CCR Chapter 9.	CEC, the RWQCB Central Valley Region and the State Water Resources Control Board 11	Adequate protection of water quality by appropriate design, sizing and construction of erosion and sediment controls; obtain waste discharge requirements concerning potential surface water pollution from project area runoff.
			Williamson Act.	Department of Conservation, Office of Land Conservation.	Project will affect policy of lands under Williamson Act contracts. Refer to Section 5.9, Land Use for further information
		Local	Kern County General Plan — Conservation Element, 1988.	Kern County Planning & Development Services	Comply with General Plan.
			Kern County Hydrology Manual.	Kern County	Design drainage system to meet criteria.
			Kern County Code of Building Regulation Grading Ordinance.	Kern County Resource Management Agency Flood Division. 26	Comply with grading code chapter 17.28.
		Industry	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources	Section 5.5, Water Resources, AFC Section 3.4.8.5.4 Stormwater Drainage	Federal	Clean Water Act/ 402, 33 USC/ 1342; 40 CFR Parts 122 - 136.	RWQCB Central Valley Region, and the EPA, Region IX 11	NPDES permit for construction activity stormwater permit and general permit for dewatering. Stormwater discharges during construction and operation of facility. In California, Clean Water Act point source discharges delegated to RWQCB.
	Section 5.5 Water Resources Section 3.4.8.5 Wastewater Treatment and Discharge, Page 3.4.17 3.11.6 Alternate Wastewater Disposal Method, Page 3.11-11 3.11.6.2 Disposal Via Injection into Abandoned Wells Page 3.11-12		40 CFR Parts 136-149 Underground Injection Control Program	EPA, Region IX 31 State of CA Division of Oil & Gas	Wastewater discharged to ground injection wells must comply with permit requirements. Integrity of well casings and ability of formation to accept discharge. Class I Injection Well Permit Underground Injection Control Permit under Safe Drinking Water Act Sections 1422, 40 CFR 144 Submit permit application under EPA Form 7520-6.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources (Continued)	Section 3.4.8.5 Wastewater Treatment and Discharge Section 3.4.8.5.1 Treatment and Disposition of Liquid Process Wastes Table 3.4.9.2, Page 3.4-42		Clean Water Act／ 311; 33 USC／ 1321; 40 CFR Parts 110, 112, 116, 117.	EPA, Region IX; RWQCB Central Valley Region, and the California Office of Emergency Services (OES).	Reporting of any prohibited discharge of oil or hazardous substance.
			California Porter-Cologne Water Quality Control Act of 1972; Cal. Water Code,／ 13000-14957. Division 7. Water Quality.	CEC, the RWQCB-Central Valley Region and the State Water Resources Control Board.	Siting, operation and closure of waste disposal requires submission of waste and site classification for waste discharge permit. Title 23, California Code of Regulations, Chapter 15, Division 3
					Require RWQCB to issue waste discharge requirements which specifies conditions regarding construction, operation, monitoring and closure of water disposal site, including injection wells for waste disposal.
					In this case PEA will be permitting injection wells and waste discharge requirement is not required.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources (Continued)					Section 13552.6 of Water Code, identifies use of potable domestic water for cooling towers. Must confirm that suitable recycled water is not available in quality and quantity.
					Section 13552.8 - Use of recycled water in cooling towers.
	Section 3.7.2 Section 3.7.3 Section 3.7.3.3 Section 3.8.3.2	State	Clean Water Act 401 Water Quality Certification	RWQCB Central Valley	Require State Certification that federal permits allowing discharge of dredged or fill material into waters of United States will not violate federal and state quality standards. For PEF, linear facilities cross drainage which may be considered waters of United States. The Central Valley RWQCB will issue 401 certification.
			Clean Water Act/ 404; Clean Water Act Regulatory Programs; Final Rule 33 CFR Parts 323 and 328. Nationwide Permit Program Regulations and Issue, Reissue, and Modify Nationwide Permits; Final Rule 33 CFR part 330.	US Army Corps of Engineers. 17	Obtain NWP 12 for Utility Line Backfill and Bedding.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources (Continued)		Federal Local	40 CFR Part 260, Appendix I EPA SW-846 Paint-Filter Test	EPA Region 9 31 RWQCB- Central Valley 20A	a) If zero liquid wastewater discharge system is selected technology a waste extraction test results of residual cake solids from zero discharge system. b) Wastewater sludges from California Aqueduct will be tested by SW-846 test method for evaluation of solid waste, physical/chemical methods EPA Publication SW-846. Wastes will be disposed onsite or taken to Class III, non-hazardous waste landfills.
		State	California Constitution, Article 10/2.	State Water Resources Control Board	Avoid the waste or unreasonable uses of water. Regulates methods of use and methods of diversion of water.
	Section 3.4.8 Water Supply and Treatment Section 3.4.8.1-3.4.8.3 Water Balance and Supply		State Water Resources Control Board, Resolution 75 - 58 (June 18, 1975).	State Water Resources Control Board and the CEC	Comply with policy on the use and disposal of inland water used for power plant cooling.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources (Continued)					Specific siting of energy facilities on Use and Disposal of Inland Water used for Power Plant Cooling (June 19, 1976 by resolution 75-58).
					This policy states that use of fresh inland water should be used for Power Plant cooling if other sources or methods of cooling would be environmentally undesirable or economically unsound. SWRCB policy requires that power plant cooling should in order of priority come from wastewater being discharged to ocean, ocean water, brackish water from natural sources or irrigation return flow inland wastewaters of low total dissolved solids, and other inland waters. Also addresses cooling water discharge prohibitions.
			California Water Code// 13271 — 13272; 23 CCR// 2250 - 2260.	RWQCB Central Valley Region, and the California Office of Emergency Services 20A	Reporting of releases of reportable quantities of hazardous substances or sewage and releases of specified quantities of oil or petroleum products.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.5 Water Resources (Continued)			California Public Resources Code/ 25523(a); 20 CCR// 1752, 1752.5, 2300 - 2309, and Chapter 2 Subchapter 5, Article 1, Appendix B, Part (1).	CEC	Requires information concerning proposed water resources and water quality protection.
		State		Department of Health 32	Approval of onsite domestic water treatment package for use as a Public Water System.
			Kern County General Plan.	Kern County Building Inspection Division 1	Proposed development (i.e., leach field) must be in accordance with specific standards.
		Local	District Standard Specifications for Water Distribution Facilities.	Wheeler Ridge-Maricopa Water Storage District	Project installations should be constructed in compliance with District requirements.
			Floodplain Management Plan		Requirements should be met in regards to building in the floodplain.
		Industry	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.6 Biological Resources	Section 5.6, Biological Resources	Federal	Endangered Species Act of 1973; 16 USC/ 1531 et seq.; 50 CFR Parts 17 and 222.	US Fish and Wildlife Service (USFWS) 6	Protection and management of federally-listed threatened or endangered plants and animals and their designated critical habitats (terrestrial and avian species). Section 7 Endangered Species Act consultation with USFWS (or Section 10A).
			National Environmental Policy Act; 42 SC/ 4321 et seq.	USFWS 6	Analysis of impacts of Federal action.
			Migratory Bird Treaty Act; 16 USC // 703 - 711; 50 CFR Subchapter B.	USFWS 6	Protection of migratory birds.
			Fish and Wildlife Coordination Act; 16 USC// 661 - 666.	USFWS 6	Conservation of fish and wildlife.
			Clean Water Act of 1977; 33 USC/ 1251 —1376, 30 CFR/ 330.5(a)(26).	COE	Protection of wetlands.
		State	California Endangered Species Act of 1984; California Fish & Game Code // 2050 - 2098.	California Department of Fish and Game (CDFG) 8	Consultation requirement.
			Native Plant Protection Act of 1977.	CDFG 8	Rare and endangered plant protection.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.6 Biological Resources (Continued)			California Species Preservation Act of 1970; California Fish & Game Code // 900-903.	CDFG 8	Protection and enhancement of the birds, mammals, fish, amphibians and reptiles of California.
			California Fish & Game Code/ 3503.	CDFG 8	No taking or possessing of the nests or eggs of birds.
			California Fish & Game Code/ 3511 and/ 5050.	CDFG 8	No taking of birds, reptiles, or amphibians listed as fully protected.
			California Fish & Game Code/ 1603.	CDFG 16	CDFG review of a proposal to affect any stream bed change. Streambed Alteration Agreement to be filed during CEC licensing process.
			California Fish & Game Code/ 1930-1933.	CDFG Natural Heritage Division	Significant Natural Areas Program (SNAP) database of natural resources.
			California Environmental Quality Act; California Public Resources Code/ 21000 et seq.	CEC	Protection of environment.
			California Public Resources Code/ 25523(a); 20 CCR// 1752, 1752.5, 2300 —2309, and Chapter 2, Subchapter 5, Article I, Appendix B, Part (i).	CEC with comment by the CDFG	Inclusion of requirements in the CEC s decision on an AFC to assure protection of environmental quality considered to have a significant effect on listed species.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.6 Biological Resources (Continued)		Local	Land Use, Open Space, and Conservation Element of Kern County General Plan.	Kern County Planning and Development Services 3	Ensure that proposed development projects demonstrate a high degree of compatibility with any threatened or endangered species habitat they may effect.
		Industry	None applicable.	--	--
7.5.7 Cultural Resources (addressed in Section 7.5.8 below)					
7.5.8 Cultural and Paleontological Resources	Section 5.7, Cultural Resources; Section 5.8, Paleontology	Federal	NEPA; 42 USC 4321 - 4327; 40 CFR / 1502.25.	Lead Federal Agency	Analysis of potential environmental impacts on federal lands.
			1978 Memorandum from the Associate Director of the US BLM	Lead Federal Agency	Implement significance criteria for paleontological resources.
			Federal Antiquities Act of 1906: 16 USC 432, 433	Lead Federal Agency	Basic legislation for preservation of cultural properties on Federal lands.
			Executive Order 11593	Lead Federal Agency	Directs Federal agencies to inventory, nominate properties to the NRHP and protect cultural resources
			Archaeological and Historic Preservation Act of 1976 (16 USC 469)	Secretary of the Interior and Lead Federal Agency	Provides for coordination with the Secretary when a Federally licensed undertaking may cause irreparable damage to significant cultural resources.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.8 Cultural and Paleontological Resources (Continued)			Archaeological Resources Protection Act of 1979 16 USC 470a et. seq.	Secretary of the Interior and Lead Federal Agency	Provides for felony-level penalties for destruction, damage or removal of cultural resources on Federal lands.
			American Indian Religious Freedom Act of 1979 (42 USC 1996).	Lead Federal Agency	Establishes US Government policy to protect and preserve traditional religious beliefs and practices.
			Native American Graves Protection and Repatriation Act of 1990 (25 USC 3001).	Lead Federal Agency	Establishes mechanism for right of Indian tribes to claim ownership of human remains and certain cultural items.
			Secretary of the Interior s Standards and Guidelines, September 29, 1983.	Secretary of the Interior and Lead Federal Agency	Establishes standards for the gathering and treatment of data related to cultural resources.
		State	California Environmental Quality Act (CEQA) Section 15064.5; California Public Resources Code ⁄5024, 5024.5, and 21083.2; Title 14, CCR⁄15126.	CEC	Formal findings by the lead state agency regarding project-related effects to important cultural resources and unique paleontological resources.
			Cal. Pub. Res. Code⁄⁄ 25523(A), 25527; 20 CCR⁄⁄ 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Article 1, Appendix B, Part (i).	CEC	Special consideration of unique historical, archaeological and cultural sites.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.8 Cultural and Paleontological Resources (Continued)			Cal. Health & Safety Code／˚7050.5.	County Coroner (Medical Examiner). 25	Determination of origin of human remains and coordination with NAHC.
			Cal. Pub. Res. Code／ 5024.1.	State Historical Resources Commission	Establishes the California Register of Historical Resources and procedures for nominating sites to the Register.
			Cal. Pub. Res. Code／ 5097.5.	Kern County Planning Department. 3	Prevent unauthorized removal of archaeological resources or paleontological remains on public lands.
			Cal. Pub. Res. Code／ 5097.94 and 5097.98. 21	Native American Heritage Commission (NAHC). 21	
		Local	Kern County General Plan: General Provisions (Kern County 1994). 24	Kern County Planning Department. 3	These provisions require maintenance of the County s inventory of areas of potential cultural and archaeological significance.
		Industry	None applicable.	--	
7.5.9 Land Use	Section 5.9, Land Use. AFC Subsections 5.9.2.2.3, 5.9.2.2.4, 5.9.2.3.2, 5.9.2.4.2, 5.9.2.5.2	Federal	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.9 Land Use (Continued)		State	Cal. Pub. Res. Code／ 25523(a); 20 CCR／／ 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Appendix B, Part (i)(3) and (4).	CEC	Evaluate compatibility of the proposed project with relevant land use plans.
	5.9.2.3.2		Encroachment Permit Guidelines: Guidelines for Overhead Electrical and Telephone Encroachments.	California Department of Water Resources 14	Obtain rights of way permits, and will be subject to clearance requirements and comply with tower/pole location restrictions and other requirements.
	5.9.2.2.4		Williamson Act.	Department of Conservation, Office of Land Conservation 28	Project will require cancellation of Williamson Act contract for 30-acre plant site.
	5.9.2.2.4, 5.9.2.3.2, 5.9.2.4.2, 5.9.2.5.2	Local	Kern County Zoning Ordinance.	Kern County Planning and Development Services. 3	Compliance with goals and policies, and specific zoning requirements.
			Kern County General Plan.	Kern County Planning and Development Services.	Comply with land use provisions.
		Industry	None applicable.	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.10 Socioeconomics	Section 5.10, Socioeconomics AFC Subsections 5.10.2.2	Federal	Executive Order 12898 (Environmental Justice).	EPA for Executive Branch.	Agencies must develop strategies to focus on environmental conditions and human health in minority communities and low income populations. Project will have no minority-based or income-based environmental justice issues.
	5.10.2.5	State	Cal. Gov. Code// 53080, 65995 — 65997.	Kern County 3	Provisions for school impact fees for projects near school districts.
	5.10.1, 5.10.2		Cal. Pub. Res. Code/ 25523(a); 20 CCR// 1752, 1752.5, 2300 - 2309, and Chapter 2, Subchapter 5, Appendix B, Part (i); 14 CCR/ 15131.	CEC	Inclusion of economic or social effects analysis in AFC.
		Local	None applicable.	--	--
		Industry	None applicable.	--	--
7.5.11 Traffic and Transportation	Section 5.11, Traffic and Transportation AFC Subsections 5.11.2.2.1, 5.11.2.2.2, 5.11.2.3.1, 5.11.2.4.1	Federal	49 CFR, Chapter II, Subchapter C; and Chapter III, Subchapter B.	Federal Department of Transportation and California Department of Transportation (CalTrans)	Meet standards for the transportation of hazardous materials.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.11 Traffic and Transportation (Continued)	5.11.2.2.1	State	Cal. Vehicle Code,/ 35780; Cal. Streets & Highways Code// 660-711; 21 CCR// 1411.1-1411.6.	CalTrans 15,	Transportation permits will be obtained for overloads.
	5.11.2.3		Cal. Streets and Highways Code// 117, 660-711.	CalTrans	Encroachment permits.
	5.11.2.2.1, 5.11.2.2.2, 5.11.2.3.1, 5.11.2.4.1		Cal. Vehicle Code/ 31300 et seq.	CalTrans	Transportation of hazardous materials on state highways.
	5.11.1, 5.11.2	Local	Kern County General Plan, Transportation and Circulation Element.	Kern County Planning Department. 3 Kern County 3	Compliance with goals and policies for County transportation and traffic systems. Encroachment permits
		Industry	None applicable.	--	--
7.5.12 Noise	Section 5.12, Noise	Federal	EPA 1974 Noise Guidelines	--	Guidance level.
			Occupational Safety and Health Act of 1970 (OSHA), (29 CRF/ 1919 et seq.).	Fed/OSHA	Comply with worker noise exposure levels.
			Noise Control Act of 1972 as amended by the Quiet Communities Act (1978); (42 USC 4901 —4918).	--	Guidance level.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.12 Noise (Continued)		State	Cal/OSHA Occupational Noise Exposure Regulations (8 CCR, General Industrial Safety Orders, Article 105, Control of Noise Exposure,／ 5095, et seq.)	Cal/OSHA	Comply with worker noise exposure standards.
			Cal. Noise Control Act of 1973 (Cal. Health and Safety Code, Division 28).	--	Comply with local noise ordinances.
		Local	Kern County General Plan - Noise Element, 1989.	Kern County Planning and Development Services. 3	Comply with local noise ordinances.
		Industry	None applicable	--	--
7.5.13 Visual Resources	Section 5.13, Visual Resources	Federal	None applicable.	--	--
		State	None applicable.	--	--
		Local	Kern County General Plan, Land Use, Open Space, and Conservation Element (Chapter 19.86, Kern County Zoning Code).	Kern County Planning and Development Services Department 3	Requires public notification and review of any project that might adversely impact visual resources. Requires preparation of a Landscape Plan (see Mitigation Measure VIS-3).
		Industry	None applicable.	--	--
7.5.14 Waste Management (addressed in Section 7.5.15 below)			--	--	--

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.15 Hazardous Materials and Waste Management	Section 5.14, Waste Management and Section 5.15, Hazardous Materials	Federal	RCRA; 42 USC／ 6901 et seq.; 40 CFR Parts 260 - 272.	EPA, Region IX and Cal-EPA, Department of Toxic Substances Control (DTSC)	Management of hazardous wastes.
			CERCLA (Superfund), 42 USC 9601 et seq. as amended by SARA, Emergency Planning and Community Right-to-Know Act of 1986 (SARA Title III), 42 USC／ 11001 et seq; 40 CFR Parts 350, 355 and 370.	EPA, Region IX, National Response Center, and Kern County Environmental Health Department	CERCLA -- release notification requirements; SARA Title III -- reporting requirements for storage, handling, or production of significant quantities of hazardous or acutely toxic substances.
			29 USC／ 651, 29 CFR／ 1910 et seq. and／ 1926 et seq.	FED/OSHA	Meet requirements for equipment used to store and handle hazardous materials necessary to protect workers.
			49 CFR, Parts 172, 173, and 179.	California Highway Patrol (CHP) and Federal Department of Transportation	Meet standards for labels, placards, and markings on hazardous waste shipments.
		State	California Porter-Cologne Water Quality Control Act; Cal. Water Code ／ 13260 - 13269; 23 CCR／ 2510 Article 9 et seq.	RWQCB, Central Valley Region; and the State Water Resources Control Board	Waste discharge requirements -- address any storage or disposal of solid and liquid wastes by the project.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.15 Hazardous Materials and Waste Management (Continued)			Hazardous Waste Control Act of 1972, as amended; Cal. Health & Safety Code/ 25100 et seq.; 22 CCR / 66001 et seq.	EPA, Region IX; the DTSC; 20 Kern County Environmental Health Department	Meet requirements for the management of hazardous wastes.
			8 CCR/ 339,/ 3200 et seq., 5139 et seq., and 5160 et seq.	Cal/OSHA	Address control of hazardous substances.
			Cal. Pub. Res. Code/ 25523(a); 20 CCR// 1752, 1752.5, 2300 - 2309, and Division 2, Chapter 5, Article 1, Appendix B, Parts (i).	CEC	Health Risk Assessment Guidelines.
			Cal. Health & Safety Code// 25500 —25541. 19 CCR/ 2720-2734.	Kern County Environmental Health Department	Prepare a Hazardous Materials Business Plan (HMBP).
			California Accidental Release Program (CalARP), Cal. Health & Safety Code/ 25531 et seq.	Kern County Environmental Health Department	California s version of the Risk Management Program (Clean Air Act, Title III, Section 112 (r) - 42 USC Part 7412.
			Cal. Health & Safety Code/ 44300 et seq.	SJVUAPCD	Air Toxics Emissions Inventory.
			Uniform Fire Code, Article 80 and others.	Kern County Fire Department	Provisions regarding fire protection and neutralization systems for emergency venting compressed gases.

EXHIBIT 1 - TABLE 7.0-1

PASTORIA ENERGY FACILITY
SUMMARY OF LORS AND COMPLIANCE

LORS Section	AFC Section	Jurisdiction	Authority	Administering Agency	Requirements/Compliance
7.5.15 Hazardous Materials and Waste Management (Continued)		Local	Kern County Zoning Ordinance, Development Standards／ 19.80.030.	Kern County Engineering and Design Services Department and Kern County Fire Department	Comply with safety setbacks as required by the Kern County Fire Department.
		Industry	AICHE - Center for Chemical Process Safety, 1985 Guidelines.	OES	Chemical Hazard Evaluation Procedures.

ADMINISTERING AGENCY CONTACTS

FEDERAL

18 Federal Aviation Administration
Karen McDonald
(310) 725-6557

17 US Army Corps of Engineers
Tom Cavanaugh
(916) 557-5250

31 US Environmental Protection Agency
Waste Management Division
John McCarroll
75 Hawthorne Street
San Francisco, California 94105
(415) 744-2064

6 US Fish and Wildlife Services
Peter Cross, Supervisory Fish and Wildlife Biologist
3310 El Camino Avenue, Suite 130
Sacramento, California 95821-6340
(916) 414-6600

27 USDA Natural Resources Conservation Services
Raul Ramirez
Bakersfield
(661) 861-4129, Ext. 3

STATE

28 California Department of Conservation
Luree Stetson
Acting Chief, Division of Land Resource Protection
Sacramento
(916) 324-0850

16 California Department of Fish and Game
Ed Armstrong, Streambed Programs
(559) 243-4014

8 California Department of Fish and Game, Region 4
Dale Mitchell
1234 Shaw Avenue
Fresno, California 93710
(559) 243-4014

20 California Department of Toxic Substances Control
Jan Radimsky
(916) 323-6042

14 California Department of Water Resources
Connie Anderson
(916) 653-6957

21 California Native American Heritage Commission

Gloria McNulty
(916) 653-4082

20A California Regional Water Quality Control Board, Central Valley Region
Joanne Kipps
(559) 445-5116

32 Department of Health
Rich Haberman or Betsy Lichi
(559) 447-3300

11 California Regional Water Quality Control Board, Region 5
Lonnie Wass, Sr. Engineer, Stormwater Unit
3614 East Ashland Avenue
Fresno, California 93726
(559) 445-5455

15 CalTrans
Floyd Little
(559) 488-4126

David Berggen
California Department of Transportation
1352 West Olive Avenue
Fresno, California 93778
(559) 488-7397

22 CalTrans South Region
Cliff Brown
(909) 388 7710

REGIONAL

5 San Joaquin Valley Unified APCD
Bakersfield
Tom Goff, Permit Services Manager

(661) 326-6900

LOCAL

1 Kern County Building Inspection Division
Engineering Survey Services
Robert Sawyer
(661) 862-8650

25 Kern County Coroner
Jim Malouf, Chief Deputy Coroner
(661) 861-2606

26 Kern County Resource Management Agency
Flood Division
Warren Maxwell
(661) 862-8800

10 Kern County Environmental Health
Department
Lydia Von Sydow
(661) 862-8700

2 Kern County Fire Department
Captain Bill Parker
Assistant Fire Marshall
Chuck Dickson
(661) 326-1626

3 Kern County Planning Department
Jake Sweeney, Planner
2700 M Street, Ste. 100
Bakersfield, California 93301
(661) 862-8624

Kern County
Becki Schmidt, Planner
Encroachment Permits
2700 M Street, Ste. 100
Bakersfield, California 93301
(661) 862-8877

4 Wheeler Ridge - Maricopa Water District
Bill Taube
(661) 765-4271

PASTORIA
POWER PROJECT

Appendix B

Proof of Service List

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	)	**Docket No. 99-AFC-7**
	)	
Application for Certification for the Pastoria Energy Facility (PEF) (Enron North America Corp.)	)	**PROOF OF SERVICE**
_____	)	

I, _____ , declare that on _____I deposited copies of the attached document in the United States mail at **Sacramento, California** with first class postage thereon fully prepaid and addressed to the following:

DOCKET UNIT

Send the original signed document plus the required 12 copies to the address below:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
Attn: Docket No. 99-AFC-7
1516 Ninth Street
Sacramento, CA 95814-5512

* * * *

In addition to the documents sent to the Commission Docket Unit, also send individual copies of any documents to:

APPLICANT

Sam Wehn, Program Director
Pastoria Energy Facility
Enron Corporation
101 California Street, Suite 1950
San Francisco, CA 94111

Jennifer Scholl
URS Greiner Woodward Clyde
130 Robin Hill Road
Santa Barbara, CA 93117

Joe Patch
Patch, Inc.
1261 Travis Boulevard, Suite 250
Fairfield, CA 94533

Counsel for Applicant:

Allan J. Thompson, Esq.
21 C Orinda Way, #314
Orinda, CA 94563

INTERESTED AGENCIES

Joe O Bannon
San Joaquin Valley Unified APCD
2700 M Street
Bakersfield, CA 93301

Peter Cross
US Fish & Wildlife Service

Endangered Species Office
2800 Cottage Way
Sacramento, CA 95825

Donna Daniels
CA Dept. Fish & Game
1234 E. Shaw Avenue
Fresno, CA 93710

Catalin Micsa
CA Independent System Operator
151 Blue Ravine Road
Folsom, CA 95630

Bill Taube
Wheeler Ridge-Maricopa Water
Storage District
PO Box 9429
Bakersfield, CA 93389-9429

INTERVENORS

Larry Allen, Planning Manager
SLO County Air Pollution Control District
3433 Roberto Court
San Luis Obispo, CA 93401

Ray Biering, Esq., District Counsel
Office of the County Counsel
County Government Center, Room 386
San Luis Obispo, CA 93408

Kern Kaweah Chapter of Sierra Club
Att: Arthur Unger
2815 La Cresta Drive
Bakersfield, CA 93305

Kern Audubon Society
Att: Mary J. Griffin
1604 Duke Drive
Bakersfield, CA 93305-1622

LIMITED PURPOSE INTERVENORS

Mervyn Soares
Texaco Power and Gasification
Sunrise Cogeneration & Power Co.
PO Box 81438
Bakersfield, CA 93380-1438

Grattan & Galati
Att: John Grattan, Esq.
801 K Street, Penthouse Suite
Sacramento, CA 95814

Marc D. Joseph, Esq.
Adams Broadwell Joseph & Cardozo
Attorneys for CURE
651 Gateway Boulevard, Suite 900
South San Francisco, CA 94080

I declare under penalty of perjury that the foregoing is true and correct.

_____
[signature]

* * * *

INTERNAL DISTRIBUTION LIST

FOR YOUR INFORMATION ONLY! Parties **DO NOT** mail to the following individuals. The Energy Commission Docket Unit will internally distribute documents filed in this case to the following:

ROBERT A. LAURIE, Commissioner
Presiding Committee Member
MS-31

MICHAL C. MOORE, Ph.D.,
Commissioner
Associate Committee Member
MS-34

Susan Gefter
Hearing Officer
MS-9

Kae Lewis
Project Manager
MS-15

Dick Ratliff
Staff Counsel
MS-14

PUBLIC ADVISER

Roberta Mendonca
Public Adviser s Office
1516 Ninth Street, MS-12
Sacramento, CA 95814

PASTORIA
POWER PROJECT

Appendix C

Exhibit List

STATE OF CALIFORNIA

Energy Resources Conservation and Development Commission

In the Matter of:	)	
	)	
Application for Certification	)	**Docket No. 99-AFC-7**
for the Pastoria Energy Facility	)	
(Enron North America Corp.)	)	
_____	)	

EXHIBIT LIST

EXHIBIT 1: Application for Certification for the Pastoria Energy Facility Volumes I and II, dated 1999. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 2: Phase I Environmental Site Assessment for the Pastoria Power Project, dated April 1999. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 3: Regional Haze Analysis contained in letter to USEPA, Region IX from URS Greiner Woodward Clyde, dated December 22, 1999. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 4: Southern California Edison Company, Substation Single Line Diagram, dated December 31, 1999. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 5: Southern California Edison Company System Impact Study, dated December 22, 1999. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 6: Applicant s responses to Staff data requests of December 29, 1999, dated January 5, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 7: Applicant s Appendix L to AFC, Geotechnical Report, dated January 5, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 8: Applicant s errata sheets for Section 5.2 of AFC Air Quality. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 9: Maps submitted in response to Staff data request on 3/13/00. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 10: Response to Staff Data Requests, filed 3/20/00. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 11: Applicant s confidential cultural resource test plan, dated March 29, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 12: Applicant s Cultural Resources Map J1.0-2, as modified, dated April 3, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 13: Applicant s responses to Staff data requests of March 20, dated April 3, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 14: Applicant s working draft of the Habitat Conservation Plan, dated March 31, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 15: Applicant s Response to Staff data requests of March 20,2000, dated April 7, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 16: Applicant s response to Staff data request SW-6, dated April 19, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 17: Applicant s responses to Staff data requests 27 and 38-42, dated May 15, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 18: Applicant s ERCs purchased from AERA, Memorandum of Option between Applicant and Tejon Ranchcorp, and Amendment 1 to Facilities Study Agreement between Southern California Edison Company and Applicant; filed May 15, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 19: Preliminary Determination of Compliance, issued by San Joaquin Valley Air Pollution Control District, dated May 16, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 20: Applicant s Water Supply Plan, dated May 16, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 21: Electronic copy of applicant s response to data requests of March 13, 2000, submitted by applicant on May 12, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 22: Applicant s final Results Cultural Resources Testing, dated May 31, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 23: Applicant s Water Supply Plan, dated May 25, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 24: Applicant s Water Supply Plan Supplement, dated June 12, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 25: Applicant s Response to CEC Data Requests dated May 31, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 26: Applicant Water Supply Plan documents: Letter agreement with Rosedale/Rio Bravo Water District, Resolution from Kern County Water Agency, Initial Study for Pioneer, and Initial Study and Proposed Negative Declaration for the Pioneer Groundwater Recharge and Recovery Project, dated June 16, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 27: Applicant s Comments to the SJVAPCD Preliminary Determination of Compliance, dated June 6, 2000. Sponsored by Applicant; received into evidence on September 18, 2000.

EXHIBIT 28: Applicant s Water Supply Plan documents: Monterey Agreement, Memorandum of Understanding Regarding Operation and Monitoring of the Kern Water Bank Groundwater Banking Program, Resolution Making Findings and Adopting Mitigation Measures Pursuant to CEQA. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 29: SJVAPCD Final Determination of Compliance, submitted on September 5, 2000. Sponsored by Staff; received into evidence on September 19, 2000.

EXHIBIT 30: Biological Assessment filed with USEPA, submitted on September 5, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 31: Preliminary Staff Assessment, dated July 14, 2000. Sponsored by Staff, received into evidence on September 19, 2000.

EXHIBIT 32: SJVAPCD letter to EPA dated July 31, 2000 re comments on PDOC. Sponsored by Staff; received into evidence on September 19, 2000.

EXHIBIT 33: SJVAPCD letter to CARB dated July 26, 2000 re comments on PDOC. Sponsored by Staff; received into evidence on September 19, 2000.

EXHIBIT 34: SJVAPCD letter to CEC dated July 26, 2000 re comments on PDOC. Sponsored by Staff; received into evidence on September 19, 2000.

EXHIBIT 35: Final Staff Assessment, dated September 1, 2000. Sponsored by Staff, received into evidence on September 19, 2000.

EXHIBIT 36: Staff s Supplemental Testimony, dated September 8, 2000. Sponsored by Staff, received into evidence on September 19, 2000.

EXHIBIT 37: Testimony of Catalin Micsa for California Independent System Operator (Cal-ISO) on Transmission System Reliability, dated September 7, 2000. Sponsored by Staff, received into evidence on September 18, 2000.

EHXIBIT 38: Applicant s Testimony, Exhibits, and Resumes, dated September 8, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 39: Letter from San Luis Obispo County Air Pollution Control District to Robert Laurie, dated September 11, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 40: Letter from U.S. Army Corps of Engineers to Sam Wehn, dated August 30, 2000. Sponsored by Applicant; received into evidence on September 19, 2000.

EXHIBIT 41: Kern County Planning Department Staff Report on Williamson Act Cancellation, dated August 24, 2000. Addendum, dated September 14, 2000. Submitted by Applicant, received into evidence on September 19, 2000.

EXHIBIT 42: Letter from Arthur Unger to Energy Commission and attached articles, dated September 6, 2000. Submitted by Intervenor Kern-Kaweah Chapter of Sierra Club, received into evidence on September 19, 2000.

EXHIBIT 43: Letter from the Building Trades Council of Kern, Inyo, and Mono Counties of California, AFL-CIO, Doug Zimmerman, to Kae Lewis, CEC Project Manager, regarding Craft Labor Support for the Pastoria Energy Project. Submitted by Applicant; received into evidence on September 18, 2000.

EXHIBIT 44: Four (4) page engineering diagram Preliminary Process Flow Diagram for Raw and Domestic Storage. Submitted by Applicant; received into evidence on September 18, 2000.

EXHIBIT 45: E-mail from Jennifer Scholl to Mary Griffin with Brian Hatoff s memo attached re summary of final results on Cultural Resources testimony dated September 17, 2000. Submitted by Applicant; received into evidence on September 18, 2000.

EXHIBIT 46: Picture of basket made by Kitanemuk Tribe postcard from Loewe Museum of Anthropology at the University of California, Berkeley. Submitted by Intervenor Kern-Keweah Sierra Club; received into evidence on September 18, 2000.

EXHIBIT 47: E-mail to Mark Hesters from Catalin Micsa re Transmission System Engineering Condition 1h, dated September 12, 2000. Submitted by Staff; received into evidence on September 18, 2000.

EXHIBIT 48: November 1982 approved project Rancho El Tejon in the Kern County General Plan Revision, submitted by Intervenor Audubon Society; received into evidence on September 19, 2000.

EXHIBIT 49: Planning Map of Petrol Plaza on Laval Road and Tejon Industrial Complex site, dated in late 1999. Submitted by Intervenor Audubon Society; received into evidence on September 19, 2000.

EXHIBIT 50: Map of San Emidio New Town Project, 1992, submitted by Intervenor Audubon Society; received into evidence on September 19, 2000.

EXHIBIT 51: Landscape Concept Plan Grapevine Center, based on 1982 Environmental Impact Report. Submitted by Intervenor Audubon Society; received into evidence on September 19, 2000.

EXHIBIT 52: Draft Conditions of Approval for Parcel Map No. 10694. Submitted by Applicant; received into evidence on September 19, 2000.

EXHIBIT 53: Addendum to the Kern County Planning Commission Board of Supervisors Staff Report dated September 19, 2000. Submitted by Staff; received into evidence on September 19, 2000.

EXHIBIT 54: Letter to Sam Wehn from the Department of Fish and Game, dated August 16, 2000, and a letter from the California Regional Water Quality Control Board Central Valley Region to Ann Knowlton, dated August 29, 2000. Submitted by Applicant; received into evidence on September 19, 2000.

EXHIBIT 55: Letter from Pastoria Energy Facility dated September 12, 2000, regarding Clarification of Endangered Species Act Compliance. Submitted by Applicant; received into evidence on September 19, 2000.

EXHIBIT 56: Map of area of buffer zone of 37.7 acres from Patch, Inc. Submitted by Applicant; received into evidence on September 19, 2000.

EXHIBIT 57: E-mail from Ed Pike, Environmental Protection Agency, to Magdy Badr, dated September 13, 2000. Submitted by Staff; received into evidence on September 19, 2000.

EXHIBIT 58: Letter from Kern County Planning Department to Enron North America and Wilson and Associates regarding Notice of Approval of Tentative Parcel Map, No. 10694 and Zone Variance, dated September 18, 2000. Submitted by Applicant, received into evidence on September 19, 2000.

EXHIBIT 59: Final approval by County on the Williamson Act cancellation. Submitted by the Applicant; received into evidence on October 5, 2000.

EXHIBIT 60: Cultural Resources material and interpretation of historical ethnographic data provided by Ms. D. Dominguez, docketed on October 5, 2000. Submitted by Applicant; received into evidence on October 5, 2000.

EXHIBIT 61: Letter dated September 12, 2000, from URS Corporation to Pam Schultz, U.S. Environmental Protection Agency. Docketed on October 5, 2000. Sponsored by Applicant; received into evidence on October 5, 2000.

EXHIBIT 62: Letter from the U.S. Environmental Protection Agency, to the San Joaquin Valley Endangered Species Division on the U.S. Fish and Wildlife Service, dated October 5, 2000. Sponsored by the Applicant; received into evidence on October 5, 2000.

EXHIBIT 63: Filing of Southern California Edison Company Facilities Study, dated October 31, 2000, docketed November 7, 2000. Sponsored by Applicant; received into evidence on November 7, 2000.

PASTORIA
POWER PROJECT

Appendix D

Glossary of Terms and Acronyms

GLOSSARY OF TERMS AND ACRONYMS

	A
A	Ampere
AAL	all aluminum (electricity conductor)
AAQS	Ambient Air Quality Standards
ABAG	Association of Bay Area Governments
AC	alternating current
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
AFC	Application for Certification
AFY	acre-feet per year
AHM	Acutely Hazardous Materials
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARCO	Atlantic Richfield Company
ASAE	American Society of Architectural Engineers
ASHRAE	American Society of Heating Refrigeration & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
	B
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAF	Basic American Foods
BARCT	Best Available Retrofit Control Technology
bbl	barrel
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
Bcfd	billion cubic feet per day
b/d	barrels per day
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
Btu	British thermal unit
	C
CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CCAA	California Clean Air Act
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEM	continuous emissions monitoring
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFB	circulating fluidized bed
CFCs	chloro-fluorocarbons
cfm	cubic feet per minute

CFR	Code of Federal Regulations
cfs	cubic feet per second
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
COI	California Oregon Intertie
CPCN	Certificate of Public Convenience & Necessity
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CT	combustion turbine current transformer
CTG	combustion turbine generator
CURE	California Unions for Reliable Energy
	D
dB	decibel
dB(A)	decibel on the A scale
DC	direct current
DCTL	Double Circuit Transmission Line
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DISCO	Distribution Company
DOC	Determination of Compliance
DOE	U.S. Department of Energy
DSM	demand side management
DTC	Desert Tortoise Council
DWR	California Department of Water Resources
	E
EDF	Environmental Defense Fund
Edison	Southern California Edison Company
EDR	Energy Development Report
EFS&EPD	Energy Facilities Siting and Environmental Protection Division
EIA	U.S. Energy Information Agency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELFIN	Electric Utility Financial and Production Simulation Model
EMF	electric and magnetic fields
EOR	East of River (Colorado River)
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ER	Electricity Report
ERC	emission reduction credit {offset}
ESA	Endangered Species Act (Federal) Environmental Site Assessment
ETSR	Energy Technologies Status Report
	F
FAA	Federal Aviation Administration
FBE	Functional Basis Earthquake
FCAA	Federal Clean Air Act
FCC	Federal Communications Commission
FEIR	Final Environmental Impact Report
FIP	Federal Implementation Plan
FONSI	Finding of No-Significant Impact
FERC	Federal Energy Regulatory Commission
FSA	Final Staff Assessment G

GEP	good engineering practice
GIS	gas insulated switchgear geographic information system
gpd	gallons per day
gpm	gallons per minute
GW	gigawatt
GWh	gigawatt hour
	H
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HHV	higher heating value
HRA	Health Risk Assessment
HRSG	heat recovery steam generator
HV	high voltage
HVAC	heating, ventilating and air conditioning
	I
IAR	Issues and Alternatives Report
IEA	International Energy Agency
IEEE	Institute of Electrical & Electronics Engineers
IID	Imperial Irrigation District
IIR	Issues Identification Report
IOU	Investor-Owned Utility
IS	Initial Study
ISO	Independent System Operator
	J
JES	Joint Environmental Statement
	K
KCAPCD	Kern County Air Pollution Control District
KCM	thousand circular mils (also KCmil) (electricity conductor)
KGRA	known geothermal resource area
km	kilometer
KOP	key observation point
KRCC	Kern River Cogeneration Company
kV	kilovolt
KVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt, electric
kWh	kilowatt hour
kWp	peak kilowatt
	L
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emission Rate
lbs	pounds
lbs/hr	pounds per hour
lbs/MMBtu	pounds per million British thermal units
LCAQMD	Lake County Air Quality Management District
LMUD	Lassen Municipal Utility District
LORS	laws, ordinances, regulations and standards
	M
m (M)	meter, million, mega, milli or thousand
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCE	maximum credible earthquake
MCF	thousand cubic feet
MCL	Maximum Containment Level
MCM	thousand circular mil (electricity conductor)
$\mu g/m^3$	micro grams (10^{-6} grams) per cubic meter

MEID	Merced Irrigation District
MG	milli gauss
mgd	million gallons per day
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MPE	maximum probable earthquake
m/s	meters per second
MS	Mail Station
MVAR	megavolt-ampere reactive
MW	megawatt (million watts)
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	megawatt hour
MWp	peak megawatt
	N
N-1	one transmission circuit out
N-2	two transmission circuits out
NAAQS	National Ambient Air Quality Standards
NCPA	Northern California Power Agency
NEPA	National Energy Policy Act National Environmental Policy Act
NERC	National Electric Reliability Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NMHC	nonmethane hydrocarbons
NO	nitrogen oxide
NOI	Notice of Intention
NOL	North of Lugo
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NOP	Notice of Preparation (of EIR)
NOV	Notice of Violation
NRDC	Natural Resources Defense Council
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSPS	New Source Performance Standards
NSR	New Source Review
	O
O_3	Ozone
OASIS	Open Access Same-Time Information System
OCB	oil circuit breaker
OCSG	Operating Capability Study Group
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration (or Act)
	P
PG&E	Pacific Gas & Electric Company
PDCI	Pacific DC Intertie
PHC(S)	Prehearing Conference (Statement)
PIFUA	Federal Powerplant & Industrial Fuel Use Act of 1978
PM	Project Manager particulate matter
PM_{10}	particulate matter 10 microns and smaller in diameter
$PM_{2.5}$	particulate matter 2.5 microns and smaller in diameter
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million by volume, dry
ppt	parts per thousand
PRC	California Public Resources Code

PSD	Prevention of Significant Deterioration
PSRC	Plumas Sierra Rural Electric Cooperative
PT	potential transformer
PTO	Permit to Operate
PU	per unit
PURPA	Federal Public Utilities Regulatory Policy Act of 1978
PV	Palo Verde photovoltaic
PX	Power Exchange
	Q
QA/QC	Quality Assurance/Quality Control
QF	Qualifying Facility
	R
RACT	Reasonably Available Control Technology
RDF	refuse derived fuel
ROC	Report of Conversation reactive organic compounds
ROG	reactive organic gas
ROW	right of way
RWQCB	Regional Water Quality Control Board
	S
SACOG	Sacramento Area Council of Governments
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SANDER	San Diego Energy Recovery Project
SB	Senate Bill
SCAB	South Coast Air Basin
SEGS	Solar Electric Generating Station
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCFM	standard cubic feet per minute
SCH	State Clearing House
SCIT	Southern California Import Transmission
SCR	Selective Catalytic Reduction
SCTL	single circuit transmission line
SDCAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric Company
SEPCO	Sacramento Ethanol and Power Cogeneration Project
SIC	Standard industrial classification
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SMUDGEO	SMUD Geothermal
SNCR	Selective Noncatalytic Reduction
SNG	Synthetic Natural Gas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_4	sulfates
SoCAL	Southern California Gas Company
SONGS	San Onofre Nuclear Generating Station
SPP	Sierra Pacific Power
STIG	steam injected gas turbine

SWP	State Water Project
SWRCB	State Water Resources Control Board
	T
TAC	Toxic Air Contaminant
TBtu	trillion Btu
TCF	trillion cubic feet
TCM	transportation control measure
TDS	total dissolved solids
TE	transmission engineering
TEOR	Thermally Enhanced Oil Recovery
TID	Turlock Irrigation District
TL	transmission line or lines
T-Line	transmission line
TOG	total organic gases
TPD	tons per day
TPY	tons per year
TS&N	Transmission Safety and Nuisance
TSE	Transmission System Engineering
TSIN	Transmission Services Information Network
TSP	total suspended particulate matter
	U
UBC	Uniform Building Code
UDC	Utility Displacement Credits
UDF	Utility Displacement Factor
UEG	Utility Electric Generator
USC(A)	United States Code (Annotated)
USCOE	U.S. Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
	V
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds
	W
W	Watt
WAA	Warren-Alquist Act
WEPEX	Western Energy Power Exchange
WICF	Western Interconnection Forum
WIEB	Western Interstate Energy Board
WOR	West of River (Colorado River)
WRTA	Western Region Transmission Association
WSCC	Western System Coordination Council
WSPP	Western System Power Pool