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

APPLICATION FOR CERTIFICATION OF THE PALOMAR ENERGY PROJECT BY THE SEMPRA ENERGY RESOURCES	**DOCKET NO. 01-AFC-24** **DATA ADEQUATE** **FEBRUARY 6, 2002**

NOTICE OF AVAILABILITY OF THE PRESIDING MEMBER'S PROPOSED DECISION AND NOTICE OF COMMITTEE CONFERENCE AND NOTICE OF COMMISSION HEARING

NOTICE OF AVAILABILITY

On June 27, 2003, the Committee issued the Presiding Member's Proposed Decision (PMPD) for the Palomar Energy Project. Copies of the PMPD were sent to the Proof of Service List and are also available from the Energy Commission's Publications Unit, 1516 Ninth Street, MS-13, Sacramento, CA 95814. For a printed copy, call the Publications Unit at 916-654-5200 and ask for Publication P800-03-008. The PMPD may also be viewed on the Commission's Internet Web Site at: **[www.energy.ca.gov/sitingcases/palomar]**.

NOTICE OF COMMITTEE CONFERENCE ON THE PMPD

PLEASE TAKE NOTICE that the Committee will conduct a public Conference to discuss comments on the PMPD as follows:

FRIDAY, AUGUST 1, 2003
Beginning at 2 p.m.
California Energy Commission
First Floor Hearing Room A
1516 Ninth Street
Sacramento, California 95814
[Wheelchair Accessible]

Teleconference: Governmental agencies and members of the public may participate either in person or via teleconference. For the convenience of those who cannot travel to Sacramento, please call **1-888-462-1974** by 2 p.m. on the

day of the Conference. The "conference leader" is Susan Gefter and the "passcode" is Palomar.

Public Comments: Members of the public and governmental agencies may submit written comments on the PMPD. The public comment period ends August 1, 2003. Twelve copies of all comments must be received no later than 5 p.m. on August 1, 2003, by the Energy Commission's Docket Unit, MS-4, 1516 Ninth Street, Sacramento, CA 95814. Identify all comments with "Docket No. 01-AFC-24." Please contact the Energy Commission's Public Adviser as indicated below for information on how to participate.

Required Comments: Applicant, Staff, and Intervenors intending to participate at the Conference shall file written comments on the PMPD. The parties' comments shall be served and filed no later than 12 noon on **July 24, 2003**. The comments shall also be sent by email to the parties and to the Hearing Officer. 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.

Specific Comments: As stated in the Introduction, we direct the parties to present comments on the following issues related to air quality:

- *The Air District imposed Condition of Certification **AQ-32**, which establishes emission limits for carbon monoxide (CO) at 4.0 parts per million by volume (ppmv). The record indicates that while the San Diego Air Basin is in attainment for CO, the ambient CO levels have been constant but not decreasing. The parties are directed to clarify why the project's CO emissions should not be limited to 2.0 ppmv, which is the state-of-the-art requirement for gas fired turbine-generators in California, particularly in the South Coast Air District.*

- *Staff's proposed Condition **AQ-SC11** provides that ammonia emissions (ammonia slip) from each gas-turbine exhaust stack following SCR shall not exceed 5.0 ppmvd (on a dry basis) except during transient hours, when a limitation of 10.0 ppmvd is permitted. Since the number of "transient hours" cannot be predicted, it is possible that transient hours could exceed non-transient hours. Considering that the amount of ammonia slip emitted by the project is a contested issue and in light of both Applicant's and Staff's assertion that estimated ammonia emissions are more conservative than expected during actual operation, the parties are directed to provide alternative language that would limit ammonia slip to 5.0 ppmv under all circumstances.*

- *The parties are directed to update Staff's Air Quality Table 16, which is replicated in the Air Quality section of the Decision, to reflect additional data provided during evidentiary hearings with respect to the project's revised NO_x emissions cap of 104.3 tons per year (tpy). We also direct Staff to clarify the basis for determining that the project's unmitigated liability for PM_{10} is 108 tpy.*

NOTICE OF COMMISSION HEARING

PLEASE TAKE FURTHER NOTICE that the Energy Commission will conduct a hearing on the PMPD at its regularly scheduled business meeting as follows:

WEDNESDAY, AUGUST 6, 2003
Beginning at 10 a.m.
First Floor Hearing Room A
1516 Ninth Street
Sacramento, CA 95814
[Wheelchair Accessible]

The purpose of the Commission hearing is to consider whether the Energy Commission should adopt the PMPD. Members of the public are invited to participate and offer their comments on the PMPD at the hearing.

Information on Public Participation

For information concerning public participation at the Committee Conference and at the Commission hearing, contact the Commission's Public Adviser, Roberta Mendonca, at 916-654-4489 or, toll free, at 1-800-822-6228; 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 Lourdes Quiroz at 916-654-5146 prior to the Conference.

Technical questions should be directed to the Commission's Project Manager, Bob Eller, at 916-651-8835, or email: **[beller@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]**.

Schedule for Remainder of Proceedings

• Comments Due for PMPD Conference	July 24, 2003	12 noon
• Committee PMPD Conference	August 1, 2003	2 p.m.
• Close of PMPD Comment Period	August 1, 2003	5 p.m.
• Commission Hearing on PMPD	August 6, 2003	10 a.m.

Dated June 27, 2003, at Sacramento, California.

_____
JOHN L. GEESMAN
Commissioner and Presiding Member
Palomar AFC Committee

_____
WILLIAM J. KEESE
Chairman and Associate Member
Palomar AFC Committee

Mail Lists: POS, 7152, 7153, 7154

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

The Committee hereby submits its Presiding Member's Proposed Decision for the Palomar Energy Project (Docket Number 01-AFC-24). We have prepared this document pursuant to the requirements set forth in the Commission's regulations. (Cal. Code of Regs., tit. 20, §§ 1749-1752.5).

We recommend that the Application for Certification for the Palomar Energy Project be approved, subject to the Conditions of Certification set forth herein, and that the Commission grant the Applicant a license to construct and operate the project.

Dated June 27, 2003, at Sacramento, California.

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JOHN L. GEESMAN
Commissioner and Presiding Member
Palomar AFC Committee

_____
WILLIAM J. KEESE
Chairman and Associate Member
Palomar AFC Committee

INTRODUCTION

A. SUMMARY OF THE DECISION

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

On November 28, 2001, Palomar Energy, LLC filed an Application for Certification with the California Energy Commission seeking approval to construct and operate the Palomar Energy Project (PEP), a nominally rated 550 megawatt (MW) natural gas-fired combined cycle power plant project. The project will be situated on a 20-acre site within the Escondido Research and Technology Center, a planned 186-acre industrial park in the City of Escondido in San Diego County. The project site is about 600 feet southwest of the intersection of Vineyard Avenue and Enterprise Street, west of Interstate 15 and south of State Highway 78.

The project consists of two combustion turbine-generators equipped with dry low combustors and evaporative inlet air coolers, two heat recovery steam generators equipped with duct burners, selective catalyst reduction (SCR) and oxidation catalyst emission control systems, a steam turbine-generator, and

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[1] The Reporter's Transcript of the evidentiary hearings conducted on April 8, 28, and 29, 2003, is cited as "RT, page (p.) __." The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in Appendix C of this Decision.

associated auxiliary systems and equipment. The project also includes a new 230 kV switchyard that will interconnect with an existing San Diego Gas and Electric Company (SDG&E) electric transmission line located immediately adjacent to the project site. The project does not require construction of any new transmission lines.

The power plant will be fueled by natural gas delivered via the SDG&E gas system. An existing SDG&E natural gas pipeline with sufficient capacity to serve the project is located immediately adjacent to the project site. In order to relieve a bottleneck in a segment of the existing SDG&E gas system located about one mile northeast of the project site, SDG&E will construct an upgrade consisting of approximately 2,600 feet of 16-inch pipeline.

Tertiary treated recycled water for project cooling will be supplied by the City of Escondido Hale Avenue Resource Recovery Facility (HARRF) via a new 1.1 mile, 16-inch pipeline extending from an existing reclaimed water main. Brine from the project, consisting entirely of cooling tower blowdown, will be returned to the HARRF via a new 1.1 mile, 8-inch return pipeline routed alongside the reclaimed water supply pipeline.

Project construction will begin with excavation and grading in the third quarter of 2003, with commercial operation planned by the end of 2005. During the construction period, the project will provide a maximum of about 350 construction jobs. During operation, the project will employ approximately 20 permanent fulltime employees. The facility has a planned life of 30 years. Applicant estimates the capital costs associated with the project will be approximately $350 million.

Several local, state, and federal agencies cooperated with the Energy Commission in completing this review process. The Applicant and Commission staff worked with the City of Escondido, the Rincon Del Diablo Water District, the

San Diego County Water Authority, the San Diego Regional Water Quality Control Board, the San Diego Air Pollution Control District (SDAPCD), the California Air Resources Board (CARB), the U.S. Environmental Protection Agency (U.S. EPA), the San Diego County Department of Environmental Health, the California Department of Health Services, the California Department of Toxic Substances Control (DTSC), the California Department of Transportation (Caltrans), SDG&E, and the California Independent System Operator (Cal-ISO). The formal intervenors included California Unions for Reliable Energy (CURE), Cabrillo Power I, LLC (NRG Energy), and Bill Powers, P.E.

SDAPCD was responsible for coordinating input from the U.S. EPA 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. The Air District confirmed that the project's offset package is complete in accordance with the requirements of Public Resources Code section 25523(d)(2). The limitations on project emissions and the conditions imposed by SDAPCD as well as the mitigation measures recommended by Staff are incorporated into this Decision.

*The Air District imposed Condition of Certification **AQ-32**, which establishes emission limits for carbon monoxide (CO) at 4.0 parts per million by volume (ppmv). The record indicates that while the San Diego Air Basin is in attainment for CO, the ambient CO levels have been constant but not decreasing. We direct the parties to clarify why the project's CO emissions should not be limited to 2.0 ppmv, which is the state-of-the-art requirement for gas fired turbine-generators in California, particularly in the South Coast Air District.*

*Staff's proposed Condition **AQ-SC11** provides that ammonia emissions (ammonia slip) from each gas-turbine exhaust stack following SCR shall not exceed 5.0 ppmvd (on a dry basis) except during transient hours, when a limitation of 10.0 ppmvd is permitted. Since the number of "transient hours"*

cannot be predicted, it is possible that transient hours could exceed non-transient hours. Considering that the amount of ammonia slip emitted by the project is a contested issue and in light of both Applicant's and Staff's assertion that estimated ammonia emissions are more conservative than expected during actual operation, we direct the parties to provide alternative language that would limit ammonia slip to 5 ppmv under all circumstances.

Finally, the parties are directed to update Staff's Air Quality Table 16, which is replicated in the Air Quality section of the Decision, to reflect additional data provided during evidentiary hearings with respect to the project's revised NO_x emissions cap of 104.3 tons per year (tpy). We also direct Staff to clarify the basis for determining that the project's unmitigated liability for PM_{10} is 108 tpy.

The Rincon Del Diablo Water District (Water District) provided a "Will Serve" letter to the PEP agreeing to meet the project's water requirements, including potable water for domestic uses and recycled water for cooling and other industrial purposes. In addition, the Water District, the City of Escondido, and the Palomar Energy Project executed a Recycled Water Service Agreement, a long-term contract among the parties for the delivery of HARFF-recycled water to meet the project's reclaimed water demand.

Intervenor Bill Powers asserted the project should employ dry cooling instead of the plume-abated wet cooling process that requires use of recycled water. Mr. Powers believes that use of recycled water by the power plant is inappropriate in the water-scarce San Diego region, which relies on imported water for most of its water needs. Mr. Powers argued that other potential uses for recycled water such as irrigation for avocado groves or the injection of recycled water into the San Pasqual Valley aquifer are more beneficial uses. However, the HARRF has sufficient recycled water capacity to supply the PEP without affecting its existing customers and Mr. Power's identification of potential future customers is a speculative exercise.

Mr. Powers also contended that cooling tower emissions could result in significant impacts compared with dry cooling technology, which has no cooling tower emissions. The Committee directed Staff to conduct an alternatives analysis of the dry cooling option for purposes of enhancing the record. Our review of the evidence regarding potential effects of the project's proposed wet cooling design indicates there are no unmitigated adverse effects to air quality, public health, visual resources, or water resources caused by the project's use of recycled water. Dry cooling is typically employed when recycled water is not available or to mitigate environmental impacts related to wet cooling that cannot otherwise be mitigated. That is not the case here. The evidentiary record supports the Applicant's selection of the wet cooling option.

The evidentiary record on the topic of Waste Management indicated that a leaking underground storage tank (LUST) was present near the PEP site. Staff proposed Condition **WASTE-7** to ensure that the LUST would not result in contamination of on-site soils. Subsequently, the parties provided confirmation that the LUST had been removed. The San Diego County Department of Environmental Health is monitoring trace levels of MTBE in the groundwater but there is no evidence that any pollution has migrated to the site consistent with DTSC requirements. Therefore, Condition **WASTE-7** is no longer pertinent and has been deleted.

Section 25523(h) of the Public Resources Code requires a discussion of the project's benefits. We address this issue in the Socioeconomics section of the Decision in which we find that the PEP will provide local economic benefits and electricity reliability to the northern San Diego area and will also compete favorably with older, more polluting electricity generators in the region.

<u>Public Comment.</u> Escondido Mayor Lori Holt Pfieler indicated the City's support for the project. She stated that the PEP project was included in the City's public review process for the ERTC Specific Plan Amendment (SPA), which was

unanimously approved by the City Council. Mr. Frank Lorey, Planning Commissioner for Escondido also expressed the City's support for the power plant project.

Comments from local residents included Mr. Steve LoRusso, former president of Concerned Neighbors of Quail Hills, who supports the project. Ms. Carolyn Shaputnic, a nurse and nearby resident is concerned about public health effects from project emissions and does not believe a large populated area is a good place to site a new source of particulate emissions. Mr. Mark Rodriquez, a nearby resident is also concerned about public health effects and the potential degradation of air quality due to project emissions. Mr. Greg Morrill, a nearby resident asked for reassurance that the Commission would enforce conditions to ensure that the project complies with legal requirements. Mr. Morrill is also concerned about the project's effect on the property value of his home. These concerns are addressed by the analyses contained in the Decision and the evidentiary record. We find the project is consistent with applicable law and will not result in any unmitigated public health or environmental impacts.

B. SITE CERTIFICATION PROCESS

The Palomar Energy Project 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 regulatory process, including the evidentiary record and associated analyses, is functionally equivalent to the preparation of an Environmental Impact Report. (Pub. Resources Code, § 21080.5.) The process is designed to complete the review within a specified time period; a license issued by the Commission is in lieu of other state and local permits.

The Commission's certification process provides a thorough review and analysis of all aspects of the proposed power plant project. During this process, we conduct a comprehensive examination of a project's potential economic, public health and safety, reliability, engineering, and environmental ramifications.

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 intervenors with an opportunity to present evidence and cross-examine witnesses. Public participation is encouraged at every stage of the process.

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

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such 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 publishes its initial technical evaluation of a project in a document called the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff’s responses to public comment on the

PSA and its complete analyses are published in the Final Staff Assessment (FSA).

Following this, the Committee conducts a Prehearing Conference to assess the adequacy of available information, identify issues, and determine the positions of the parties. Based on information presented at this event, the Committee issues a Hearing Order to schedule formal evidentiary hearings. At these hearings, all entities that have formally intervened as parties may present sworn testimony, which is subject to cross-examination by other parties and questioning by the Committee. Members of the public 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 recommendations appear in the Presiding Member's Proposed Decision (PMPD), which is available for a 30-day public comment period. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, 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 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 Energy Commission regulations (Cal. Code of Regs., tit. 20, § 1701, et seq.) mandate a public process and specify the occurrence of certain necessary events. The key procedural events that occurred in the present case are summarized below.

On November 28, 2001, Palomar Energy, LLC, a wholly-owned subsidiary of Sempra Energy, filed an Application for Certification with the Energy Commission seeking approval to construct and operate the Palomar Energy Project (PEP). On February 6, 2002, the Commission accepted the AFC as data adequate in order to commence the 12-month review process and assigned a Committee of two Commissions to conduct proceedings.

The parties included Commission staff, the Applicant, and Intervenors California Unions for Reliable Energy (CURE), Cabrillo Power I, LLC (NRG Energy) and Bill Powers, P.E.

On February 20, 2002, the Committee issued a notice of "Informational Hearing and Site Visit." The notice was mailed to members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the PEP. The notice was also published in a local general circulation newspaper.

The Committee conducted the Informational Hearing and Site Visit in the City of Escondido on March 21, 2002. At that event, the Committee, the parties and other participants discussed the proposal for developing the PEP, described the Commission's review process, and explained opportunities for public participation. The participants also viewed the site where the PEP will be situated and toured the residential and industrial areas around the perimeter of the ERTC Specific Plan Area.

As part of the review process, Staff conducted several public workshops on April 17, June 11, September 19, and October 22, 2002, to discuss issues of concern with the Applicant, governmental agencies, and interested members of the public. Staff issued its Final Staff Assessment (FSA) on January 25, 2003, and conducted a public workshop on February 7, 2003, to discuss the FSA.

On March 29, 2002, the Committee issued its initial Scheduling Order, which anticipated that the City of Escondido would complete its review of the ERTC Specific Plan Amendment, including zoning for the PEP site, by September 2002. Subsequently, the City's schedule slipped by two months to November 2002, and the Applicant's submittal of air quality data was also delayed. On August 29, 2002, the Committee issued a Revised Scheduling Order extending the AFC schedule to accommodate the City's schedule. On February 6, 2003, the Committee issued a Notice of Site Visit and Prehearing Conference, which was conducted on March 13, 2003.

On March 20, 2003, the Committee noticed Evidentiary Hearings, which were conducted April 8, 28, and 29, 2003.

Intervenors CURE and Cabrillo Power I, LLC (NRG Energy) did not participate at any of the Staff workshops or Committee events. Intervenor Bill Powers actively participated at Staff Workshops and all Committee events. Mr. Power filed a Petition to Delay the Preliminary Staff Assessment and a Petition for a Committee Workshop on Dry Cooling Issues. The Committee denied both Petitions. *See*, Order Denying Request to Delay Preliminary Staff Assessment, dated August 19, 2002, and Order Denying Petition for Committee Workshop, dated October 7, 2002.

After reviewing the evidentiary record, including Mr. Powers' testimony and voluminous exhibits, the Committee published the Presiding Member's Proposed

Decision (PMPD) on June 27, 2003, and scheduled a Committee Conference on August 1, 2003, to discuss comments on the PMPD. The 30-day comment period on the PMPD ends August 1, 2003.

I. PROJECT PURPOSE AND DESCRIPTION

Sempra Energy Resources ("Applicant" or Sempra) filed an application for the Palomar Energy Project (PEP or "project"), a nominally rated 550-megawatt (MW) natural gas-fired power plant. (Ex. 35, Testimony of Joe Rowley [Rowley], Project Description, p. 3; Ex. 2 § 2.1.) The PEP will be located in the City of Escondido in San Diego County. (*Ibid*.)

Project Ownership

The application states that the project owner is Palomar Energy, LLC, a Delaware limited liability company, which is a wholly-owned subsidiary of Sempra Energy Resources. According to Sempra, the PEP was identified as a potential source for electricity under a contract between Sempra Energy Resources and the California Department of Water Resources for the sale of 1900 MW. (Ex. 1, § 2.1.) For purposes of this Decision, all references to the project owner include Sempra Energy Resources and its subsidiary Palomar Energy, LLC.

Power Plant Site and Facilities

The PEP will be located on a vacant, largely disturbed 20-acre site within a planned 186-acre industrial park, known as the Escondido Research and Technology Center (ERTC), which consists of eight Planning Areas. (See Project Description Figure 3, below.) The 20-acre power plant site is designated Planning Area 1 of the ERTC. In November 2002, the City of Escondido approved a final Environmental Impact Report for the ERTC and adopted the ERTC Specific Plan, which includes zoning for the PEP. (Ex. 35, Rowley, Project Description, p. 1; Ex. 50 p. 3-1.) Sempra does not currently own the project site, but has site control based on an option to purchase the site upon certification of the project. (4/8/03 RT, p. 34.)

The project site is located west of Interstate 15 and south of State Highway 78, about 600 feet southwest of the intersection of Vineyard Avenue and Enterprise Street. (Ex. 50, p. 3-2.) Access to the site is provided from Highway 78 by traveling south on Nordahl Road, which becomes Vineyard Avenue, and then south on the future Citracado Parkway extension. (Ex. 1, § 2.2.) See Project Site and Vicinity Maps on the following pages.

The site is bounded on the north by an existing 49 MW power plant (CalPeak), on the east by existing industrial uses, on the south by future industrial park uses, and on the west by existing SDG&E transmission lines and future industrial park uses. The nearest residences are located approximately 1,800 feet west of the project site. (Ex. 35, Rowley, Project Description, p. 3.) An additional 44 MW peaking power plant (RAMCO) is located about 0.5 mile to the northwest of the PEP site. (4/8/03 RT, p. 33.)

Grading of the ERTC industrial park will include lowering the elevation of Planning Area 1 by about 40 feet to an elevation of 750 feet above mean sea level (amsl). This grading will preserve and enhance the ridgelines along the western and eastern sides of Planning Area 1, resulting in a ridgeline height of up to 82 feet above the finished pad elevation on the west and up to 50 feet above the finished pad elevation on the east. The excavated materials from Planning Area 1 will be used as fill in other Planning Areas of the industrial park, and also to create berms along the north and northeast sides of Planning Area 1 cresting at a uniform 20 feet above the finished pad elevation. Grading of the overall industrial park, including Planning Area 1, will be completed prior to the beginning of on-site work on the power plant facilities. (Ex. 35, Rowley, Project Description, p. 4.)

INSERT PROJECT SITE AND VICINITY MAP

INSERT FIGURE 3 MAP

The power plant project consists of a natural gas-fired, combined cycle power plant with a nominal electrical power output of 550 MW, along with associated reclaimed water supply and brine return pipelines. The power generating facilities include two General Electric 7FA combustion turbine-generators (CTGs) provided with evaporative inlet air coolers, two multi-pressure heat recovery steam generators (HRSGs) equipped with duct burners, two 110-foot tall HRSG exhaust stacks, and one reheat condensing steam turbine-generator (STG). The cooling system includes a surface condenser, circulating water system, and a plume-abated wet cooling tower. To control air emissions, the CTGs will be equipped with dry low NOx combustors, and the HRSGs will include selective catalytic reduction and an oxidation catalyst. (Ex. 50, p. 3-2; Ex. 1, § 2.4 et seq.; Ex. 35, Rowley, Project Description, pp. 2-5.)

At full load, each CTG generates approximately 165 MW at average ambient conditions. Heat from the CTG exhausts is used in the HRSGs to generate steam and to reheat steam. With the CTGs at full load but without the duct burners in operation, the HRSGs produce sufficient steam for the STG to operate at its base load output of 187 MW at average ambient conditions, yielding an overall plant gross output of approximately 517 MW. Under the same conditions but with the duct burners in service, the STG can reach its peaking output of 229 MW at average ambient conditions, yielding an overall plant gross output of approximately 560 MW. (Ex.1, § 2.4.2; Ex. 35, Rowley, Project Description, p. 3.)

Electricity will be generated at 18 kV by the two CTGs and STG, and then stepped up to 230 kV at the new on-site 230 kV ring bus switchyard, which will interconnect via a loop-in to SDG&E's existing 230 kV Escondido-Sycamore Canyon transmission line adjacent to the western boundary of the site. The project does not require construction of any new transmission lines. (Ex. 50, p. 3-2.)

The PEP will be fueled with natural gas delivered via the SDG&E gas system. An existing SDG&E natural gas pipeline with sufficient capacity to serve the project is located immediately adjacent to the project site. To relieve a bottleneck in a segment of the SDG&E gas system located about one mile from the site, SDG&E will construct an upgrade consisting of approximately 2,600 feet of 16-inch pipeline. This upgrade will be routed along Lincoln Avenue from its intersection with Rock Springs Road to its intersection with Metcalf Street, and then along Metcalf Street to its intersection with Mission Avenue, entirely within existing paved streets. (Ex. 50, p. 3-6; Ex. 35, Rowley, Project Description, p. 3.)

Reclaimed water for process cooling will be supplied to the project from the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF) via a new 1.1-mile 16-inch supply pipeline extending from an existing City of Escondido reclaimed water main. Brine from the project will be returned to the HARRF via a new 1.1-mile 8-inch brine return pipeline routed alongside the water supply pipeline and connecting to a City of Escondido brine return main. A raw water storage tank at the plant site will hold a total of 730,000 gallons of water: 530,000 gallons for plant operation (sufficient to cover a four-hour water supply service interruption) plus 200,000 gallons dedicated to the plant's fire protection water system. (Ex. 50, p. 3-6; Ex. 35, Rowley, Project Description, p. 4.)

Project Schedule

Project construction is expected to take 21 months, and will involve an average and peak construction work force of about 240 and 350 individuals, respectively. Temporary construction laydown and parking areas will be provided south of the PEP site in Planning Area 2 of the ERTC. Construction traffic will be routed south on Nordahl Road, which becomes Vineyard Avenue, continuing southeast on Vineyard to the future Citracado Parkway extension and south on the Citracado extension to the site. Traffic mitigation measures will be implemented

to relieve congestion at the intersections of Vineyard and Country Club and Vineyard and Citracado during peak traffic periods. (Ex.; 50, p. 3-7.)

The capital cost of the project is estimated at $350 million. (Ex. 50, p. 4.8-11.) Construction includes the purchase of $40 million worth of materials and equipment in the local area, which will generate approximately $2 million in sales tax revenues during the construction period. Operating costs include an annual payroll of approximately $1.7 million and annual maintenance expenses of approximately $3 million. (Ex. 1, 5.8-14.) Applicant estimates the project will generate local property tax revenues of approximately $3.0-$3.5 million per year based on current property tax rates. (Ex. 35, Testimony of Arrie Bachrach, Socioeconomics, p. 4.) The power plant is designed to operate at this site for about 30 years. (Ex. 50, p. 3-7.)

FINDINGS AND CONCLUSIONS

Based upon the evidentiary record, we find as follows:

1. The project owner, Sempra Energy Resources, proposes the Palomar Energy Project (PEP), a nominally rated 550 MW combined cycle natural gas power plant in the City of Escondido in San Diego County.

2. The PEP consists of a power island, other electrical generation and mechanical equipment, cooling tower, transformers, switchyard, emission control equipment, storage tanks, and administrative facilities.

3. The PEP will be located on a 20-acre site within the planned 186-acre Escondido Research and Technology Center industrial park and includes a 1.1-mile reclaimed water supply pipeline, a 1.1-mile brine return pipeline, and a 2,600-foot natural gas pipeline upgrade to SDG&E's existing gas pipeline system about one mile from the site.

4. The PEP will interconnect with SDG&E's existing Escondido-Sycamore Canyon transmission line via a loop-in from the new switchyard and does not require construction of any new transmission lines.

5. Sempra does not own the site but has site control based on an option to purchase the site upon certification of the project.

We therefore conclude that Sempra has described the Palomar Energy Project 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. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives including the "no project" alternative, which would attain the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.[2] (Cal. Code of Regs., tit. 14, §§ 15126.6(d) and (e); *see also*, tit. 20, § 1765.) The range of alternatives is governed by the "rule of reason" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. (*Id.* at tit. 14, § 15126.6(d)(5).)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Palomar Energy Project is a nominal 550-megawatt (MW) natural-gas-fired combined cycle power plant with associated infrastructure. The site is located on a vacant 20-acre site within a planned 186-acre industrial park in the City of Escondido, San Diego County, California. The site is west of Interstate 15 and south of State Highway 78, approximately 600 feet southwest of the intersection of Vineyard Avenue and Enterprise Street. (Ex. 50, p. 6-1.)

The evidentiary record describes the benefits of the PEP site in the discussion of alternative sites and technologies as well as the "no project alternative." (Ex. 1, § 3; Ex. 50, p. 6-1 et seq.)

[2] Based on the totality of the record and as reflected in our findings for each of the technical topic areas, *infra*, the PEP, as mitigated, will not result in significant adverse effects on the environment. We include the analysis of project alternatives to ensure that our certification review conforms with requirements of the CEQA Guidelines and the Energy Commission's regulations. (Cal. Code of Regs., tit. 14, § 15126.6 and tit. 20, § 1765.)

Methodology

To prepare the alternatives analysis, Staff used the methodology summarized below: (Ex. 50, p. 6-3.)

- Identify the basic objectives of the proposed project, provide an overview of the project, and describe its potentially significant adverse impacts.
- Determine whether there are any feasible *site alternatives* for analysis by evaluating the extent to which most of the project objectives can be achieved and the degree to which any significant impacts of the project would be substantially lessened at such alternative sites.
- Evaluate whether the alternative sites would create any inherent impacts specific to those sites.
- Identify and evaluate *technical alternatives* to the project such as increased energy efficiency (or demand side management) and the construction of alternative technologies (e.g. wind, solar, or geothermal).
- Evaluate the feasibility and impacts of not constructing the project (the *"no project*" alternative).

The evidentiary record establishes that there are no unmitigated impacts to the environment or public health and safety. (Ex. 50, p. 6-3; see also the Findings and Conclusions for each technical topic in this Decision.)

Project Objectives

Staff identified the project's major objectives as follows:

- generation of approximately 500 MW of load-serving capability in a location with access to SDG&E's load pocket;
- location near an electrical substation and key infrastructure for natural gas and non-potable water supply; and
- commercial operation by approximately 2004. (Ex. 50, p. 6-3.)

Alternative Site Location

Eight alternative sites were investigated by the Applicant. (Ex. 1, §3.2.) Staff reviewed three sites identified by Applicant that satisfied the criteria for meeting project objectives:

- Alternative Site 1 (San Marcos Site): A 15-acre parcel located on Hidden Canyon Road approximately 7.2 miles southwest of the Escondido Substation. (Ex. 50, 6-4.)
- Alternative Site 2 (Sycamore Canyon Site): An unspecified sized site located immediately north of the Marine Corps Air Station (MCAS) Miramar. (Ex. 50, p. 6-7.)
- Alternative Site 3 (Talega Site): A general site of unspecified size located immediately north of the U.S. Marine Corps Base Camp Pendleton, one-mile north of the San Diego County line. (*Ibid*.)

Alternative Site 1 was previously used as a recycling facility. The site met the project objectives, except the availability of water was not confirmed. However, Staff considered dry cooling to be feasible. Also, the availability of natural gas to this site requires further analysis. Construction of a new gas pipeline would result in greater environmental impacts as compared to the proposed site. (Ex. 1, §3.0; 50, p. 6-4.)

Alternative Site 2 also meets the project objectives. Staff determined that road improvements would be necessary to support heavy load trucks used for construction. According to Staff, potential adverse impacts on biological resources could be significant and would need further evaluation. (Ex.1, § 3.0; Ex. 50, p. 6-7.) Further, Applicant testified that the land is not readily available because the site is part of the Miramar Naval Air Station reserve under federal ownership. (Ex. 35, pp 3-4.)

Alternative Site 3 is located in Orange County and is currently used for agriculture. According to Staff, availability of natural gas requires further analysis and construction of a gas pipeline would result in greater impacts than the

proposed site. Availability of water has not been confirmed, but Staff testified that dry cooling is considered to be feasible in this area. Staff further testified that impacts to biological resources and visual resources may be significant and would need further analysis. (Ex. 50, p. 6-8.)

Technology Alternatives[3]

Staff analyzed alternative technologies based on commercial availability, feasibility, environmental, health and safety impacts, and relative cost. (Ex. 50, pp. 6-9 to 6-12.) Technologies such as hydroelectric, geothermal, solar, and wind power were rejected by Staff as either not being capable of implementation in the San Diego area or not meeting project goals. (*Ibid*.) Technologies relying on coal or other solid fossil fuels were rejected because of their higher air pollutant emission rates. *(Ibid.)* Staff concluded none of the alternative technologies analyzed would be feasible alternatives to the project. (Ex. 50, p. 6-12.)

Applicant considered a number of different natural gas-fueled power generation technologies and determined that the proposed conventional combined-cycle technology offers the best combination of efficiency, environmental performance, and proven technology. Within the range of currently available, large combustion turbines, the General Electric 7FA model was selected for the project because it offers the best combination of commercially proven status, emissions performance, efficiency, and operational flexibility. (Ex. 35, Rowley, Alternatives, p. 4.)

[3] The project will use a plume-abated, wet cooling tower in combination with a surface condenser cooled by circulating water. Based on requests from Intervenor Bill Powers, Applicant and Staff considered the option of dry cooling technology using an air cooled condenser in place of the project's wet cooling technology. Discussion of the dry cooling alternative compared with wet cooling is presented in the **Soil and Water Resources** section of this Decision.

No Project Alternative

The CEQA Guidelines require an analysis of the "no project" alternative to compare the impacts of approving the project with the impacts of not approving the project. (Cal. Code of Regs., tit. 14, § 15126.6(e).) In this case, the "no project" alternative assumes that the PEP would not be built. If the PEP facility were not constructed, the proposed site would likely be developed as part of a planned 186-acre industrial park and permitted uses would include light industrial. (Ex. 50, p. 6-8.) According to Staff, those uses would not likely require the quantity of water or natural gas as proposed for the PEP. Therefore, the water would be available for other uses and an immediate upgrade to SDG&E's natural gas pipeline would not be required. If the planned industrial park is not developed, demand for water and natural gas would be further reduced. (*Ibid*.)

However, if the PEP project were not constructed, it would not contribute to California's electricity resources, increase competition, and help form a more reliable electric system that meets the goals of the deregulated energy market. Power plants would likely be constructed in other areas. Due to market forces, the proposed facility may also serve to replace older, inefficient facilities. This replacement may not occur in the absence of the plant's construction. (Ex. 50, p. 6-9.)

Based on the analysis described above, Staff concluded that the PEP project is the preferable alternative. The three site alternatives offered a few advantages and several disadvantages. Staff does not believe that energy efficiency measures, alternative technologies, and/or alternative sites would achieve project objectives. (Ex. 50, p. 6-12.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record on alternatives (except for cooling options discussed in the **Soil and Water** section), the Commission makes the following findings and conclusions:

1. All potential adverse environmental effects related to the project will be mitigated to insignificant levels.

2. The evidentiary record contains an adequate review of alternative sites, fuels, technologies, and the “no project” alternative.

3. Renewable technology alternatives such as geothermal, solar, or wind resources either are unavailable in the San Diego area or are not capable of meeting project objectives.

4. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been identified.

5. While the “no project” alternative would eliminate all impacts of the PEP, the benefits of increasing generation in the northern San Diego County load pocket would also not be achieved, and environmental impacts could be shifted to other power plant locations where impacts could be greater than those that would result from construction and operation of the project.

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

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

III. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

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

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

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

- 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 contains the specific "Conditions of Certification". These are found following the summary and discussion of each individual topic area in this Decision. The individual conditions contain the measures required to mitigate potentially adverse project impacts associated with construction, operation and closure to an insignificant level. Each condition also includes a verification provision describing the method of assuring that the condition has been satisfied.

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

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

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

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

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

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

To ensure consistency, continuity and efficiency, the following terms, as defined, apply to all technical areas, including Conditions of Certification:

SITE MOBILIZATION

Moving trailers and related equipment onto the site, usually accompanied by minor ground disturbance, grading for the trailers and limited vehicle parking, trenching for construction utilities, installing utilities, grading for an access corridor, and other related activities. Ground disturbance, grading, etc. for site mobilization are limited to the portion of the site necessary for placing the trailers and providing access and parking for the occupants. Site mobilization is for temporary facilities and is, therefore, not considered construction.

GROUND DISTURBANCE

Onsite activity that results in the removal of soil or vegetation, boring, trenching or alteration of the site surface. This does not include driving or parking a passenger vehicle, pickup truck, or other light vehicle, or walking on the site.

GRADING

Onsite activity conducted with earth-moving equipment that results in alteration of the topographical features of the site such as leveling, removal of hills or high spots, or moving of soil from one area to another.

CONSTRUCTION

[From section 25105 of the Warren-Alquist Act.] Onsite work to install permanent equipment or structures for any facility. Construction does **not** include the following:

- the installation of environmental monitoring equipment;
- a soil or geological investigation;
- a topographical survey;
- any other study or investigation to determine the environmental acceptability or feasibility of the use of the site for any particular facility; or
- any work to provide access to the site for any of the purposes specified in a., b., c., or d.

START OF COMMERCIAL OPERATION

For compliance monitoring purposes, “commercial operation” is that phase of project development which begins after the completion of start-up and commissioning, where the power plant has reached steady-state production of electricity with reliability at the rated capacity. For example, at the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

A Compliance Project Manager (CPM) will oversee the compliance monitoring and shall be responsible for:

1. ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and conditions of the Energy Commission Decision;
2. resolving complaints;
3. processing post-certification changes to the conditions of certification, project description, and ownership or operational control;
4. documenting and tracking compliance filings; and
5. ensuring that the compliance files are maintained and accessible.

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

All project compliance submittals are submitted to the CPM for processing. Where a submittal required by a condition of certification requires CPM approval the approval will involve all appropriate staff and management.

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

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

Energy Commission Record

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

- all documents demonstrating compliance with any legal requirements relating to the construction and operation of the facility;
- all monthly and annual compliance reports filed by the project owner;
- all complaints of noncompliance filed with the Energy Commission; and
- all petitions for project or condition changes and the resulting staff or Energy Commission action.

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. A summary of the General Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section. The designation after each of the following summaries of the General Compliance Conditions (**COM-1, COM-2,** etc.) refers to the specific General Compliance Condition contained in **Compliance Table 1.**

Access, Compliance Condition of Certification-1 (COM-1)

The CPM, responsible Energy Commission staff, and delegate agencies or consultants, shall be guaranteed and granted unrestricted access to the power plant site, related facilities, project-related staff, and the records maintained on site, for the purpose of conducting audits, surveys, inspections, or general site visits. Although the CPM will normally schedule site visits on dates and times agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time.

Compliance Record, COM-2

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

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

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

Compliance Verification Submittals, COM-3

Each condition of certification is followed by a means of verification. The verification describes the Energy Commission's procedure(s) to ensure post-certification compliance with adopted conditions. The verification procedures, unlike the conditions, may be modified as necessary by the CPM, in most cases without full Energy Commission approval.

Verification of compliance with the conditions of certification can be accomplished by:

1. reporting on the work done and providing the pertinent documentation in monthly and/or annual compliance reports filed by the project owner or authorized agent as required by the specific conditions of certification;
2. providing appropriate letters from delegate agencies verifying compliance;
3. Energy Commission staff audits of project records; and/or
4. Energy Commission staff inspections of mitigation or other evidence of mitigation.

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 [01-AFC-24(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.

Pre-Construction Matrix and Tasks Prior to Start of Construction COM-4

Prior to commencing construction a compliance matrix addressing only those conditions that must be fulfilled before the start of construction shall be submitted by the project owner to the CPM. This matrix will be included with the project owner's **first** compliance submittal , and shall be submitted prior to the first pre-construction meeting, if one is held. It will be in the same format as the compliance matrix referenced above.

Construction shall not commence until the pre-construction matrix is submitted, all pre-construction conditions have been complied with, and the CPM has issued a letter to the project owner authorizing construction. Various lead times (e.g., 30, 60, 90 days) for submittal of compliance verification documents to the CPM for conditions of certification are established to allow sufficient staff time to review and comment and, if necessary, allow the project owner to revise the submittal in a timely manner. This will ensure that project construction may proceed according to schedule.

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

Project owners frequently anticipate starting project construction as soon as the project is certified. In those cases, it may be necessary for the project owner to file compliance submittals prior to project certification if the required lead-time for a required compliance event extends beyond the date anticipated for start of construction. It is also important that the project owner understand that the submittal of compliance documents prior to project certification is at the owner's own risk. Any approval by Energy Commission staff is subject to change based upon the Final Decision

COMPLIANCE REPORTING

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms and conditions of the 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, COM-5

A compliance matrix shall be submitted by the project owner to the CPM along with each monthly and annual compliance report. The compliance matrix is intended to provide the CPM with the current status of all 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;
7. the compliance status of each condition (e.g., “not started,” “in progress” or “completed” (include the date); and
8. the project’s preconstruction and construction milestones, including dates and status (if milestones are required).

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

Monthly Compliance Report, COM-6

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and 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 conditions do not need to be included in the matrix after they have been reported as closed);
4. a list of conditions that 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 with conditions of certification;
9. a listing of the month's additions to the on-site compliance file;
10. any requests to dispose of items that are required to be maintained in the project owner's compliance file; and
11. a listing of complaints, notices of violation, official warnings, and citations received during the month, a description of the resolutions of any results complaints, and the status of any unresolved complaints.

Annual Compliance Report, COM-7

After construction is complete, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports. The reports are for each year of commercial operation and are due to the CPM each year at a date agreed to by the CPM. Annual Compliance Reports shall be submitted over the life of the project unless otherwise specified by the CPM. Each Annual Compliance Report shall identify the reporting period and shall contain the following:

1. an updated compliance matrix 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;
9. an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section]; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.

Construction And Operation Security Plan, COM-8

Prior to commencing construction, a site-specific Security Plan for the construction phase shall be developed and maintained at the project site. At least 60 days prior to the initial receipt of hazardous materials on-site, a site-specific Security Plan and Vulnerability Assessment for the operational phase shall be developed and maintained at the project site. The project owner shall notify the CPM in writing that the Plan is available for review and approval at the project site.

Construction Security Plan

The Construction Security Plan must address:

1. site fencing enclosing the construction area;
2. use of security guards;
3. check-in procedure or tag system for construction personnel and visitors;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
5. evacuation procedures.

Operation Security Plan

The Operations Security Plan must address:

1. permanent site fencing and security gate;

2. use of security guards;
3. security alarm for critical structures;
4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. evacuation procedures;
6. perimeter breach detectors and on-site motion detectors;
7. video or still camera monitoring system;
8. fire alarm monitoring system;
9. site personnel background checks; and.
10. site access for vendors and requirements for hazardous materials vendors to conduct personnel background security checks.

In addition, the project owner shall prepare a Vulnerability Assessment and implement site security measures addressing hazardous materials storage and transportation consistent with US EPA and US Department of Justice guidelines.

The CPM may authorize modifications to these measures, or may require additional measures depending on circumstances unique to the facility, and in response to industry-related security concerns.

Confidential Information, COM-9

Any information that 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, that 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, COM-10

Pursuant to the provisions of Fish and Game Code Section 711.4, the project owner shall pay a filing fee in the amount of $850. The payment instrument shall be provided to the Energy Commission's Project Manager (PM), not the CPM, at the time of project certification and shall be made payable to the California Department of Fish and Game. The PM 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, COM-11

Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering

with date and time stamp recording. All recorded inquiries shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:

[www.energy.ca.gov/sitingcases/power_plants_contacts.html].

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

In addition to the monthly and annual compliance reporting requirements described above, the project owner shall report and provide copies 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 (Attachment A).

FACILITY CLOSURE

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

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

CLOSURE DEFINITIONS

Planned Closure

A planned closure occurs 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.

Unplanned Temporary Closure

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

Unplanned Permanent Closure

An unplanned permanent closure occurs if the project owner closes the facility suddenly and/or unexpectedly, on a permanent basis. This includes unplanned closure where the owner remains accountable for implementing the on-site contingency plan. It can also include unplanned 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, COM-12

In order to ensure that a planned facility closure does not create adverse impacts, a closure process that provides for careful consideration of available options and applicable laws, ordinances, regulations, standards, and local/regional plans in existence at the time of closure, will be undertaken. To ensure adequate review of a planned project closure, the project owner shall submit a proposed facility closure plan to the Energy Commission for review and approval at least 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.

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

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

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

Unplanned Temporary Closure/On-Site Contingency Plan, COM-13

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

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

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

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

In addition, consistent with requirements under unplanned permanent closure addressed below, the nature and extent of insurance coverage, and major

equipment warranties must also be included in the on-site contingency plan. In addition, the status of the insurance coverage and major equipment warranties must be updated in the annual compliance reports.

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

If the CPM determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than twelve months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CPM within 90 days of the CPM's determination (or other period of time agreed to by the CPM).

Unplanned Permanent Closure/On-Site Contingency Plan, COM-14

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

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

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

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

CBO DELEGATION AND AGENCY COOPERATION

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

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

ENFORCEMENT

The Energy Commission's legal authority to enforce the terms and conditions of its Decision is specified in Public Resources Code sections 25534 and 25900. The Energy Commission may amend or revoke the certification for any facility, and may impose a civil penalty for any significant failure to comply with the terms or conditions of the Energy Commission Decision. The specific action and amount of any fines the Energy Commission may impose would take into account the specific circumstances of the incident(s). This would include such factors as the previous compliance history, whether the cause of the incident involves willful disregard of LORS, oversight, unforeseeable events, and other factors the Energy Commission may consider.
Moreover, to ensure compliance with the terms and conditions of certification and applicable LORS, 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 the interpretation of compliance with the requirements of this compliance plan. The project owner, the Energy Commission, or any other party, including members of the public, may initiate this procedure for resolving a dispute. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents.

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 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 that the Energy Commission 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 agencies with expertise in the subject area of concern, as necessary;
3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and
4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum

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 Energy Commission shall have the authority to consider all relevant facts involved and make any appropriate orders consistent with its jurisdiction (Cal. Code Regs., tit. 20, §§ 1232-1236).

POST CERTIFICATION CHANGES TO ENERGY COMMISSION DECISION

Amendments, Insignificant Project Changes and Verification Changes, COM-15

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 Energy 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, or 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 not 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

As provided in Title 20, California Code of Regulations, section 1770 (d), a verification may be modified by staff without requesting an amendment to the decision if the change does not conflict with the conditions of certification.

KEY EVENTS LIST

PROJECT: **Palomar Power Project**

DOCKET #: **01-AFC-24(C)**

COMPLIANCE PROJECT MANAGER:

EVENT DESCRIPTION	DATE
Certification Date/Obtain Site Control	
Online Date	
POWER PLANT SITE ACTIVITIES	
Start Site Mobilization	
Start Ground Disturbance	
Start Grading	
Start Construction	
Begin Pouring Major Foundation Concrete	
Begin Installation of Major Equipment	
Completion of Installation of Major Equipment	
First Combustion of Gas Turbine	
Start Commercial Operation	
Complete All Construction	
TRANSMISSION LINE ACTIVITIES	
Start T/L Construction	
SYNCHRONIZATION WITH GRID AND INTERCONNECTION	
COMPLETE T/L CONSTRUCTION	
FUEL SUPPLY LINE ACTIVITIES	
Start Gas Pipeline Construction and Interconnection	
COMPLETE GAS PIPELINE CONSTRUCTION	
WATER SUPPLY LINE ACTIVITIES	
START WATER SUPPLY LINE CONSTRUCTION	
COMPLETE WATER SUPPLY LINE CONSTRUCTION	

TABLE 1
COMPLIANCE SECTION
SUMMARY of GENERAL CONDITIONS OF CERTIFICATION

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
COM-1	4	Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-2	4	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-3	4	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether the condition was satisfied by work performed by the project owner or his agent.
COM-4	5	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until all of the following activities/submittals have been completed: • property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns; • a pre-construction matrix has been submitted identifying only those conditions that must be fulfilled before the start of construction; • all pre-construction conditions have been complied with; and • the CPM has issued a letter to the project owner authorizing construction.
COM-5	6	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
			report which includes the status of all compliance conditions of certification.
COM-6	6	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.
COM-7	7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.
COM-8	8	Security Plans	Prior to commencing construction, the project owner shall submit a Construction Security Plan. Prior to commencing operation, the project owner shall submit an Operation Security Plan.
COM-9	9	Confidential Information	Any information the project owner deems confidential shall be submitted to the Dockets Unit with an application for confidentiality.
COM-10	9	Dept of Fish and Game Filing Fee	The project owner shall pay a filing fee of $850 at the time of project certification.
COM-11	9	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COM-12	11	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least twelve months prior to commencement of a planned closure.

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
COM-13	12	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-14	13	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-15	15	Post-certification changes to the Decision	The project owner must petition the Energy Commission to delete or change a condition of certification, modify the project design or operational requirements and/or transfer ownership of operational control of the facility.

ATTACHMENT A

COMPLAINT REPORT/RESOLUTION FORM

PROJECT NAME: **PALOMAR POWER Project** AFC Number: **01-AFC-24**
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 Energy Commission requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct. Plant Manager's Signature: _____ Date:

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

IV. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the Palomar Energy Project consists of separate analyses that examine facility design, engineering, efficiency, and reliability of the project. These analyses include the onsite power generating equipment and project-related facilities (natural gas supply pipeline, wastewater supply and brine return pipelines).

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.[4] In considering the adequacy of the design plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes the identification of special design features that are necessary to deal with unique site conditions, which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 50, p. 5.1-1.)

Staff proposed several Conditions of Certification, which we have adopted, that establish a design review and construction inspection process to verify compliance with applicable design standards and special design requirements.[5]

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[4] Ex. 1, §§ 2.0, 4.0, 5.0, and 6.0, Appendices B–E, G; H, J, and K, Exs. 2A-2G; Exs. 3A-3B, and Exs. 4A-4B.

[5] Conditions of Certification **GEN-1** through **GEN-8**.

(Ex. 50, p. 5.1-4.) 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 design approval and construction actually begin. (*Id.* at p. 5.1-3.) Condition of Certification **GEN-1** incorporates this requirement.

Staff considered potential geological hazards and reviewed the preliminary project design with respect to site preparation and development; major project structures, systems and equipment; mechanical systems; electrical systems; and related facilities such as the natural gas pipeline, wastewater and brine return pipelines, and the transmission interconnection facilities. (Ex. 50, p. 5.1-2 et seq. Ex. 1, §§ 4.0 and 5.0, Appendices B-D and K; Exs. 2A-2G, 3A-3B, and 4A-4B.)

The project will implement site preparation and development criteria consistent with accepted industry standards. This includes design practices and construction methods for grading, flood protection, erosion control, site drainage, and site access. (Ex. 1, §§ 2.4 et seq. and 2.5 et seq. and Appendix D.1; Ex. 50, p. 5.1-2.) Condition **CIVIL-1** ensures that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production and facilities used for storage of hazardous or toxic materials. (Ex. 1, Figures 2.4-1 through 2.4-4, and Appendix D.) Condition **GEN-2** lists the major structures and equipment included in the initial engineering design for the project.

The power plant site is located in Seismic Zone 4, the highest level of potential ground shaking in California. (Ex. 1, Appendix D.2; Ex. 50, p. 5.1-3.) The 1998 CBC requires specific “lateral force” procedures for different types of structures to determine their seismic design. (*Ibid*.) 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)[6] for review and approval prior to the start of construction. (Ex. 50, p. 5.1-3.)

According to Staff, the mechanical systems for the project are designed to the specifications of applicable LORS. (Ex. 50, p. 5.2-1) Conditions **MECH**-1 through **MECH**-3 ensure the project will comply 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 D.5.) Condition **ELEC-1** ensures that design and construction of these electrical features will comply with applicable LORS.

The transmission facilities include a new 230 kV switchyard at the project site and a loop-in to the existing 230 kV Escondido-Sycamore transmission line along the western boundary of the site. (Ex. 1, § 2.) The design and construction of these facilities are described in the **Transmission System Engineering** section of this Decision. Conditions **TSE-1** through **TSE-8** ensure that the project's transmission facilities will comply with applicable LORS.

The evidence also addresses project closure. (Ex. 50, p. 5.1-4.) To ensure that decommissioning of the facility will conform with applicable LORS to protect the environment and public health and safety, the project owner shall submit a decommissioning plan, which is described in the general closure provisions of the Compliance Monitoring and Closure plan. *See* **General Conditions** in this Decision, *ante*.

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[6] The Energy Commission is the CBO for energy facilities certified by the Commission. We may delegate CBO authority to local building officials to carry out design review and construction inspections. When CBO duties are delegated to local authorities, the Commission requires a Memorandum of Understanding with the delegated CBO to assign the roles and responsibilities described in Conditions of Certification **GEN-1** through **GEN-8**. (Ex. 50, p. 5.1-4.)

Finally, the Conditions of Certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. These Conditions require approval of the CBO after appropriate inspections by qualified engineers. No element of construction may proceed without approval of the CBO. (Ex. 50, p. 5.1-4.)

FINDINGS AND CONCLUSIONS

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

1. The Palomar Energy Project 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 (LORS) set forth in the appropriate portions 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 **General Conditions,** included in a separate section of this Decision, establish requirements to be followed in the event of facility closure.

We therefore conclude that implementation of the Conditions of Certification listed below ensure that the Palomar Energy Project 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) and all other applicable engineering 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 in the **Transmission System Engineering** section of this document.

In the event that the initial engineering designs are submitted to the CBO when a successor to the 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 after receipt of the Certificate of Occupancy, the project owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the Certificate of Occupancy within 30 days of receipt from the CBO [1998 CBC, Section 109 – Certificate of Occupancy].

GEN-2 Prior to submittal of the initial engineering designs for CBO review, the project owner shall furnish to the CPM and to the CBO a schedule of facility design submittals, a Master Drawing List and a Master Specifications List. The schedule shall contain a list of proposed submittal packages of designs, calculations and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide specific packages to the CPM when requested.

Verification: At least 60 days (or project owner and CBO approved alternative timeframe) prior to the start of the PEP grading activities, the project owner shall submit to the CBO and to the CPM the schedule, the Master Drawing List and the Master Specifications List of documents to be submitted to the CBO for review and approval. These documents shall be the pertinent design documents for the major structures and equipment listed in Table 1 below. Major structures and equipment shall be added to or deleted from the Table only with CPM approval. The project owner shall provide schedule updates in the Monthly Compliance Report.

Table 1: Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	2
Combustion Turbine Generator Foundation and Connections	2
Steam Turbine (ST) Foundation and Connections	1
Steam Turbine Generator Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
HRSG Stack Foundation and Connections	2
CT Main Transformer Foundation and Connections	2
ST Main Transformer Foundation and Connections	1
CT Air Inlet Filter Foundation and Connections	2
Cooling Tower Structure, Foundation and Connections	1
Raw Water Storage Tank Structure, Foundations and Connections	1
Demineralized Water Storage Tank Structure, Foundation and Connections	1
RO Water Tank Structure, Foundation and Connections	1
Administration Building Structure, Foundation and Connections	1
Gas Compressor Building Structure, Foundation and Connections	1
Ammonia Storage Tank Foundation and Connections	1
Gas Metering Station Structure, Foundation and Connections	1
Switchyard Control Building Structure, Foundation and Connections	1
Water Treatment/Cooling Tower Chemicals/Electrical Equipment Building Structure, Foundation and Connections	1
Chemical Treatment Building Structure, Foundation and Connections	1
Electrical Control Room Building Structure, Foundation and Connections	1
Maintenance/Warehouse Building Structure, Foundation and Connections	1
Compressor Water Wash Skid Foundation and Connections	1
Ammonia Spill Impounding Area	1
Condensate Pumps Foundation and Connections	2
HRSG Boiler Feed-water Pumps Foundation and Connections	4
Circulating Water Pumps Foundation and Connections	2
Closed Cooling Water Pumps Foundation and Connections	2
Auxiliary Circulating Water Pumps Foundation and Connections	2
Closed Cooling Water Heat Exchangers Foundation and Connections	2
Gas Scrubber/Drains Tank Foundation and Connections	2
Air Compressor Skid Foundation and Connections	2
Water Wash Drains Tank Foundation and Connections	2
Potable Water Systems	1 Lot

Equipment/System	Quantity (Plant)
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Substation/Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 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], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

Verification: The project owner shall make the required payments to the CBO in accordance with the agreement between the project owner and the CBO. The project owner shall send a copy of the CBO's receipt of payment to the CPM in the next Monthly Compliance Report indicating that the applicable fees have been paid.

GEN-4 Prior to the start of the PEP grading activities, the project owner shall assign a California registered architect, structural engineer or civil engineer, as a resident engineer (RE), to be in general responsible charge of the project [Building Standards Administrative Code (Cal. Code Regs., tit. 24, § 4-209, Designation of Responsibilities)]. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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

The RE shall:

1. Monitor construction progress of work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all the facilities subject to CBO design review and inspection conforms in every material respect to the applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in the approved drawings and specifications when directed by the project owner or as required by conditions on the project;
4. Be responsible for providing the project inspectors and testing agency(ies) with complete and up-to-date set(s) of stamped drawings, plans, specifications and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and other engineers who have been delegated responsibility for portions of the project; and
6. Be responsible for notifying the CBO of corrective action or the disposition of items noted on laboratory reports or other tests as not conforming to the approved plans and specifications.

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

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

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

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

GEN-5 Prior to the start of the PEP grading activities, the project owner shall assign at least one of each of the following California registered

engineers to the project: A) a civil engineer; B) a soils engineer, or a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; and C) an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: D) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; E) a mechanical engineer; and F) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731, and 6736 require state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

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

The project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all responsible engineers assigned to the project [1998 CBC, Section 104.2, Powers and Duties of Building Official].

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

A: The civil engineer shall:

1. Review the Foundation Investigations Report, Geotechnical Report or Soils Report prepared by the soils engineer, the geotechnical engineer, or by a civil engineer experienced and knowledgeable in the practice of soils engineering;
2. Design, or be responsible for design, stamp, and sign all plans, calculations and specifications for proposed site work, civil works and related facilities requiring design review and inspection by the CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage

facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and

3. Provide consultation to the RE during the construction phase of the project and recommend changes in the design of the civil works facilities and changes in the construction procedures.

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

1. Review all the engineering geology reports;
2. Prepare the Foundation Investigations Report, Geotechnical Report or Soils Report containing field exploration reports, laboratory tests and engineering analysis detailing the nature and extent of the soils that may be susceptible to liquefaction, rapid settlement or collapse when saturated under load [1998 CBC, Appendix Chapter 33, Section 3309.5, Soils Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations];
3. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33; Section 3317, Grading Inspections; (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both, as set forth in the1998 CBC, Appendix Chapter 33; Section 3317.1, General); and
4. Recommend field changes to the civil engineer and RE.

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform with predicted conditions used as a basis for design of earthwork or foundations [1998 CBC, section 104.2.4, Stop orders].

C: The engineering geologist shall:

1. Review all the engineering geology reports and prepare final soils grading report; and
2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 1998 CBC, Appendix Chapter 33; Section 3317, Grading Inspections; (depending on the site conditions, this may be the responsibility of either the soils engineer or engineering geologist or both, as set forth in the1998 CBC, Appendix Chapter 33; Section 3317.1, General).

D: The design engineer shall:

1. Be directly responsible for the design of the proposed structures and equipment supports;
2. Provide consultation to the RE during design and construction of the project;
3. Monitor construction progress to ensure compliance with engineering LORS;
4. Evaluate and recommend necessary changes in design; and
5. Prepare and sign all major building plans, specifications and calculations.

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

F: The electrical engineer shall:

1. Be responsible for the electrical design of the project; and
2. Sign and stamp electrical design drawings, plans, specifications, and calculations.

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

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

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

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

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 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 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 [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and
4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

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 (or project owner and CBO approved alternative timeframe) prior to the start of an activity requiring special inspection, the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s), or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next Monthly Compliance Report.

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

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required [1998 CBC, Chapter 1, Section

108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

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

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. 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]. The project owner shall retain one set of approved engineering plans, specifications and calculations at the project site or at another accessible location during the operating life of the project [1998 CBC, Section 106.4.2, Retention of Plans].

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

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

1. Design of the proposed drainage structures and the grading plan;

2. An erosion and sedimentation control plan;

3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and

4. Soils report, Geotechnical Report or Foundation Investigations Report required by the 1998 CBC [Appendix Chapter 33, Section 3309.5, Soils

Engineering Report; Section 3309.6, Engineering Geology Report; and Chapter 18, Section 1804, Foundation Investigations].

Verification: At least 15 days (or project owner and CBO approved alternative timeframe) prior to the start of the PEP grading activities the project owner shall submit the documents described above to the CBO for design review and approval. In the next Monthly Compliance Report following the CBO's approval, the project owner shall submit a written statement certifying that the documents have been approved by the CBO.

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer or 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 24 hours, when earthwork and construction is stopped as a result of unforeseen adverse geologic/soil conditions. Within 24 hours of the CBO's approval to resume earthwork and construction in the affected areas, the project owner shall provide to the CPM a copy of the CBO's approval.

CIVIL-3 The project owner shall perform inspections in accordance with the 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 for which a grading permit is required shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO and the CPM [1998 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. 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 for review and approval. Within five days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following Monthly Compliance Report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage 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 of any major structure or component listed in **Table 1** of Condition of Certification **GEN-2**, above, the project owner shall submit to the CBO for design review and approval the proposed lateral force procedures for project structures and the applicable designs, plans and drawings for project structures. Proposed lateral force procedures, designs, plans and drawings shall be those for the following items (from **Table 1**, above):

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

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

The project owner shall:

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

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations and specifications [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 60 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 project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in Table 1 of Condition of Certification **GEN-2** above, 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 non-conforming 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 engineering LORS.

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 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 and the proposed corrective action to the CBO, with a copy of the transmittal letter to the CPM [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

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

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

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

MECH-1 The project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations for each plant major piping and plumbing system listed in Table 1, Condition of Certification **GEN 2**, above. Physical layout drawings and drawings not related to code compliance and life safety need not be submitted. The submittal shall also include the applicable QA/QC procedures. Upon completion of construction of any such major piping or plumbing system, the project owner shall request the CBO's inspection approval of said construction [1998 CBC, Section 106.3.2, Submittal Documents; Section 108.3, Inspection Requests; Section 108.4, Approval Required; 1998 California Plumbing Code, Section 103.5.4, Inspection Request; Section 301.1.1, Approval].

The responsible mechanical engineer shall stamp and sign all plans,drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be limited to:

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- Title 24, California Code of Regulations, Part 5 (California Plumbing Code);
- Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);
- Title 24, California Code of Regulations, Part 2 (California Building Code); and
- Specific City/County code.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency [1998 CBC, Section 104.2.2, Deputies].

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in Table 1, Condition of Certification **GEN-2** above,

the project owner shall submit to the CBO for design review and approval the final plans, specifications and calculations, including a copy of the signed and stamped statement from the responsible mechanical engineer certifying compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [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 project owner and CBO approved alternative timeframe) prior to the start of on-site fabrication or installation of any pressure vessel, the project owner shall submit to the CBO for design review and approval, the above listed documents, including a copy of the signed and stamped engineer's certification, with a copy of the transmittal letter to the CPM.

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

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

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

CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of said construction. The final plans, specifications and calculations shall include approved criteria, assumptions and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications and calculations conform with the applicable LORS [1998 CBC, Section 108.7, Other Inspections; Section 106.3.4, Architect or Engineer of Record].

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

ELEC-1 Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher, listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations [CBC 1998, Section 106.3.2, Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [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 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; and
   2. system grounding drawings.

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; and
7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:

1. Receipt or delay of major electrical equipment;
2. Testing or energization of major electrical equipment; and
3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of each increment of electrical construction, the project owner shall submit to the CBO for design review and approval the above listed documents. The project owner shall include in this submittal a copy of the signed and stamped statement from the responsible electrical engineer attesting compliance with the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

B. POWER PLANT EFFICIENCY

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

Pursuant to CEQA Guidelines, Staff assessed whether PEP's use of natural gas would result in (1) an adverse effect on local and regional energy supplies and resources; (2) the need for additional energy supply capacity; (3) noncompliance with existing energy standards; or (4) the wasteful, inefficient, and unnecessary consumption of fuel or energy. (Ex. 50, p. 5.3-2; 4/8/03 RT, p. 34.)

1. Potential Effects on Energy Supplies and Resources

Under normal operating conditions, the PEP will burn natural gas at a maximum rate of 88 million Btu per day lower heating value (LHV), which is based on 8 hours of baseload operation and 16 hours of peak load operation. (Ex. 50, p. 5.3-2; Ex. 1, § 2.4.5.) According to Staff, this is a substantial rate of energy consumption that could impact energy supplies or resources. (Ex. 50, p. 5.3-2; Tit. 14, Cal. Code of Regs., § 15000 et seq., Appendix F.)

2. Need for Additional Energy Supplies or Capacity

Natural gas for PEP will be delivered via the existing SDG&E pipeline infrastructure, which is connected to the SoCalGas system that delivers gas to

southern California from intrastate pipelines.[7] (Ex. 1, § 4.3.4.) Natural gas availability in California is affected more by pipeline system capacity than by shortfalls in production. During the winter of 2000-2001, SDG&E exceeded its internal capacity to serve load on several occasions. (*Ibid*.) In this regard, the San Diego County Air Pollution Control District raised concerns about potential gas delivery curtailment events, which could trigger oil burning by certain electric generators (EGs) in the SDG&E service area and result in significant impacts to ambient air quality.[8] (Ex. 12.) Sempra contracted with SDG&E to study the ability of its gas delivery system to meet the needs of PEP given specific assumptions regarding future loads. (Ex. 1, Appendix K [Gas System Capacity Study].) The Study modeled peak demand at all the EGs served by SDG&E to determine whether gas deliveries to PEP would result in curtailment of deliveries to other EG customers. The Study found that operation of PEP combined with operation of other EGs in the SDG&E system would not likely result in any significant gas delivery curtailments. (*Ibid*.)

According to Sempra, two recent developments have improved SDG&E's gas delivery system. Completion of the Line 6900 Expansion Project has expanded delivery capacity and completion of Sempra's Bajanorte Pipeline Project has reduced load at the southern end of the system. (Ex. 12.) Given the system improvements identified by Sempra, Staff concluded that SDG&E is capable of delivering the required quantity of natural gas to PEP. (Ex. 50, p. 5.3-3.) Assuming the existing availability of natural gas and conveyance systems remain stable for the life of the project, it is highly unlikely that PEP would require

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[7] *See* "Natural Gas Infrastructure Issues," California Energy Commission Final Report, October 2001 (Publication No. P200-01-001) and on our Website at:
http://www.energy.ca.gov/reports/2001-10-16_200-01-001.PDF
See also "Natural Gas Supply and Infrastructure Assessment," Energy Commission Staff Report, December 2002 (Publication No. P700-02-006F) and on our Website at:
http://www.energy.ca.gov/reports/2002-12-12_700-02-006F.PDF

[8] The California Public Utilities Commission (CPUC) recently conducted extensive proceedings on this issue. (CPUC Decision 02-11-073, Nov. 21, 2002 [Order Instituting Investigation (OII) 00-11-002, filed Nov. 2, 2000].)

development of new fuel supply sources. (*Ibid.*) *See also* **Power Plant Reliability**.

3. Compliance with Energy Standards

No standards apply to the efficiency of PEP or other non-cogeneration projects. (Ex. 50, p. 5.3-3.) *See* Public Resources Code section 25134.

4. Alternatives to Wasteful or Inefficient Energy Consumption

Applicant provided information on alternative generating technologies, which were reviewed by Staff. (Ex. 1, § 3.11.3 et seq.; Ex. 50, p. 5.3-5; *See* the **Alternatives** section of this Decision.) Given the project objectives, location, and air pollution control requirements, Staff concluded that only natural gas-burning technologies are feasible. (*Ibid*.)

Under expected project conditions, electricity will be generated at a full load efficiency of approximately 50 percent LHV without duct firing and 49 percent with duct firing. (Ex. 35, Rowley, Efficiency and Reliability, p. 5.) Staff found that PEP compared favorably with the average fuel efficiency of a typical older baseload plant, which operates at approximately 35 percent LHV. (Ex. 50, p. 5.3-2.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by selection of generating equipment. (Ex. 50, p. 5.3-4.) PEP is configured as a two-on-one combined cycle power plant, in which electricity will be produced by two gas turbines and additionally by a reheat steam turbine that operates on heat energy recuperated from gas turbine exhaust. By recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of a combined cycle power plant is considerably increased compared with either a gas turbine or a steam

turbine operating alone. Project efficiency is also enhanced by use of inlet air evaporative coolers, HRSG duct burners, three-pressure HRSG and steam turbine units, and the circulating water system. Staff concluded that the proposed two-on-one configuration is well suited to the large, steady loads expected of a baseload plant. (*Ibid.*)

Staff also noted that the two-train CTG/HRSG configuration allows for high efficiency during unit turndown because one train can be shutdown, while the other train can continue to operate fully loaded instead of running both trains at an inefficient 50 percent load. (Ex. 50, p. 5.3-4.)

According to Staff, modern gas turbines represent the most fuel-efficient electric generating technology available. The General Electric GE 7FA combustion turbine generator selected by Sempra is nominally rated at 550 MW with a 56.5 percent efficiency LHV at ISO conditions. (Ex. 50, p. 5.3-5.) Other F-class turbines, such as the Alstom Power ABB KA24 and Siemens-Westinghouse 501F, may have slightly higher efficiency ratings but the difference in actual operating efficiency is insignificant. New gas turbine designs are available, such as the G-class and H-class machines that claim higher fuel efficiency; however, the lack of a proven performance record for these prototypes led Staff to conclude that Sempra's selection of the well-known F-class machine is the more reasonable choice. (*Ibid.*)

Staff also analyzed whether PEP would result in cumulative energy consumption impacts. Inclusion of PEP in the SDG&E system along with the existing CalPeak and RAMCO units nearby could potentially increase fuel consumption; however, PEP is a highly efficient generator that will use less fuel for higher output and would not, therefore, impact the cumulative amount of gas consumed for power generation. In addition, development of PEP in conjunction with development of the Otay Mesa project in the south would not result in cumulative impacts since Otay Mesa will draw gas from the southern end of the system where the

Bajanorte Pipeline has increased capacity in that area. Thus, PEP is not expected to result in cumulative impacts on fuel capacity. (Ex. 50, p. 5.3-6.)

FINDINGS AND CONCLUSIONS

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

1. PEP will not require the development of new fuel supply resources since natural gas resources exceed the fuel requirements of the project.

2. Operation of PEP combined with operation of other electric generators in the SDG&E system would not likely result in any significant gas delivery curtailments.

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

4. The project configuration and choice of generating equipment represent the most feasible combination to achieve project objectives.

5. The project design, incorporating a two-on-one power train and employing the highly efficient F-class turbine, will allow the power plant to generate electricity at full load with optimal efficiency.

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

The Commission therefore concludes that PEP 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 power plant, including provisions for emergency operation and shutdown. [(Pub. Resources Code, § 25520(b).] There are currently no laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation, except for the Generation Maintenance Program established by the California Independent System Operator (Cal-ISO).[9] (Ex. 50, p. 5.4-1.). Under our statutory mandate, 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).]

SUMMARY AND DISCUSSION OF THE EVIDENCE

According to Staff, a power plant project is acceptable if it does not degrade the reliability of the utility system to which it is connected. This is likely if the project exhibits reliability at least equal to that of other power plants on that system. (Ex. 50, p. 5.4-1.)

Staff examined the project's design criteria to determine whether the PEP will be built in accordance with typical power industry norms for reliable electricity generation. Staff believes that reliable operation is a combination of factors, i.e, the power plant should be available when called upon to operate and it should be expected to operate for extended periods without shutdown for maintenance or repairs. (Ex. 50, p. 5.4-3 et seq.) According to Staff, project safety and reliability

[9] Cal-ISO's *Maintenance Performance Standards and Criteria* identify the maintenance standards expected of generators and provide a benchmark against which Generating Asset Owners and Cal-ISO can judge the adequacy of maintenance programs used at each generating facility. (Ex. 50, p. 5.4-1.) Specifically, Cal-ISO requires generators selling ancillary services and holding reliability must-run contracts to: (1) file periodic reports on reliability; (2) report all outages and their causes; (3) describe all remedial actions taken during outages; and (4) schedule all planned maintenance outages with Cal-ISO. (*Id.* at p. 5.4-2.)

are achieved by ensuring equipment availability, plant maintainability, fuel and water availability, and adequate resistance to natural hazards. *(Ibid*.)

1. Equipment Availability

The project owner 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, Appendix D; Ex. 35, Rowley, Efficiency and Reliability, p. 5.) Condition of Certification **MECH-1** requires the project owner to include applicable QA/QC procedures in the final design specifications for the project. Qualified vendors of plant equipment and materials will be selected based on past performance and independent testing contracts to ensure acquisition of reliable equipment. (Ex. 1, § 4,3; Ex. 50, p. 5.4-3.)

2. Plant Maintainability

The evidentiary record indicates that project design includes sufficient redundancy of equipment to ensure continued operation in the event of equipment failure. (Ex. 50, p. 5.4-3; Ex. 1, §§ 4.3.3, 6.3.1.2, Table 4.3-1, Appendix D.) The project's two power trains (i.e,. two sets of CTGs/HRSGs) provide inherent reliability allowing the facility to operate at reduced output in the event that a non-redundant component in one train should fail. (Ex. 35, Rowley, Efficiency and Reliability, pp. 5-6.) Project maintenance will be typical of the industry, including preventive and predictive techniques. Any necessary maintenance outages will be planned for periods of low electricity demand. (Ex. 50, p. 5.4-4; Ex. 1, § 4.3.1 et seq,)

3. Fuel and Water Availability

Reasonable long-term availability of fuel and water is necessary to ensure project reliability. As discussed in the section on **Power Plant Efficiency**, SDG&E will supply natural gas to the PEP through the existing supply piping near the project site, including a 2,600-foot upgrade to relieve a bottleneck about one mile from the site. The record indicates that SDG&E's natural gas distribution system can provide adequate supply and pipeline capacity to meet project needs. (Ex. 50, p. 5.4-4; see also, Ex. 1, § 4.3.4, Appendix K.)

The San Diego Air Pollution Control District expressed concern that if the SDG&E system does not have sufficient capacity to deliver gas to all electric generators in the system, there is potential for gas curtailment, which could result in some generators switching to oil firing and causing significant impacts on ambient air quality. Sempra provided evidence that in the last year, SDG&E increased gas delivery capacity with completion of its Line 6900 Expansion project and reduced load demands in the southern end of the system when Sempra's Bajanorte Pipeline project began operation. (Ex. 12; Ex. 1, Appendix K.) Thus, we find that potential gas curtailment events in the San Diego region due to the PEP's gas demand would be unlikely to occur. (Ex. 50, p. 5.4-4.)

The project will obtain reclaimed water from the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF) Water Reclamation Plant for industrial uses (e.g., circulating water for cooling and stored firewater). Potable water for domestic uses will be provided by the Rincon del Diablo Municipal Water District. These sources represent a reliable supply of water to meet the project's operating needs. (Ex. 50, p. 5.4-5; Ex. 1, Appendix G: "Will Serve Letter"; *See* the **Soil and Water Resources** section of this Decision.)

4. Natural Hazards

The site is located in Seismic Zone 4 where several active earthquake faults create the potential for seismic shaking to threaten reliable operation. (Ex. 50, p. 5.4-5; *See* **Geology and Paleontology**.) The PEP will be designed and constructed to comply with current applicable LORS for seismic design (specifically, California Building Code requirements) that improve seismic stability compared with older power plants.[10] The Conditions of Certification in the **Facility Design** section of this Decision ensure that the project will conform with seismic design LORS. There are no special concerns about flooding events that would affect reliability. Site grading contours will ensure control of stormwater drainage and channeling of runoff flows. (Ex. 50, p. 4.9-15; *See* **Soil and Water Resources**.)

5. Availability Factors

Sempra predicts the project will have an annual availability factor of 92 percent. (Ex. 35, Rowley, Efficiency and Reliability, p. 5; Ex. 1, § 4.3.1.) Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council (NERC), show an availability factor of 91.49 percent for combined cycle units of all sizes. (Ex. 50, p. 5.4-5.) According to Staff, the project's predicted 92 percent availability factor is reasonable since the GE 7 FA turbine chosen by Sempra has been on the market for several years and exhibits typically high availability and reliability compared with the other generators included in NERC statistics. (Ex. 50, p. 5.4-6.) Staff also notes that the project's distributed control and monitoring systems include redundant computer-based safeguards that ensure reliable operation consistent with industry norms. (*Ibid*.; Ex. 1, § 4.3.1; Appendix D.4.)

[10] 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. 50, p. 5.4-5.)

FINDINGS AND CONCLUSIONS

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

1. The Palomar Energy Project (PEP) will ensure equipment availability by implementing quality assurance/quality control (QA/QC) programs and by providing adequate redundancy of auxiliary equipment to prevent unplanned off-line events.

2. PEP's project design incorporates distributed control and monitoring systems to provide inherent reliability.

3. Planned maintenance outages will be scheduled during times of low electricity demand.

4. There is adequate water availability for project operations.

5. The project is designed to withstand seismic shaking that would compromise project safety and reliability in accordance with Seismic Zone 4 requirements of the California Building Code.

6. The project's estimated 92 percent availability factor is consistent with industry norms for power plant reliability.

7. The SDG&E natural gas distribution system has access to adequate natural gas supply and pipeline capacity to meet the project's needs.

8. Potential gas curtailment events in the San Diego region due to the PEP's gas demand are unlikely to occur.

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

D. TRANSMISSION SYSTEM ENGINEERING

The Commission's jurisdiction includes "…any electric power line carrying electric power from a thermal power plant …to a point of junction with an interconnected transmission system." (Pub. Resources Code, § 25107.) The Commission assesses the engineering and planning design of new transmission facilities associated with a proposed project to ensure compliance with applicable law. The record indicates that the Applicant in this case accurately identified all interconnection facilities for Commission review.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Palomar Energy Project consists of a nominal 550 MW natural gas-fired, combined cycle power plant. The plant's two combustion turbine-generators (CTGs) and one steam turbine generator (STG) will generate power at 18 kV. Each generator will be connected to a dedicated 18/230 kV step-up transformer, which in turn will be connected to a new on-site 230 kV switchyard.[11] The project does not require construction of any new transmission lines since the PEP switchyard will be connected to the SDG&E transmission system via a loop-in to the existing Escondido-Sycamore 230 kV transmission line, which runs along the western boundary of the site. (Ex. 35, Rowley, TSE, p. 3; Ex. 50, p. 5.5-3.)

The lattice towers that support the Escondido-Sycamore 230 kV circuit also support a second 230 kV circuit (i.e., the line is of double circuit construction). The alignment of this 230 kV double circuit will be swapped with the alignment of an existing 138 kV circuit (both alignments are located within the existing 200-foot wide SDG&E right-of-way that extends along the west boundary of the project site). This swap will position the Escondido-Sycamore 230 kV circuit immediately adjacent to the power plant site, so that the circuit can be looped

[11] The 230 kV switchyard is initially configured as a five-breaker ring bus, and will include space for expansion to a full breaker and a half configuration with space for an additional bay. (Ex. 50, p. 5.5-3.)

into the plant switchyard without crossing other overhead lines. As part of the swap, the existing 230 kV and 138 kV lattice towers will be replaced with modern steel monopoles of uniform aesthetic appearance. In addition, several wooden pole-supported 69 kV circuits located on or adjacent to the project site will be undergrounded to provide more space on the site, avoid overhead line crossings and improve aesthetic appearance. (Ex. 35, Rowley, TSE, pp. 3-4; Ex. 50, p. 5.5-3.)

A Detailed Facilities Study (DFS) and subsequent Congestion Sensitivity Analysis prepared by SDG&E, as well as studies by the Cal-ISO, demonstrate that with completion of certain 69 kV upgrades already planned by SDG&E and installation of two Special Protection Schemes, operation of the PEP will not cause any overloads or other nonconformities with system reliability criteria. (Ex. 9; Ex. 35, Rowley, TSE, p. 4; Ex. 13; Ex. 19; Ex. 27.)

The planned SDG&E 69 kV upgrades (SDG&E Expansion Plan Project 02161) involve reconductoring the Miramar-Scripps 69 kV line and construction of a new 69 kV line between the Miramar and Sycamore 69 kV substations to relieve contingency and baseload overloads on this 69 kV pathway. While Project 02161 is independent of the PEP, the Cal-ISO believes these upgrades are necessary to accommodate the full output of the new power plant. (Ex. 50, p. 5.5-7; Ex. 27.)

Cal-ISO also found the two Special Protection Schemes (SPS) are necessary to mitigate potential overloads as follows:

- One SPS would drop Palomar Energy generation in case of emergency overloading of the Escondido-Esco 69 kV line during simultaneous outages of the Poway-Pomerado 69 kV circuit and the Goal Line generating plant.
- The second SPS would drop Palomar Energy generation in case of emergency overloading of the Bernardo-Felicita 69 kV tap and/or Escondido-Esco 69 kV line during outages of the Palomar-Sycamore 230 kV circuit, Escondido Olivenhain 69 kV circuit, or Escondido-Esco 69 kV circuit.

The studies prepared by SDG&E and Cal-ISO also included evaluation of scenarios with and without the proposed Valley-Rainbow 500 kV line. (Ex. 13; Ex. 19; Ex. 27; Ex. 35, Rowley, TSE, p. 4.) The studies demonstrate that, with completion of the 69 kV improvements described above, the PEP will not cause any overloads or other nonconformities with system reliability criteria, regardless of whether the Valley-Rainbow project is constructed. With the PEP in service, transmission facility loadings are generally lower without the Valley-Rainbow project than with it. As a result, the studies determined that the second SPS would not be required if Valley-Rainbow is not constructed. (*Ibid*.; Ex. 50, pp. 5.5-6 and 5.5-7.)

Other pertinent conclusions of the DFS include voltage deviation results, which indicate no significant differences between pre-project and post-project voltage performances. (Ex. 50, p. 5.5-5; Ex. 4.) The transient stability study indicated that the PEP would not adversely affect SDG&E or WSCC system stability. The short circuit study considered three-phase and single line-to-ground faults with and without the PEP and concluded that the project would not cause breaker fault duty ratings to be exceeded. (Ex. 50, p. 5.5-6; Ex. 4; Ex. 9.)

Cal-ISO granted contingent approval to connect the PEP to the SDG&E grid upon the following conditions: (1) that SDG&E's Project 02161 upgrades are installed before PEP begins operation; and (2) that the SPS mitigation measures identified in the DFS are included in project design and implementation. (Ex. 27.) Sempra has agreed to these conditions. (Ex. 35, Rowley, TSE, pp. 4-5.) Condition of Certification **TSE-5f** requires the project owner to submit a final DFS and an executed Facility Interconnection Agreement with SDG&E, which must include a description of the system upgrades and the SPS mitigation measures.

Staff reviewed the proposed engineering design for the transmission facilities and determined that the project would comply with standard industry requirements. (Ex. 50, p. 5.5-3.) Conditions of Certification **TSE-1** through **TSE-8** describe the design, construction, and operation of the new facilities and ensure that the

project will conform with applicable laws, ordinances, regulations, and standards (LORS).

FINDINGS AND CONCLUSIONS

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

1. The Palomar Energy Project (PEP) will interconnect with the SDG&E grid via a loop-in from its new on-site 230 KV switchyard to the existing SDG&E Escondido-Sycamore 230 kV transmission line adjacent to the project site.

2. No new transmission lines are required for the project.

3. A Detailed Facilities Study (DFS) and subsequent Congestion Sensitivity Analysis prepared by SDG&E, as well as studies by Cal-ISO, indicate that PEP will not cause overloads or other nonconformities with system reliability criteria if SDG&E completes certain planned 69 kV upgrades and PEP installs two Special Protection Schemes (SPS) to mitigate potential system overloads.

4. The studies prepared by SDG&E and Cal-ISO evaluated scenarios with and without the proposed Valley-Rainbow 500 kV line and determined that, upon completion of the planned 69 kV upgrades, the project would not cause overloads or nonconformities with reliability criteria regardless of whether the Valley-Rainbow line is constructed.

5. Cal-ISO's final approval of the project's interconnection to the SDG&E grid is contingent upon SDG&E's completion of the planned upgrades and the project's installation of the two SPS.

6. The project owner will submit a Final DFS and Facility Interconnection Agreement incorporating the mitigation measures identified by Cal-ISO.

7. The Conditions of Certification ensure that the transmission interconnection facilities will be designed, constructed, and operated in a manner consistent with all applicable laws, ordinances, regulations, and standards (LORS).

The Commission therefore concludes that implementation of the measures specified in the Conditions of Certification listed below will ensure compliance with all applicable laws, ordinances, regulations, and standards (LORS) related to transmission system engineering as identified in **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall furnish to the CPM and to the CBO a schedule of transmission facility design submittals, a Master Drawing List, a Master Specifications List, and a Major Equipment and Structure List. The schedule shall contain a description and list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Commission staff, the project owner shall provide designated packages to the CPM when requested.

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

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

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; and D) a mechanical engineer. (Business and Professions Code sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California.)

The tasks performed by the civil, mechanical, electrical or design engineers may be divided between two or more engineers, as long as each engineer is responsible for a particular segment of the project (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer. The civil, geotechnical or civil and design engineer assigned in conformance with Facility Design Condition **GEN-5**, may be responsible for design and review of the TSE facilities.

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

The electrical engineer shall:

1. Be responsible for the electrical design of the power plant switchyard, outlet and termination facilities; and

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

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications and registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within 5 days of the approval.

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has 5 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 5 days of the approval.

TSE-3 The project owner shall keep the CBO informed regarding the status of engineering design 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 become a controlled document and shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification.

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM which include the documentation of any discrepancies identified by the project owner. 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 5 days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.

TSE-4 For the power plant switchyard, outlet line and termination, the project owner shall not begin any increment of construction until plans for that increment have been approved by the CBO. These plans, together with design changes and design change notices, shall remain on the site for one year after completion of construction. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS. The following activities shall be reported in the Monthly Compliance Report:

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

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

Verification: At least 30 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of each increment of construction, the project owner shall submit to the CBO for review and approval the final design plans, specifications and calculations for equipment and systems of the power plant switchyard, outlet line and termination, including a copy of the signed and stamped statement from the responsible electrical engineer attesting to compliance with the applicable LORS, and send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders," National Electric Code (NEC) and related industry standards.

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

c) Outlet line crossings and line parallels with transmission and distribution facilities shall be coordinated with the transmission line owner and comply with the owner's standards.

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

e) Termination facilities shall comply with applicable SGD&E interconnection standards.

f) The project owner shall provide:

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

   ii) Executed Facility Interconnection Agreement.

Verification: At least 60 days prior to the start of construction of transmission facilities (or a lessor number of days mutually agreed to by the project owner and CBO), the project owner shall submit to the CBO for approval:

a) Design drawings, specifications and calculations conforming with CPUC General Order 95 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders," NEC, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.

b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[12] and a statement signed and sealed by the registered engineer in

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

responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders," NEC, applicable interconnection standards, and related industry standards.

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

d) The DFS operational mitigation measures, SPS, executed Facility Interconnection Agreement and Verification of Cal-ISO Notice of Synchronization shall be provided concurrently to the CPM and CBO. Substitution of equipment and substation configurations shall be identified and justified by the project owner for CBO approval.

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

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

TSE-7 The project owner shall provide the following Notice to the Cal-ISO prior to synchronizing the facility with the California Transmission system:

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

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

Verification: The project owner shall provide copies of the Cal-ISO letter to the CPM when it is sent to the Cal-ISO one week prior to initial synchronization with the grid. The project owner shall contact the Cal-ISO Outage Coordination

Department, Monday through Friday, between the hours of 0700 to 1530 at (916) 351-2300 at least one business day prior to synchronizing the facility with the grid for testing. A report of conversation with the Cal-ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California transmission system for the first time.

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

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

a) "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in responsible charge. A statement attesting to conformance with CPUC GO-95 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders," and applicable interconnection standards, NEC, related industry standards, and these conditions shall be provided concurrently.

b) An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in responsible charge or acceptable alternative verification. "As built" drawings of the mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made available, if requested, for CPM audit as set forth in the Compliance Monitoring Plan.

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

DEFINITION OF TERMS

AAC — All Aluminum conductor.

Ampacity — Current-carrying capacity, expressed in amperes, of a conductor at specified ambient conditions, at which damage to the conductor is nonexistent or deemed acceptable based on economic, safety, and reliability considerations.

Ampere — The unit of current flowing in a conductor.

Bundled — Two wires, 18 inches apart.

Bus — Conductors that serve as a common connection for two or more circuits.

Conductor — The part of the transmission line (the wire) which carries the current.

Congestion Management
Congestion management is a scheduling protocol, which provides that dispatched generation and transmission loading (imports) will not violate criteria.

Emergency Overload
See Single Contingency. This is also called an L-1.

Kcmil or kcm
Thousand circular mil. A unit of the conductor's cross sectional area, when divided by 1,273, the area in square inches is obtained.

Kilovolt (kV)
A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground.

Loop — An electrical cul de sac. A transmission configuration which interrupts an existing circuit, diverts it to another connection and returns it back to the interrupted circuit, thus forming a loop or cul de sac.

Megavar — One megavolt ampere reactive.

Megavars Mega-volt-Ampere-Reactive. One million Volt-Ampere-Reactive. Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system.

Megavolt ampere (MVA)
A unit of apparent power, equals the product of the line voltage in kilovolts, current in amperes, the square root of 3, and divided by 1000.

Megawatt (MW)
A unit of power equivalent to 1,341 horsepower.

Multiple Contingencies
A condition that occurs when more than one major transmission element (circuit, transformer, circuit breaker, etc.) or more than one generator is out of service

Normal Operation/ Normal Overload
When all customers receive the power they are entitled to without interruption and at steady voltage, and no element of the transmission system is loaded beyond its continuous rating.

N-1 Condition
See Single Contingency.

Outlet Transmission facilities (circuit, transformer, circuit breaker, etc.) linking generation facilities to the main grid.

Power Flow Analysis
A power flow analysis is a forward looking computer simulation of essentially all generation and transmission system facilities that identifies overloaded circuits, transformers and other equipment and system voltage levels.

Reactive Power
Reactive power is generally associated with the reactive nature of motor loads that must be fed by generation units in the system. An adequate supply of reactive power is required to maintain voltage levels in the system.

Remedial Action Scheme (RAS)
A remedial action scheme is an automatic control provision, which, for instance, will trip a selected generating unit upon a circuit overload.

SF6 Sulfur hexafluoride is an insulating medium.

Single Contingency
Also known as emergency or N-1 condition, occurs when one major transmission element (circuit, transformer, circuit breaker, etc.) or one generator is out of service.

Solid dielectric cable
Copper or aluminum conductors that are insulated by solid polyethylene type insulation and covered by a metallic shield and outer polyethylene jacket.

Switchyard A power plant switchyard (switchyard) is an integral part of a power plant and is used as an outlet for one or more electric generators.

Thermal rating
See ampacity.

TSE Transmission System Engineering.

Undercrossing
A transmission configuration where a transmission line crosses below the conductors of another transmission line, generally at 90 degrees.

Underbuild
A transmission or distribution configuration where a transmission or distribution circuit is attached to a transmission tower or pole below (under) the principle transmission line conductors.

E. TRANSMISSION LINE SAFETY AND NUISANCE

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

Summary and Discussion of the Evidence

1. Description of Transmission Lines

The PEP will interconnect to the SDG&E grid via loop-in from the new 230 kV switchyard to the existing Escondido-Sycamore 230 kV transmission line adjacent to the site. No new transmission lines are required. (Ex. 50, p. 4.11-8.) According to Staff, the existing 230 kV line was designed and built according to standard SDG&E guidelines and will continue to be maintained according to SDG&E practices, reflecting compliance with applicable health and safety LORS. (*Ibid*.)

2. Potential Impacts

a. Electric and Magnetic Field Exposure

The possibility of deleterious health effects from exposure to electric and magnetic fields (EMF) has raised public health concerns about living near high-voltage lines.[12] (Ex. 50, p. 4.11-5.) Potential long-term residential exposure is not an issue in this case, however, since there are no residences along the Escondido-Sycamore line. The PEP site is 1,800 feet from the nearest residence, which is sufficiently distant from the switchyard loop-in to preclude

[12] While scientific research has not established a definitive correlation between EMF exposure and adverse health effects, the potential for EMF-related health hazards remains at issue. In this regard, the CPUC requires the regulated utilities, including SDG&E to incorporate EMF-reducing measures in the design, construction, and maintenance of new transmission facilities and to operate existing facilities in accordance with those measures. (Ex. 50, p. 4.11-5 et seq.)

EMF exposure. The only EMF exposure of potential significance would be short-term on-site exposure to plant workers or visitors at the site. (*Id.* at pp. 4.11-7 and 4.11-10.) According to Staff, such short-term exposure has not been established as posing a significant health risk. (*Ibid*.)

The existing Escondido-Sycamore 230 kV line incorporates standard SDG&E measures to reduce EMF. (Ex. 50, p. 4.11-10.) Condition of Certification **TLSN-1** requires the project owner to provide data necessary to compare the resulting EMF intensity measurements within the project's transmission corridor with fields from SDG&E lines of the same voltage and current-carrying capacity. Staff asserts that it is the similarity in magnitude that would constitute compliance with CPUC policy on line field management. Condition **TLSN-1** will ensure that the project's interconnection to the SDG&E transmission system does not compromise the safety of the existing line. (Ex. 50, pp. 4.11-10 and 4.11-11.)

b. Shocks, Aviation Hazards, Noise, Radio Communication

Since the existing line complies with health and safety LORS and no new transmission lines are required by the project, no significant project-related impacts are expected to result from hazardous shocks, nuisance shocks, aviation hazards, audible noise, or interference with radio frequency communication. (*Id*. at p. 4.11-8; Ex. 35, Rowley, TSE, p. 4.)

c. Cumulative Impacts

The Escondido-Sycamore 230 kV line shares the transmission line corridor with seven other lines with voltages of 138 kV and 69 kV. Potential magnetic field increases from transmitting project-related power could occur variously within this shared corridor and the rest of the SDG&E grid. (Ex. 50, p. 4.11-7.) Staff expects any contribution to cumulative area exposure should reflect compliance with CPUC requirements. The actual contribution will be assessed from results

of the field strength measurements specified in Condition **TLSN-1**. (*Id*. at p. 4.11-9.)

FINDINGS AND CONCLUSIONS

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

1. The PEP will interconnect to the SDG&E's electric grid via loop-in from the new on-site 230 kV switchyard to SDG&E's existing 230 kV Escondido-Sycamore transmission line adjacent to the site.

2. The existing transmission line complies with existing LORS for public health and safety.

3. The existing transmission line incorporates standard EMF-reducing measures established by SDG&E.

4. The project owner will conduct field intensity measurements after energization to assess EMF contributions from the project-related current flow.

5. The project will not result in significant adverse impacts to public health and safety nor cause impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

We therefore conclude that implementation of the Condition of Certification, below, will ensure that the project complies 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.

CONDITION OF CERTIFICATION

TLSN-1 The project owner shall utilize a qualified individual or individuals to measure the strengths of the line electric and magnetic fields as currently encountered on site and within the corridor of the 230 kV line to be used for the proposed project. These fields shall also be measured after energization to allow for assessment of the contributions from the project-related current flow. These field strength measurements shall be made according to IEEE measurement protocols at representative points

(on-site and along the line route) necessary to identify the maximum area field exposures possible during project operations. Corrective action, if necessary, shall be based upon the results of these measurements.

Verification: The project owner shall file copies of the pre- and post-energization measurements with the CPM within 30 days after completion. The post-energization measurements shall be initiated no later than 60 days from the start of commercial operations. Any necessary corrective measures shall be approved by the CPM.

VI. PUBLIC HEALTH AND SAFETY ASSESSMENT

Operation of the Palomar Energy Project 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. In consultation with the local air pollution control district, the Commission determines whether the project will likely conform with applicable laws, ordinances, regulations and standards (LORS), whether it will likely result in significant air quality impacts, including violations of ambient air quality standards, and whether the project's proposed mitigation measures will likely reduce potential impacts to insignificant levels. (Ex. 50, p. 4.1-1).

National ambient air quality standards (NAAQS) have been established for seven 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), particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). The review of potential impacts also includes the precursor pollutants for ozone, which are nitrogen oxides (NO_x) and volatile organic compounds (VOC), and the precursors for PM_{10} and $PM_{2.5}$, which are primarily NO_x, sulfur oxides (SO_x), and ammonia (NH_3). (Ex. 1, Section 5.2.1.3.)

The federal Clean Air Act[13] requires new major stationary sources of air pollution to comply with federal requirements in order to obtain authority-to-construct permits. The U.S. Environmental Protection Agency (U.S. EPA), which administers the Clean Air Act, has designated all areas of the United States as attainment/unclassifiable (air quality better than the NAAQS or unable to determine) or nonattainment (worse than the NAAQS) for criteria air pollutants, with the exception of $PM_{2.5}$, for which attainment classifications have not yet been designated. (Ex. 50, pp. 4.1-1 et seq.)

There are two major components of air pollution law: New Source Review (NSR) for evaluating pollutants that violate federal standards and Prevention of Significant Deterioration (PSD) to evaluate those pollutants that do not violate federal standards. Enforcement of NSR and PSD rules is typically delegated to local air districts that are established by federal and state law; in this case, the San Diego Air Pollution Control District (Air District or SDAPCD). (Ex. 50, p. 4.1-2.) The project is also subject to the federal New Source Performance Standards (NSPS), which are generally delegated to the local air district; however, local emissions limitation rules are typically more restrictive than NSPS requirements. (Ex. 50, p. 4.1-2.)

Both the U.S. EPA and the California Air Resources Board (CARB) have established allowable maximum ambient concentrations for the criteria pollutants identified above. The California Ambient Air Quality Standards (CAAQS) are more stringent than federal standards. Federal and State ambient air quality standards are shown in Air Quality Table 1.

CARB recently approved a revised annual PM_{10} standard of 20 $\mu g/m^3$ and a new annual average $PM_{2.5}$ standard of 12 $\mu g/m^3$, both calculated as arithmetic means. Final approval of these standards is pending before the Office of Administrative

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

Law. CARB's implementation requirements for the new standards have not yet been drafted and thus, the Air District cannot enforce the new standards until the regulatory process is completed. (4/28/03 RT, p. 229.) However, the new lower standards would not change the attainment status of the San Diego County Air Basin since the Air District is already designated non-attainment for the state PM_{10} standard. The issue of concern for the SDAPCD was rather whether the PEP would cause any new exceedance of the current PM_{10} and $PM_{2.5}$ standards. (*Id.* at pp. 230-232.)

Air Quality Table 1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1,3]	National Standards[2]
Ozone[4]	1-hour	0.09 ppm	0.12 ppm
		(180 μg/m^3)	(235 μg/m^3)
	8-hour	None	0.08 ppm
			(157 μg/m^3)
PM10	24-hour	50 μg/m^3	150 μg/m^3
	Annual[5, 6]	30 μg/m^3	50 μg/m^3
PM2.5	24-hour	None	65 μg/m^3
	Annual[6]		15 μg/m^3
CO	1-hour	20 ppm	35 ppm
		(23 mg/m^3)	(40 mg/m^3)
	8-hour	9 ppm	9 ppm
		(10 mg/m^3)	(10 mg/m^3)
NO_2	1-hour	0.25 ppm	None
		(470 μg/m^3)	
	Annual Average	None	0.053 ppm
			(100 μg/m^3)
SO_2	1-hour	0.25 ppm	None
		(655 μg/m^3)	
	3-hour	None	None
	24-hour	0.04 ppm[7]	365 μg/m^3
		(105 μg/m^3)	(0.14 ppm)
	Annual Average	None	80 μg/m^3
			(0.03 ppm)

Air Quality Table 1
National and California Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[1,3]	National Standards[2]

1 California standards for O_3, CO, SO_2 (1 and 24 hour), NO_2, and PM_{10} are values that are not to be exceeded. All others are not to be equaled or exceeded. California AAQS are listed in the Table of Standards in Section 70200 of Title 17 of the CCR.

2 National standards (other than eight-hour ozone, 24-hour PM_{10} and $PM_{2.5}$, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight-hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, is equal to or less than the standard. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.

3 Equivalent units given in parentheses are based on a reference temperature of 25 C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25º C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to parts per million by volume, or micromoles of pollutant per mole of gas.

4 Federal eight-hour ozone and fine particulate matter standards were promulgated by EPA on July 18, 1997. The federal one-hour ozone standard continues to apply in areas that violated the standard.

5 The current California standard is an annual geometric mean. The federal standard is an annual arithmetic mean.

6 CARB has approved a revised annual PM10 CAAQS of 20 $\mu g/m^3$ and a new annual average PM2.5 standard of 12 $\mu g/m^3$, both calculated as arithmetic means. These standards will take effect upon final approval by the Office of Administrative Law. Final approval is expected in early 2003 and implementation requirements for the new standards will likely follow within a year.

7 Standard applies at locations where the state standards for ozone and/or suspended particulate matter are violated. National standards apply elsewhere.

Source: Ex. 1, p. 5.2-3, Table 5.2-1.

a. The State of California is currently in the process of revising its annual PM_{10} ambient air quality standard and in the process of enacting $PM_{2.5}$ ambient air quality standards. The standards proposed as of September 26, 2002, were as follows:

PM_{10} – 20 ug/m^3 (annual standard - arithmetic mean)

$PM_{2.5}$ – 12 ug/m^3 (annual standard - arithmetic mean)

$PM_{2.5}$ – 25 ug/m^3 (24-hour standard)

Summary of the Evidence

The project site is located in the San Diego County Air Basin, within the jurisdiction of the SDAPCD. Air quality in the SDAPCD is in attainment with federal and state standards for SO_2, NO_2 and CO, and the federal PM_{10} standard, and nonattainment for the state and federal ozone standards and the state PM_{10} standard. (Ex. 1, pp. 5.2-4 et seq.) The District's attainment status for each criteria pollutant is shown below in Air Quality Table 2.

Air Quality Table 2
Federal and State Area Designations for the San Diego County Air Basin

Pollutants	Federal Classification	State Classification
Ozone	Serious Nonattainment*	Serious Nonattainment
PM10	Unclassifiable/Attainment	Nonattainment
NO_2	Attainment	Attainment
CO	Attainment	Attainment
SO_2	Attainment	Attainment
Source: Ex. 50, p. 4.1-9, Air Quality Table 2. *The San Diego Air Basin was recently found by U.S. EPA to have attained the one-hour NAAQS for ozone (67 Fed.Reg. 65043).		

1. SDAPCD'S Final Determination of Compliance

The SDAPCD released its Final Determination of Compliance (FDOC) on December 6, 2002. The FDOC contains the permit conditions specified by the SDAPCD to ensure compliance with applicable federal, state, and local air quality requirements. (Ex. 52, p. 48.) The conditions include emissions limitations, operating limitations, offset requirements, and testing, monitoring, record keeping and reporting requirements that ensure compliance with air quality LORS. (Ex. 52.) In February 2003, the Air District issued a Supplement to the FDOC as the final PSD permit for the PEP. (Ex. 53). The conditions contained in the FDOC are incorporated into this Decision. (Cal Code of Regs, tit. 20, §§ 1744.5, 1752.3.)

2. California Environmental Quality Act (CEQA) Requirements

In addition to reviewing the Air District's requirements, the Commission also evaluates potential air quality impacts according to CEQA requirements. CEQA Guidelines provide a set of possible significance criteria to determine whether a project will: (1) conflict with or obstruct implementation of the applicable air quality plan; (2) violate any air quality standard or contribute substantially to an existing or projected air quality violation; (3) result in a cumulatively considerable net increase of any criteria pollutant for which the region is nonattainment for state or federal standards; (4) expose sensitive receptors to substantial pollutant concentrations; and (5) create objectionable odors affecting a substantial number of people (Cal Code of Regs, tit. 14, § 15000 et seq., Appendix G). The Guidelines note that where available, the significance criteria established by the applicable APCD may be relied upon to make a significance determination.

The following discussion provides an overview of air quality conditions in the San Diego County Air Basin and describes the conclusions reached by Staff in consultation with SDAPCD.

3. Ambient Air Quality

The Applicant and Staff used data from the Escondido, Chula Vista, Oceanside, San Diego and Otay Mesa air monitoring stations to characterize air quality at the project site, as well as area-wide air quality in San Diego County. (Ex. 1, pp. 5.2-4 et seq.; Ex. 35, Head, Air Quality, p. 5 et seq.; Ex. 50, pp. 4.1-8 et seq.) The primary pollutants of concern are discussed below, based on relevant data reviewed during the five-year period of 1997-2001.

<u>Ozone</u>

Ozone is formed as a result of photochemical reactions of NO_x and VOC, which are directly emitted pollutants, in the presence of sunlight. At the Escondido

monitoring station, the one-hour CAAQS and eight-hour NAAQS were exceeded each year from 1997 through 2001. However, ozone levels have been relatively constant, or have improved slightly, over the last five years at the Escondido, Oceanside, and San Diego monitoring stations. (Ex. 50, p. 4.1-10, Air Quality Table 3.) The U.S. EPA San Diego recently found the San Diego Air Basin has attained the one-hour NAAQS for ozone[14].

Inhalable and Fine Particulate Matter

Ambient particles less than ten microns in diameter (PM_{10}) are small enough to be inhaled. PM_{10} and $PM_{2.5}$ are emitted directly from a range of sources, including the combustion of fossil fuel and cooling tower emissions, and can also be formed many miles downwind when various precursor pollutants interact in the atmosphere (termed secondary particulates). (Ex. 50, p. 4.1-10.)

Gaseous emissions of pollutants like NO_x, SO_x and VOC from combustion sources, and ammonia from NO_x control equipment and agriculture, given the right meteorological conditions, can form particulate matter in the form of nitrates (NO_3), sulfates (SO_4), and organic particles. These pollutants are known as secondary particulates, because they are not directly emitted but are formed through complex chemical reactions in the atmosphere. (Ex. 50, p. 4.1-11.)

PM nitrate can be formed in the atmosphere from the reaction of nitric acid and ammonia. Data from the Escondido station does not identify the composition of local PM_{10} but data from other stations in the San Diego Air Basin indicates that on most days with high PM_{10} concentrations, there is a greater presence of nitrate (NO_3^-) than ammonium (NH_4).[15] (Ex. 50, p. 4.1-11.)

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[14] 67 Federal Register 65043, October 23, 2002.

[15] Because the reactions leading to ammonium nitrate depend on the joint availability of nitrate ions and ammonium ions, the relative importance of ammonia as a precursor is not known with

The project area commonly experiences violations of the state 24-hour PM_{10} standard, which occur predominately in the winter, with violations beginning occasionally during October, occurring mainly in November, December, and January, and ending during February.

At the Escondido, Oceanside, and San Diego monitoring stations, the 24-hour and annual NAAQS for PM_{10} have not been exceeded during the five year period of 1997 through 2001.[16] However, the 24-hour CAAQS for PM_{10} was exceeded at these stations in each year from 1997 through 2001. (Ex. 50, p. 4.1-11, Air Quality Table 4.) At the Escondido station, the trend indicates fewer violations but the magnitude of the violations has not been reduced. According to Staff, annual average PM_{10} concentrations in the area have achieved only gradual reductions in recent years. (*Ibid.*)

Intervenor Bill Powers asserted that "...major PM_{10} reduction measures will be necessary if Escondido is ever to approach attainment with the [CARB's new] 20 $\mu g/m^3$ standard," and that the SDAPCD "is obligated to assess the scope of PM_{10} controls required at the [Palomar Energy Project] in the context of a plant located in an area that is far out-of-compliance with the annual PM_{10} standard..." (Ex. 108, Powers, p. 4.)

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certainty, but if additional ammonia is available then ammonium nitrate particles would be more likely to form. (Ex. 50, p. 4.1-11.)

[16] The U.S. EPA first established standards for $PM_{2.5}$ in 1997. The Air District is currently reviewing preliminary $PM_{2.5}$ data from the Escondido monitoring station, which indicates the EPA standard was only exceeded on one day during the period of 1999-2001. Attainment status for the San Diego Air Basin has not yet been established but attainment plans are due to the U.S. EPA by 2005. Because PM_{10} includes $PM_{2.5}$ as a subset, and reactive precursors that lead to ozone can also lead to $PM_{2.5}$, the established strategies for controlling PM_{10} and ozone precursors (including existing programs for combustion sources) also help to reduce $PM_{2.5}$ concentrations. (Ex. 50, p. 4.1-12.)

The Air District's witness testified that the new proposed standards are currently subject to review by the Office of Administrative Law (OAL), and will subsequently require adoption of guidance rules by CARB, and adoption of regulations by the Air District, all of which are pending. Consequently, the District cannot make a permitting decision based on the proposed new state PM_{10} standards. (4/28/03 RT, pp. 229-231). We agree with the Air District. Neither the SDAPCD nor the Commission has authority to enforce standards that are pending regulatory review. Staff testified that the determination of whether the project exceeds state PM_{10} standards is not changed by the new proposed standards since the San Diego County Air Basin is already a nonattainment area. (4/28/03 RT, p. 245.)

Nitrogen Dioxide (NO_2)

At the Escondido, Oceanside, and San Diego monitoring stations, the one-hour CAAQS and annual NAAQS for NO_2 were not exceeded during the five year period of 1997-2001. NO_2 levels have been relatively constant, or have improved slightly, over the last five years at these monitoring stations. (Ex. 50, p. 4.1-13, Air Quality Table 5.)

Carbon Monoxide (CO)

At the Escondido and Oceanside monitoring stations, the one-hour and eight-hour CAAQS and NAAQS for CO were not exceeded during the five-year period of 1997-2001. CO is considered a local pollutant as it is inert and found in highest concentrations near the emission source, typically, motor vehicles and other mobile sources as well as fireplaces and wood-burning stoves. CO levels throughout the state have declined significantly due to emission control requirements and reformulated gasoline programs. Staff indicated that CO levels in the San Diego Air Basin have been relatively constant or have improved slightly over the last five years at the subject monitoring stations. (Ex. 50, p. 4.1-14, Air Quality Table 6).

Sulfur Dioxide (SO_2)

Sulfur dioxide is not monitored in Escondido. At the Chula Vista and Otay Mesa monitoring stations, the one-hour and 24-hour CAAQS for SO_2, as well as the three-hour, 24-hour, and annual SO_2 NAAQS, were not exceeded during the five years from 1997 through 2001. (Ex. 50, p. 4.1-15, Air Quality Table 7).

Ambient Air Concentrations Assumptions

Staff identified background ambient air concentrations for modeling and evaluating PEP's potential air quality impacts based on the maximum concentrations from the most representative stations over the past three years. The Applicant initially use maximum criteria pollutant concentrations from 1998-2000, that were supplemented by Staff with concentrations from 2001. All are Escondido monitoring station data except for SO_2, which is from Chula Vista. (Ex. 50, pp. 4.1-14 and p. 4.1-15.) Air Quality Table 8, replicated below from Staff's testimony shows the background concentrations used in Staff's analysis.

AIR QUALITY Table 8
Staff Recommended Background Concentrations

Pollutant	Averaging Time	Maximum Monitored Background (ppm)	Staff-Recommended Background ($\mu g/m^3$)	Limiting Standard (ppm)	Type of Standard
Ozone	1 hour	0.14	---	0.09	CAAQS
	8 hour	0.106	---	0.08	NAAQS
PM_{10}	24 hour	74 $\mu g/m^3$	74	50 $\mu g/m^3$	CAAQS
	Annual Geometric Mean	28.5 $\mu g/m^3$	28.5	30 $\mu g/m^3$	CAAQS
	Annual Arithmetic Mean	30.0 $\mu g/m^3$	30.0	50 $\mu g/m^3$	NAAQS
NO_2	1 hour	0.100	191	0.25	CAAQS
	Annual	0.0226	44	0.053	NAAQS
CO	1 hour	10.2	11,870	20	CAAQS
	8 hour	5.26	6,123	9	NAAQS
SO_2	1 hour	0.149	397	0.25	CAAQS
	3 hour	---	397	0.5	NAAQS
	24 hour	0.0205	53.0	0.04	CAAQS
	Annual	0.003	8.0	0.03	NAAQS

Staff-Recommended Background data ($\mu g/m^3$) is from Ex. 1, p. 5.2-27, except PM_{10} (24-hour and AAM). Staff identified higher background PM_{10} concentrations at Escondido in 2001.
Sources: Ex. 50, p. 4.1-15; CARB Air Quality Data CD, 2000, and CARB web site, http://www.arb.ca.gov/adam/, Accessed June 2002.

2. Potential Impacts

Methodology. Applicant performed an air dispersion modeling analysis using SDAPCD and U.S. EPA-approved models and procedures to evaluate the project's potential impacts on existing ambient air pollutant levels during both construction and operation.[17] The analysis is a refined approach that uses hour-by-hour meteorological data collected in the vicinity of the project site. (Ex. 1, § 5.2.3.2 and Appendix E.4; Ex. 2A, Data Responses 6 and 8). Since the elevation of the power plant site will be lowered by 50 feet to reduce potential visual impacts, the Applicant adjusted some of the inputs to the models to account for the height of the exhaust stacks relative to the surrounding terrain. (4/28/03 RT, p. 234 et seq.) The SDAPCD confirmed that modeling was conducted in accordance with U.S. EPA, CARB, and Air District guidance. (*Id.* at p. 237.)

Construction. The primary emission sources during construction are diesel exhaust from heavy equipment and fugitive dust from disturbed areas at the site. (Ex. 1, Appendix E.2, p. E.2-1; Ex. 50, pp. 4.1-16 and 4.1-17.) Although construction impacts are temporary, modeling results indicate that under worst-case conditions construction-related emissions will cause violations of the state one-hour NO_2 standard and directly contribute to existing violations of the state 24-hour PM_{10} standard. In addition, emissions of PM_{10} and ozone precursors will indirectly contribute to existing violations of the PM_{10} and ozone standards. (Ex. 50, p. 4.1-17, Air Quality Table 9, pp. 4.1-24 and 4.1-25, Air Quality Table 13.)

Staff proposed several mitigation measures including fugitive dust control, use of low-sulfur diesel fuel, and installation of oxidizing soot filters. (Ex. 50, pp. 4.1-37 and 4.1-38.) We have included these mitigation measures in Conditions of

[17] Applicant used the U.S. EPA Industrial Source Compex (ISC) Mode, version 00101 and AERMOD, version 99351, which is designed for sequential meteorology and use in areas of elevated terrain. (Ex. 50, p. 4.1-23.)

Certification **AQ-SC2** through **AQ-SC4**. Condition **AQ-SC1** requires an on-site Air Quality Construction Mitigation Manager to monitor implementation of the mitigation plan. Although the City of Escondido's Conditions of Approval for the ERTC Specific Plan Amendment and the Mitigation Monitoring and Reporting Program require the ERTC developer to implement measures to minimize construction impacts during grading activities, Conditions **AQ-SC1** through **AQ-SC4** require more stringent mitigation measures at the power plant site and along the linear alignments to reduce impacts to insignificant levels. (Exs. 21 and 24; Ex. 50, pp. 4.1-37; 4.1-40 and 4.1-41.)

Operation. Project emissions of criteria pollutants during operation will result from combustion of natural gas in the CTGs, which includes dry low NO_x combustors to reduce NO_x emissions and in the HRSGs, which include supplemental duct burners, integral SCR systems, and oxidation catalysts to control NOx, CO, and VOC emissions from the CTG. (Ex. 50, p. 4.1-18.) The SCR systems use aqueous ammonia to further reduce NO_x but ammonia slip may contribute to air quality degradation. Cooling tower emissions of PM_{10} will be controlled by mist drift eliminators.[18] (*Id*. at p. 4.1-19 et seq.)

Maximum hourly emissions for the CTG and cooling tower were modeled for each pollutant to determine the short-term (one-hour, three-hour, eight-hour, and 24-hour) and long-term (annual) impacts for load following startup (cold and warm), shutdown, and normal operations with duct firing and without duct firing. The maximum hourly, daily, and annual emissions for baseload operation were

[18] The drift eliminator is designed to control drift fraction to 0.0005 percent of circulating water flow. According to Applicant, drift emissions should be quantified on an assumption that 50 percent of total dissolved solids (TDS) in the cooling water eventually become airborne PM_{10} and a 50 percent fraction remain larger particles. (Ex. 1, Appendix E.3-2.) Staff was concerned about the accuracy of this assertion and therefore assumed that 100 percent of the TDS would be emitted to the ambient air as PM_{10} to establish worst-case offset requirements. (Ex. 50, pp. 4.1-19 and 4.1-20) The SDAPCD analyzed the project using a 100 percent estimate and determined that it would not alter anticipated impacts. (Ex. 22; Ex. 50, p. 4.1-19.) Condition of Certification **AQ-SC9** establishes limits for cooling tower PM_{10} emissions.

also modeled to determine the daily and annual impacts. Staff's Air Quality Table 14, replicated below, indicates that project operation does not cause new violations of attainment pollutants, but would have the potential to exacerbate existing violations of the state 24-hour PM_{10} standard. (Ex. 50, p. 4.1-26.)

AIR QUALITY Table 14
Palomar Energy, Ambient Air Quality Impacts from Routine Operation
($\mu g/m^3$)

Pollutant	Averaging Period	Project Impact	Back-ground	Total Impact	Limiting Standard	Type of Standard	Percent of Standard
PM_{10}	24-hour	4.8	**74**	**79**	50	CAAQS	**158**
	AGM	0.8	28.5	29	30	CAAQS	98
	AAM	0.8	30.0	31	50	NAAQS	62
NO_2	one-hour	24.8	191	215	470	CAAQS	46
	Annual	0.7	44	45	100	NAAQS	45
CO	one-hour	30.1	11,870	11,900	23,000	CAAQS	52
	8-hour	10.6	6,123	6,134	10,000	NAAQS	61
SO_2	one-hour	7.5	397	405	650	CAAQS	62
	3-hour	5.4	397	402	1,300	NAAQS	31
	24-hour	1.4	53.0	54	105	CAAQS	52
	Annual	0.2	8.0	8	80	NAAQS	10

Source: Ex. 50, p. 4.1-26; Ex. 1, § 5.2, Table 5.2-14.
Notes: Short-term NO_2 and CO impacts do not reflect startup conditions. During startup conditions maximum impacts would be one-hour NO_2: 266 $\mu g/m^3$; one-hour CO: 1,250 $\mu g/m^3$; eight-hour CO: 388 $\mu g/m^3$ (Ex. 1, § 5.2, Table 5.2-16). With background conditions included, startup conditions would not cause or contribute to violations of the NO_2 or CO standards.

According to Staff, direct impacts of PM_{10} are significant since they would contribute to existing violations of the state 24-hour standard. (Ex. 50, p. 4.1-26, 4/28/03 RT, p. 245.) Secondary impacts caused by emissions of precursors to PM_{10} and ozone are discussed below. There is also a potential for $PM_{2.5}$ impacts to occur because the project would also emit this contaminant directly; however, the magnitude of potential $PM_{2.5}$ impacts is not quantified because no established methodology exists for quantifying $PM_{2.5}$ emissions or characterizing the complex interaction of $PM_{2.5}$ precursors in the ambient air. Staff recommended mitigation for combustion-related PM_{10}, which includes $PM_{2.5}$ and reactive precursors that can lead to $PM_{2.5}$. (Ex. 50, p. 4.1-26.) Applicant agreed to implement the mitigation measures identified by Staff. (4/28/03 RT, pp. 217-

219.) Condition **AQ-SC10** incorporates these mitigation measures, which are described below in the Mitigation discussion.

Secondary Pollutant Impacts

The project's gaseous emissions of NO_x, VOC, SO_2, and ammonia are precursor pollutants that can contribute to the formation of secondary pollutants, i.e., ozone, PM_{10}, and $PM_{2.5}$. The process of gas-to-particulate conversion is complex and depends on many factors, including local humidity and the presence of other compounds. Currently, there are no agency-recommended models or procedures for estimating nitrate or sulfate formation. However, because of the known relationship of NO_x and SO_2 emissions to secondary PM_{10} and $PM_{2.5}$ formation, the emissions of NO_x and SO_2 from the project, if left unmitigated, may contribute to higher PM_{10} and $PM_{2.5}$ in the region. The magnitude of the secondary PM_{10} and $PM_{2.5}$ impact caused by ammonia is similarly difficult to quantify because it depends on the presence of nitrate and sulfate precursors. NO_x and VOC can contribute to higher ozone levels. (Ex. 50, p. 4.1-26.)

The Applicant analyzed potential secondary particulate impacts from the project's NO_x and SO_2 emissions and concluded that these emissions would not measurably contribute to ambient particulate concentrations. This analysis utilized estimated NO_x and SO_2 emissions along with measured secondary sulfate and nitrate concentrations from the South Coast Air Basin to establish a relationship between precursor emissions and secondary particulate matter concentrations. (Ex. 2A, Data Response 15.) Staff does not dispute the Applicant's methodology of analyzing secondary impacts; however, Staff considers any direct or secondary contribution to a violation of PM_{10} standards as a significant impact. (Ex. 50, p. 4.1-35.)

Intervenor Bill Powers contended the Applicant's analysis was inadequate because: (1) it utilized data from the South Coast Air Basin, rather than data from

San Diego County; and (2) it did not consider potential impacts to secondary particulate matter from ammonia emissions. (Ex. 108, Powers, p. 7 et seq.)

In response to the Intervenor's concern, Applicant conducted an additional analysis of the project's SO_2 and ammonia emissions using ambient concentration data from San Diego County to estimate the relationship between emissions and ambient concentrations of secondary particulate matter. Applicant assumed that the ammonium nitrate and ammonium sulfate ambient concentrations are linearly proportional to ammonia and SO_x emissions, respectively. The analysis considered ammonia emissions from the HRSG stacks, as well as from the cooling tower and concluded that less than six percent of the ammonia emissions and about 10 percent of the SO_2 emissions would be converted to secondary particulate matter. (Ex. 38, Heisler, Air Quality, p. 8.)

The Applicant's analysis further assumed the maximum SO_2 emission rate that would result from continuous operation at the maximum permitted fuel sulfur content of 0.75 grains per dry standard cubic foot. This value is conservative (high), because more typical values are less than 0.2 grains per dry standard cubic foot. (Ex. 38, Heisler, Air Quality, p. 7). The analysis also assumed ammonia emissions of 113 tpy from the HRSG stacks corresponding to an ammonia slip concentration of 5 parts per million by volume on a dry basis at 15 percent oxygen, which is required by Condition of Certification **AQ-SC11**.

Applicant asserts its analysis is conservative because: (1) project ammonia and SO_2 emissions were based on operation of both the combustion turbines and cooling tower 24 hours a day 365 days a year, with no downtime for maintenance or shutdowns in response to decreased power demand; (2) project SO_2 emissions were based on the maximum, instead of typical, fuel sulfur content ("typical" fuel sulfur content is less than one-third of the "maximum"); (3) project ammonia emissions were based on the maximum, rather than typical, slip rate

and pH of the cooling tower circulating water; (4) conversion ratios were based on the highest observed nitrate and sulfate concentrations in San Diego County; and (5) the analysis assumes that the San Diego region is ammonia limited all the time, although it could, in fact, be ammonia rich (in which case, no conversion of ammonia to particulate matter would occur). (Ex. 38, Heisler, Air Quality, p. 8 et seq.)

Using these assumptions, Applicant estimated ammonia emissions from the cooling tower would be 37.5 tpy, based on the project's anticipated cooling tower operating conditions and an estimate that three percent of the free ammonia present in the circulating water would be stripped from the water and released to the atmosphere. (Ex. 35, Schilling, Air Quality, p. 9.)

Intervenor Powers provided estimates of ammonia emissions from the cooling tower of 42 to 135 tpy. (Ex. 89, p. 9 et seq.; Ex. 108, Powers, p. 6.) Mr. Powers' witness Professor N. Khandan confirmed the calculations used to develop Mr. Powers' estimates. (4/28/03 RT, p. 281, Ex.110.) Applicant's witness from the engineering firm that developed the conceptual design for the PEP testified that Mr. Powers' estimates were not based on the project's anticipated operating conditions. (Ex. 35, Schilling, pp. 3-4; 4/29/03 RT, p. 24.) Professor Khandan confirmed that Mr. Powers' estimates would only be valid for the operating conditions that Mr. Powers assumed. (4/28/03 RT, p. 282).

Mr. Powers claimed the Applicant should have assumed that five percent of the ammonia in the cooling tower circulating water would be released to the atmosphere, instead of three percent, and that the emission rate should be 42 tpy. (Ex. 109, Powers, p. 8). However, Mr. Powers offered only a report of conversation with an air stripping vendor as support for the five percent stripping rate (*Id*. at p. 9 et seq.), whereas the Applicant provided testimony that three percent, using mass balance calculations, is a conservative estimate based upon reported research. (4/28/03 RT, p. 25.)

We note that increasing the assumed cooling tower emissions from 37.5 tpy to 42 tpy increases the Applicant's estimate of total project ammonia emissions (HRSG stacks plus cooling tower) by only about five tpy out of a total of about 151 tpy.[19] This does not substantially alter the results of Applicant's analysis regarding the potential conversion of project ammonia emissions to form secondary particulate matter.

Intervenor Powers also disagreed with Applicant's analysis of the conversion of ammonia emissions to form secondary particulate matter, and stated that "his calculations" (not detailed in the record) indicated ammonia emissions from the project could be equivalent to more than 700 tpy of direct particulate matter emissions if all of the ammonia were to be converted to secondary particulate matter. (4/28/03 RT, p. 283 et seq.) Other than stating that he thought 100 percent conversion should be assumed, Mr. Powers was not able to cite specific deficiencies in Applicant's analysis. (*Id*. at p. 291 et seq.)

Staff addressed potential ammonia impacts differently from the analyses offered by Applicant or Mr. Powers. Staff investigated the existing conditions of nitrates and ammonia in the San Diego Air Basin and determined that increased ammonia could contribute to increased ambient particulate nitrate. Staff's review considered basin-wide average conditions on days with high PM_{10} concentrations at any monitoring station in the county. Some days, ammonia is more abundant than nitrates, but conversely, ammonia reacts with available sulfates much more readily than nitrates. According to Staff, the generally dry and mild conditions in

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[19] Applicant performed a "proportionality" analysis to estimate the conversion rate of ammonia to secondary ammonium nitrate. (Ex. 38, Heisler, p 3.) This analysis compared the total ammonia emissions in San Diego County (4,353 tpy) to the highest annual average nitrate concentration ever observed in the County (equivalent to 7.3 $\mu g/m^3$ ammonium nitrate). (Ex. 38, Heisler, p. 6.) Based on these values, Applicant's analysis concluded that the 151 tpy of ammonia emissions from the project (about three percent of the County total ammonia emissions) would lead to a secondary ammonium nitrate concentration of about three percent of the 7.3 $\mu g/m^3$ highest value observed in San Diego County or about 0.25 $\mu g/m^3$. (*Id.* at p. 8.)

Escondido would inhibit creation of ammonium nitrate particles. Because of the numerous variables involved in the reactions involved in particle formation, Staff cannot characterize the Escondido area as consistently "ammonia-limited." Staff concluded therefore that the effect of ammonia on particulate concentrations in the region is variable and uncertain. (Ex. 57, p. 2 et seq.)

Additionally, Staff did not attempt to quantify ammonia emissions from the cooling tower, due to several variables and uncertainties in the actual cooling tower operation, including circulating water pH and ammonia content as well as circulating water, makeup water and blowdown flow rates. (4/28/03 RT, p. 263, et seq.) Additionally, Staff's expert witness testified that both Applicant and Intervenor Powers may have overestimated cooling tower ammonia emissions because the reaction between ammonia and chlorine in biocides added to the cooling tower would reduce the amount of ammonia available for stripping. (4/29/03 RT, pp. 41-43.) See discussion in the **Public Health** section of this Decision.

Staff did not recommend directly mitigating or limiting the quantity of ammonia emissions from the cooling tower because Staff does not believe ammonia emissions will be significant during normal operation of the cooling tower. Staff expects that the pH operating range for the cooling water will keep the ammonia in solution with the water, and that significant stripping and release of ammonia will not occur from the cooling tower. Staff concluded that the combination of limited ammonia emissions and variable and limited conversion of ammonia to ambient particulate matter reduces the potential PM_{10} and $PM_{2.5}$ impacts of cooling tower ammonia to less than significant levels. (Ex. 57, p. 2 et seq.)

Thus, for different reasons, the Applicant and Staff both reach the same conclusion that ammonia emissions are not significant. Although Intervenor Powers argues that these emissions could be significant, he does not offer specific evidence to support his position. We find the extensive record on this

issue indicates that even if Applicant underestimated project ammonia emissions, there is no evidence that emissions would be as high as those speculated by Intervenor Powers. Further, we are persuaded by Staff's testimony that cooling tower ammonia emissions would most likely be lower than those calculated by Applicant and would not result in direct or indirect significant impacts to ambient air quality. Conditions of Certification **AQ-SC8** and **AQ-SC-9** require the project owner to install a circulating water flow meter in the cooling tower to record daily flow (showing the TDS, pH, and ammonia concentrations) and to limit annual cooling tower PM_{10} emissions to 5.7 tpy.

Commissioning. Initial "commissioning" operation of the power plant starts with the first firing of fuel in the gas turbines and HRSGs to test equipment and emission control systems. Staff reviewed the modeling results provided by Applicant and found that potential impacts during commissioning would be similar to impacts during routine operations. (Ex. 50, p. 4.1-27.) Conditions **AQ-23** through **AQ-29** require the project owner to comply with specific emission limits during the commissioning period.

5. Mitigation

BACT. The project's emission control equipment is consistent with the Air District's Best Available Control Technology (BACT) requirements as set forth in SDAPCD Rule 20.3.[20] The following BACT emission rates during normal operation, excluding turbine startup, shutdown and commissioning periods, are specified for the CTG as set forth in Conditions **AQ-SC11**, **AQ-8**, **AQ-31**, **AQ-32**, **AQ-33**, and **AQ-42**.

[20] For facilities that emit nonattainment pollutants, USEPA requires 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.)

NO_x Emissions: 2.0 ppmvd @ 15%O_2 (1-hr average or 3-hr average when duct firing or during transient hours)

CO Emissions: 4.0 ppmvd @ 15%O_2 (3-hr average)

VOC Emissions: 2.0 ppmvd @ 15%O_2 (3-hr average)

PM_{10} Emissions: 14 lb/day (with or without duct firing)

SO_2 Emissions: natural gas with 0.75 rains of sulfur per 100 cubic feet

NH_3 Emissions: 5.0 ppmvd @ 15%O_2 (1-hour average) and 10 ppmvd during transient hours

SDAPCD Rule 11 exempts cooling towers from District permit requirements. Cooling tower drift eliminators will provide a drift rate efficiency of 0.0005 percent to reduce PM_{10} emissions. (Ex. 1, p. 5.2-21, Condition **AQ-SC9**.)

Emission Offsets. Since San Diego County is currently designated as nonattainment for state and federal ozone standards, SDAPCD Rule 20.3(d)(5) requires the Applicant to offset emissions of NO_x and VOC (ozone precursors) to reduce ozone impacts. Applicant will offset NO_x emissions with stationary source ("Class A") emission reduction credits (ERCs) that can be exchanged as allowed by Rule 20.3. The NO_x offset liability is defined by an offset ratio of 1.2 to 1.0, which can be achieved by either surrendering NO_x ERCs or interpollutant trading VOC ERCs at an additional 2 to 1 interpollutant trading ratio. Since the project is not a major source of VOC emissions, the SDAPCD offset liability applies only to NO_x.[21] The SDAPCD does not require Applicant to offset emissions of any other pollutants. The City of Escondido, however, adopted a Condition of Approval for the ERTC requiring the PEP project owner to offset PM_{10} emissions based on the Energy Commission's CEQA analysis. (Ex. 50, pp. 4.1-29 and 4.1-30; Ex. 21.)

The FDOC imposed a maximum annual emissions limit of 105 tpy of NO_x and required surrender of 126 tpy of NO_x-equivalent ERCs. (Ex. 52.) Applicant

[21] The District requires offsets for VOC emissions exceeding 50 tpy; since the project's VOC emissions will be less than 50 tpy, no VOC offsets are necessary.

provided an offset package to meet this requirement and upon review, the SDAPCD indicated concern about the availability of 0.75 tpy from one of the proposed ERCs. (Ex. 30.) Consequently, Applicant agreed to reduce the project's NO_x maximum emissions cap to 104.3 tpy, which reflects the level of approved ERCs. This revision is incorporated in Conditions of Certification **AQ-SC5**, **AQ-17**, and **AQ-49**. (Ex. 58.) The ERCs identified to offset NO_x emissions, including VOC for NO_x trades, are included in Condition **AQ-SC5**. (Ex. 58.) The Air District confirmed that the Applicant's offset package complies with District requirements.[22] (Ex. 30.)

Staff's Air Quality Table 16, as amended to reflect the updated data in the evidentiary record, shows the project's emission liabilities that must be mitigated under SDAPCD's rules and the required offset strategies.

Air Quality Table 16
Offset Liability and Offset Strategy

Pollutant	Offset Liability	Offset Strategy	Offset Ratio	SDAPCD required ERCs
NOx, tpy	124.4	NOx-Equivalent ERCs	1.2	149.3
NOx, tpy with cap	105.0	NOx-Equivalent ERCs	1.2	126.0
PM_{10}, tpy	107.7	Not required by SDAPCD.	---	---
CO, tpy	---	None necessary.	---	---
SOx, tpy	33.1	Not required by SDAPCD.	---	---
VOC, tpy	47.3	Not required by SDAPCD.	---	---

Source: Ex. 50, p. 4.1-30; Ex. 52 (FDOC), p. 16, with independent Staff assessment.
Notes: Emissions of PM_{10}, SOx, and VOC (PM_{10} and ozone precursors) do not need to be offset per District rules, but do need to be offset to satisfy CEQA requirements.

[22] Public Resources Code section 25523(d)(2) provides: "The commission may not find that the proposed facility conforms with applicable air quality standards pursuant to paragraph (1) unless the applicable air pollution control district or air quality management district certifies, prior to the licensing of the project by the commission, that complete emissions offsets for the proposed

CEQA Mitigation. Staff anticipates that the Applicant's offset strategy for NO_x and VOC will mitigate NO_x and VOC emissions to avoid secondary PM_{10} impacts but the magnitude of secondary PM_{10} or $PM_{2.5}$ impacts from ammonia, NO_x, and SO_2 would result in significant adverse effects to ambient air quality. Staff estimates the unmitigated liability for PM_{10} would be 108 tpy due to potential PM_{10} and $PM_{2.5}$ precursor emissions of SO_2 and ammonia. (Ex. 50, p. 4.1-34 et seq.) In reviewing options available in the San Diego County Air Basin, Staff recommended two additional strategies to mitigate PM_{10} and its precursors. (Id. at p. 4.1-38.)

- Reduce project-related ammonia emissions by establishing an ammonia slip limit of 5 ppm that would be more stringent than that specified by the SDAPCD yet consistent with CARB guidance, and monitoring ammonia in the cooling water. As discussed above, Conditions **AQ-SC8**, **AQ-SC-9**, and **AQ-SC11** address this strategy.

- Reduce PM_{10} and PM_{10} precursors, primarily NO_x, by controlling diesel sources in the North San Diego County area using a fee-based approach. Staff found that the cost of the Carl Moyer program in the North County has increased in relation to effective diesel emission reduction and therefore, Staff based the fee on the historical cost of non-Moyer projects to be administered by the Air District. Condition **AQ-SC10** incorporates this strategy by requiring the project owner to pay $1.86 million to the Air District for programs to reduce diesel source mitigation projects in the North County area.

Staff asserts that directing funds to local uses will reduce PM_{10} and PM_{10} precursors, primarily NO_x, to address the project's PM_{10} liability and minimize the localized PM_{10} impact of the project. This strategy would also mitigate potential $PM_{2.5}$ impacts by focusing PM_{10} mitigation on combustion-related sources that are sources of $PM_{2.5}$ and $PM_{2.5}$ precursors. Staff believes implementation of these mitigation measures will reduce impacts to insignificant levels. (Ex. 50, p. 4.1-40.)

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facility have been identified and will be obtained by the Applicant within the time required by the

6. Cumulative Impacts

Applicant conducted a cumulative air quality impact analysis after reviewing existing and proposed sources within a 10 kilometer radius. The nearby CalPeak and RAMCO natural gas fired power plants were considered the most likely sources of cumulative air pollutants in the same area as the PEP project. The maximum modeled cumulative impacts of the PEP in conjunction with the other generation facilities are presented below in Staff's Air Quality Table 19. The analysis indicates that the potential additional impacts due to Palomar Energy operations are negligible. Based on this result, there is no evidence that the project will result in a significant to cumulative impacts. (Ex. 50, p. 4.1-41; Ex. 1, p. 5.2-44 et seq.)

AIR QUALITY Table 19
Ambient Air Quality Impacts from Cumulative Sources

Pollutant	Averaging Period	Cumulative Impact	Back-ground	Total Cumulative Impact	Limiting Standard	Type of Standard	Percent of Standard
PM_{10}	24-hour	5	**74**	**79**	50	CAAQS	**158**
	AGM	0.9	28.5	29	30	CAAQS	98
	AAM	0.9	30.0	31	50	NAAQS	62
NO_2	one-hour	33.5	191	224	470	CAAQS	48
	Annual	1	44	45	100	NAAQS	45
CO	one-hour	33.3	11,870	11,903	23,000	CAAQS	52
	8-hour	15.3	6,123	6,138	10,000	NAAQS	61

Source: Ex. 50, p. 4.1-42; Ex. 1, § 5.2, Table 5.2-27.
Note: The applicant did not analyze SO_2 impacts for cumulative sources. Because cumulative sources include only natural gas-fired energy facilities, the cumulative impacts would be similar to those presented in Air Quality Table 14.

7. Natural Gas Supply

Much of the new generation capacity in the San Diego region is permitted to use only natural gas. In the fall of 2000, the SDG&E gas delivery system demonstrated constraints in meeting demand, resulting in gas delivery curtailments to electric generating facilities in the system. Under SDAPCD Rule

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District's rules…"

69, certain existing generation facilities are permitted to fire fuel oil (e.g., South Bay and Encina power plants) in the event of gas curtailment but the Air District has expressed concern that pollutant emissions resulting from firing fuel oil could result in significant impacts to ambient air quality. Infrastructure in the region was recently upgraded to avoid local natural gas shortages (e.g., the Baja Norte pipeline and the Line 6900 Expansion). (Ex. 50, p. 4.1-42.) Further, the Public Utilities Commission recently conducted proceedings to establish curtailment priorities.[23]

The extent to which the PEP would contribute to additional regional gas curtailments is speculative and the indirect negative air quality consequences are unknown. (Ex. 50, p. 4.1-42; Ex. 12.) Since there is no evidence of a nexus between the operation of the PEP with other cumulative development and possible fuel oil firing at other facilities, no further analysis was necessary.

8. Environmental Justice

The evidentiary record includes a discussion of local demographics to identify potential environmental justice concerns. *See* the **Socioeconomics** section of this Decision. Since there are no significant unmitigated air quality impacts resulting from construction and operation of the PEP, there is no evidence of *disproportionate* air quality impacts on minority/low income populations. (Ex. 50, p. 4.1-43.) Therefore, we find there are no environmental justice issues that would require additional analysis.

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[23] CPUC Decision 02-11-073, Nov. 21, 2002 [Order Instituting Investigation (OII) 00-11-002, filed Nov. 2, 2000]; *See* discussion in the **Power Plant Efficiency** section of this Decision.

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 seven air contaminants identified as criteria air pollutants, including sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), particulate matter less than 10 microns in diameter (PM_{10}) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

2. The Palomar Energy Project is located in the San Diego Air Pollution Control District (Air District).

3. The Air District is a nonattainment area for state and federal 1-hour ozone standards, and state PM_{10} standards; the Air District is in attainment for federal PM_{10} standards and state and federal $NO_{2,}$ CO, SO_2 and lead. standards. The District has not yet been classified regarding $PM_{2.5}$ standards.

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

5. Potential impacts from power plant construction-related activities will be mitigated to insignificant levels with implementation of a Construction Mitigation Plan that specifies dust control and diesel particulate reduction measures.

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

7. The power plant will employ the best available control technology (BACT) to limit pollutant emissions by installing dry low NO_x combustors, SCR technology, oxidation catalysts, and cooling tower drift eliminators.

8. Project NO_x emissions are limited to 2.0 parts per million volume dry (ppmvd) corrected to 15% O_2 over a one-hour average, or a three-hour average when duct firing and during transient hours.

9. Project CO emissions are limited to 4.0 ppmvd corrected to 15% O_2 over a three-hour rolling average.

10. Project VOC emissions are limited to 2.0 ppmvd corrected to 15% O_2 over a three-hour rolling average.

11. Project combustion turbine/duct burner PM_{10} emissions are limited to 14 lb/hour (with or without duct firing) and cooling tower PM_{10} emissions are limited to 5.7 tons per year.

12. Project ammonia slip emissions resulting from use of the SCR are limited to 5 ppmvd corrected to 15% O_2 during on-going operations and 10 ppmvd during transient hours.

13. Project equipment shall be fired on natural gas only with a sulfur content limited to 0.75 grains per 100 dry standard cubic feet.

14. To mitigate the project's NO_x and VOC emissions that could contribute to violations of state and federal ozone standards, the Applicant has identified sufficient emission reduction credits (ERCs) to offset allowed emissions in accordance with Rule 20.3(d)(5).

15. To mitigate the project's PM_{10} and PM_{10} precursor emissions that could contribute to violations of the state PM_{10} standard, the project owner will provide $1.86 million to the Air District to fund emission reduction programs, preferentially in the Escondido area.

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

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

The Commission therefore concludes that implementation of the Conditions of Certification, below, and the mitigation measures described in the evidentiary record, ensures the Palomar Energy Project 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-SC1 The project owner shall fund all expenses for an on-site Air Quality Construction Mitigation Manager (AQCMM) who shall be responsible for maintaining compliance with conditions **AQ-SC2** through **AQ-SC4** for the entire project site and linear facility construction. The on-site AQCMM shall have full access to areas of construction of the project site and linear facilities, and shall have the authority to appeal to the CPM to have the CPM stop any or all construction activities as warranted by applicable construction mitigation conditions. The on-site AQCMM shall have a current certification by the California Air Resources Board for Visible Emission Evaluation (U.S. EPA Method 9) prior to the commencement of ground disturbance. The on-site AQCMM shall not be terminated without written consent of CPM.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit to the CPM, for approval, the name, current CARB Visible Emission Evaluation certificate, and contact information for the on-site AQCMM.

AQ-SC2 The project owner shall provide a construction mitigation plan, for approval, which shows the steps that will be taken, and reporting requirements, to ensure compliance with conditions **AQ-SC3** and **AQ-SC4**.

Verification: At least 60 days prior to start any ground disturbance, the project owner shall submit to the CPM, for approval, the construction mitigation plan.

AQ-SC3* The on-site AQCMM shall submit to the CPM, in the Monthly Compliance Report (MCR), a construction mitigation report that demonstrates compliance with the following mitigation measures:

a) All unpaved roads and disturbed areas in the project and linear construction sites shall be watered until sufficiently wet for every four hours of construction activities. The frequency of watering can be reduced or eliminated during periods of precipitation.

b) No vehicle shall exceed 15 miles per hour within the construction site.

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

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

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

f) All entrances to the construction site shall be treated with dust soil stabilization compounds.

g) Construction vehicles must enter the construction site through the treated entrance roadways.

h) Construction areas adjacent to any paved roadway shall be provided with sandbags to prevent run-off to the roadway.

i) All paved roads within the construction site shall be swept twice daily when construction activity occurs.

j) At least the first 500 feet of any public roadway exiting from the construction site shall be swept twice daily when construction activity occurs.

k) All soil storage piles and disturbed areas that remain inactive for longer than 10 days shall be covered, or be treated with appropriate dust suppressant compounds.

l) All vehicles that are used to transport solid bulk material on public roadways and that have potential to cause visible emissions shall be provided with a cover, or the materials shall be sufficiently wetted and loaded onto the trucks in a manner to provide at least one foot of freeboard.

m) Where appropriate, construction areas that may be disturbed shall be equipped with windbreaks at the windward sides prior to any ground disturbance. The windbreaks shall remain in place until the soil is stabilized or permanently covered with vegetation.

n) Any construction activities that can cause fugitive dust shall cease when the wind exceeds 25 miles per hour.

o) All diesel-fueled engines used in the construction of the facility shall be fueled only with ultra-low sulfur diesel, which contains no more than 15 ppm sulfur.

p) All large construction diesel engines that have a rating of 100 hp or more, shall meet, at a minimum, the 1996 CARB or U.S. EPA certified standards for off-road equipment.

q) All large construction diesel engines, which have a rating of 100 hp or more, shall be equipped with catalyzed diesel particulate filters (soot filters), unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types.

r) All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM that shows the engine meets the conditions **AQ-SC3**(p) and **AQ-SC3**(q) above.

Verification: In the MCR, the project owner shall provide the CPM a copy of the construction mitigation report and any diesel fuel purchase records, which clearly demonstrate compliance with condition **AQ-SC3**.

* As modified in Ex. 51, FSA Addendum #1, dated March 7, 2003

AQ-SC4 No construction activities are allowed to cause visible emissions at or beyond the project site fenced property boundary. No construction activities are allowed to cause visible plumes that exceed 20 percent opacity at any location on the construction site. No construction activities are allowed to cause any visible plume in excess of 200 feet beyond the centerline of the construction of linear facilities.

Verification: The on-site AQCMM shall conduct a visible emission evaluation at the construction site fence line, or 200 feet from the center of construction activities at the linear facility, each time he/she sees excessive fugitive dust from the construction or linear facility site. The records of the visible emission evaluations shall be maintained at the construction site and shall be provided to the CPM in the MCR.

AQ-SC5* The project owner shall surrender the emission offset credits listed in the table below or a modified list, as allowed by this condition, at the time that surrender is required by Air Quality Condition **AQ-49**. If additional ERCs are submitted consistent with Air Quality Conditions **AQ-17** and **AQ–49**, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions of credits listed.

The CPM, in consultation with the District, may approve any such change to the ERC list provided that the project remains in compliance with all applicable laws, ordinances, regulations, and standards, the requested change(s) clearly will not cause the project to result in a significant environmental impact, and each requested change is consistent with applicable federal and state laws and regulations. If provided to increase maximum allowable emissions from 104.3 tons per year of NOx emissions to 124.4 tons per year pursuant to Condition **AQ-49**, Class A ERCs issued by the District and meeting the standards of District Rule 26.1 are presumed to satisfy these criteria. If other than Class A ERCs are proposed, then the U.S. EPA shall also be consulted.

District ERC Number	NOx-Equivalent (tpy)
ERC 000111-01	17.5
ERC 000111-02	0.15 (from 0.3 tpy VOC)
ERC 010228-01	7.6 (from 15.2 tpy VOC)
ERC 921291-01	20.8
ERC 921291-02	0.5 (from 1.0 tpy of VOC)
ERC 976993-01	10.5 (from 21.0 tpy of VOC)
ERC 020130-02	3.6
No ERC number, diesel engine replacement	26.0
No ERC number, boiler replacement	38.5

Verification: The project owner shall submit to the CPM a list of ERCs to be surrendered to the District at least 60 days prior to initial startup. When additional ERCs are submitted pursuant to Air Quality Condition **AQ-49,** the project owner shall submit the list of additional ERCs at least 60 days prior to the use of these additional ERCs. If the CPM, in consultation with the District and, in the event other than a Class A ERC is proposed, with the U.S.EPA, approves a substitution or modification, the CPM shall file a statement of the approval with the commission docket and mail a copy of the statement to every person on the post-certification mailing list. The CPM shall maintain an updated list of approved ERCs for the project.

*** As modified in Ex. 58, FSA Addendum #3, dated May 2, 2203

AQ-SC6 The project owner shall submit to the CPM for review and approval any modification proposed by either the project owner or issuing agency to any project air permit.

Verification: The project owner shall submit the proposed air permit modification to the CPM within five working days of either its submittal by the project owner to an agency, or its receipt from an agency. The project owner shall submit all modified air permits to the CPM within 15 days of their receipt.

AQ-SC7 The project owner shall submit Quarterly Operational Reports to the CPM and District that include operational and emissions information as necessary to demonstrate compliance with Conditions **AQ-SC8**, **AQ-SC9**, and **AQ-1** through **AQ-55**, as applicable. The Quarterly Operational Report will specifically note or highlight instances of noncompliance and the corrective measures taken to correct these incidents.

Verification: The project owner shall submit the Quarterly Operational Reports to the CPM and the District no later than 30 days following the end of each calendar quarter.

AQ-SC8 The project owner shall provide a flow meter to determine the daily cooling tower circulating water flow and shall monitor and record the daily flow.

Verification: The project owner shall submit to the CPM the daily cooling tower recirculating water flow data in the Quarterly Operational Reports (**AQ-SC7**).

AQ-SC9* ** The cooling tower annual PM_{10} emissions shall be limited to 5.7 ton/year. The project owner shall estimate annual PM_{10} emissions from the cooling tower using the water quality testing data and recirculating water flow data collected on a quarterly basis (**AQ-SC8** and **AQ-35**). The water quality testing data shall show the total dissolved solids, the pH, and the ammonia concentration of the cooling water.

The cooling tower shall be equipped with drift eliminators with an efficiency of 0.0005 percent.

Verification: The project owner shall submit to the CPM annual cooling tower PM_{10} emission estimates in the Quarterly Operational Reports (**AQ-SC7**).

*** As modified in Ex. 58, FSA Addendum #3, dated May 2, 2203

AQ-SC10** The project owner shall provide $1.86 million, for programs of the San Diego County Air Pollution Control District to mitigate potential PM10 and PM10 precursor impacts in the region around the Palomar Energy Project. The payment shall be provided to the District, which will allocate the funds to programs expected to provide reductions in the specified area. The $1.86 million payment includes an administration fee of no greater than ten percent to the District for costs to advertise, evaluate, contract and administer diesel source emission reduction projects.

The project owner shall provide the $1.86 million in two installments. The first installment will be in the amount of $1.57 million for projects and District costs, and will be submitted to the District no later than the date of delivery of the first combustion turbine to the project site. The project owner shall provide the remaining $290,000 to the District no later than the date of surrendering the additional Emission Reduction Credits described in AQ-49.

The project owner shall demonstrate that a good faith effort has been made to develop an agreement with the District to include the following:

1) the District shall provide the project owner with a quarterly report that includes a description of the funded mitigation or contracted projects, the cost of each project, and estimated cost-effectiveness of the emission reduction projects;

2) for up to two years from the date of a payment by the project owner, the District will give first right of refusal to diesel source mitigation projects in the Escondido area;

3) the District shall actively pursue mitigation projects by advertising through its Carl Moyer Program, Lower Emission School Bus Program, and Vehicle Registration Fund Program, as well as working directly with projects that may be developed by the project owner or in the course of normal district business;

4) if, after two years from the date of payment, the District has been unable to identify sufficient projects to expend all fees paid, the project owner shall assist in identifying additional diesel source mitigation projects throughout the North San Diego County area; and

5) the District shall restrict use of fees paid to diesel source reduction projects in the North San Diego County area, only.

Verification: Copies of each payment transmitted and a record of the agreement with the District shall be provided to the CPM within 20 days after delivery of the each payment to the District. The project owner shall submit to the CPM, in a Quarterly Report, a summary of mitigation projects, costs, and cost effectiveness of emission reductions, as provided by the District.

** As modified in Ex. 56, FSA Addendum #2, dated March 24, 2003

AQ-SC11* The emissions of ammonia (ammonia slip) from each gas turbine exhaust stack following the SCR controls shall not exceed 5.0 parts per million by volume on a dry basis (ppmvd) corrected to 15 percent oxygen. This emission limitation shall apply during "on-going" operations, except during transient hours.

During transient hours, a limitation of 10.0 ppmvd corrected to 15 percent oxygen shall apply on a three-hour average calculated as the average of the transient hour, the clock hour immediately prior to and the clock hour immediately following the transient hour.

Verification: The project owner shall submit to the District and the CPM turbine initial source test data and annual source test data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**). "On-going" operations are defined in **AQ-30**, and a "transient hour" is defined in **AQ-31**.

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* As modified in Ex. 51, FSA Addendum #1, dated March 7, 2003

AQ-1 The project owner shall operate the project in accordance with all data and specifications submitted with the application under which this license is issued unless otherwise noted below.

Verification: The project owner shall either certify compliance with this condition or provide documentation regarding the upsets or operation compliance violations that occurred as part of the Quarterly Operational Report (**AQ-SC7**). The project owner shall make the site available for inspection by representatives of the District, CARB and the Energy Commission.

AQ-2 The project equipment shall be properly maintained and kept in good operating condition at all times.

Verification: The project owner shall certify that the equipment has been maintained and kept in good operating as part of the Quarterly Operational Report (**AQ-SC7**). The project owner shall make the site available for inspection by representatives of the District, CARB, and the Energy Commission.

AQ-3 The project owner shall provide access, facilities, utilities, and any necessary safety equipment for source testing and inspection upon request of the Air Pollution Control District.

Verification: The project owner shall make the site available for inspection by representatives of the District, CARB, and the Energy Commission. The project owner shall provide access, facilities, utilities and necessary safety equipment for source testing available upon request to representatives of the District.

AQ-4 The project owner shall obtain any necessary District permits and Energy Commission approval for all ancillary combustion equipment including emergency engines, prior to on-site delivery of the equipment.

Verification: The project owner shall submit to the District and the CPM any necessary permit applications for ancillary combustion equipment prior to the on-site delivery of the equipment.

AQ-5 The exhaust stacks for each turbine power station shall be at least 110 feet in height above site base elevation.

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

AQ-6 The project owner shall submit to the District the final selection, design parameters and details of the selective catalytic reduction (SCR) and oxidation catalyst emission control systems. Such information may be submitted to the District as trade secret and confidential pursuant to District Rules 175 and 176.

Verification: The project owner shall submit SCR and oxidation catalyst design details to the District and the CPM at least 90 days prior to commencement of construction.

AQ-7 The exhaust stacks for each turbine shall be equipped with source test ports and platforms to allow for the measurement and collection of stack gas samples consistent with all approved test protocols. The ports and platforms shall be constructed in accordance with District Method 3A, Figure 2, and approved by the District.

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

AQ-8 This equipment shall be fired on natural gas only. The sulfur content of the natural gas used shall not exceed 0.75 grains per 100 standard cubic feet of natural gas. The project owner shall maintain quarterly records of fuel content (grains of sulfur compounds per 100 scf of natural gas) and higher heating value (BTU/scf) and shall make these records available to District personnel upon request. Specifications, including sulfur content and higher heating value, of all natural gas, other than Public Utility Commission-regulated natural gas, shall be submitted to the District for written approval prior to use.

Verification: The project owner shall compile continuous fuel sulfur content and higher heating value monitoring data from the gas supplier, or if such data is not available, the project owner shall test the sulfur content and higher heating value of the natural gas fuel monthly using recognized ASTM method(s). The fuel sulfur content data shall be submitted to the CPM in the Quarterly Operational Report (**AQ-SC7**).

AQ-9 A Continuous Emission Monitoring System (CEMS) shall be installed and calibrated to measure and record the concentration of NOx, CO, and O_2 in the exhaust gas on a dry basis (ppmvd). Upon initial startup, a properly installed and calibrated CEMS shall thereafter be in full operation at all times when the turbine is in operation. If needed prior to installation and approval of the permanent CEMS, a portable CEMS which has been properly calibrated, may be used to continuously measure and record these parameters. Within 90 days after the commencement of commercial operations (as defined by 40 CFR 72.2), the CEMS shall be certified.

Protocol: Initial startup shall be defined as the time when fuel is first fired in the equipment and shall not include the purging of foreign material from inside of the steam paths and from the outside of the tubes also known as steam blow/boilout. Commercial operation is defined for this condition as the instance when power is sold to the grid.

Verification: The project owner shall provide the information necessary for compliance with this condition in the permanent CEMS protocol required under Condition **AQ-13**.

AQ-10 At least 60 days prior to initial startup of the gas turbines, the project owner shall submit a protocol to the District, for written approval, that shows how the permanent CEMS will be able to meet all District monitoring requirements and measure NOx emissions at a level of 2.0 ppmv.

Verification: The project owner shall provide the information necessary for compliance with this condition in the permanent CEMS protocol required under Condition **AQ-13**.

AQ-11 The project owner shall submit a protocol to the District for approval which shall specify a method of determining the CO/VOC surrogate relationship that shall be used to demonstrate compliance with all VOC emission limits.

Verification: The project owner shall submit the CO/VOC surrogate determination protocol to the CPM and District at least 60 days prior to initial startup of the turbine. This protocol can be provided as part of the Source Testing Protocol required by condition **AQ-43**.

AQ-12 Prior to initial startup, each turbine shall be equipped with continuous monitors to measure or calculate and record the following operational characteristics of each unit:

- natural gas flow rate (scfh);
- natural gas flow rate to duct burners (scfh);
- heat input rate (MMBtu /hr);
- exhaust gas flow rate (dscfm);
- exhaust gas temperature (ºF); and
- power output (gross MW).

Protocol: The monitors shall be installed, calibrated, and maintained in accordance with an approved protocol. This protocol, which shall include calculation methodology, shall be submitted to the District for written approval. The monitors shall be in full operation at all times when the turbine is in operation.

Verification: At least 60 days prior to the initial startup of the gas turbines, the project owner shall submit a turbine operation monitoring protocol to the District for written approval. The project owner shall provide the CPM documentation of the District's written approval of this protocol, within 15 days of its receipt. The project owner shall make the site available for inspection of the turbine operation monitors and monitor maintenance records by representatives of the District, CARB, and the Energy Commission.

AQ-13 All CEMS shall be certified, calibrated, maintained, and operated for the monitoring of NOx and CO in accordance with the applicable regulations including the requirements of Sections 75.10 and 75.12 of Title 40, Code of Federal Regulations Part 75 (40 CFR 75), the performance specifications of Appendix A of 40 CFR 75, the quality assurance procedures of Appendix B of 40 CFR 75, and a CEMS protocol approved by the District. The project owner shall submit a CEMS operating protocol to the District for written approval.

Verification: At least 60 days prior to the operation of the permanent CEMS, the project owner shall submit a CEMS operating protocol to the District for

written approval. The project owner shall provide the CPM documentation of the District's written approval of the CEMS operating protocol, within 15 days of its receipt. The project owner shall make the site available for inspection of the CEMS and CEMS maintenance records by representatives of the District, CARB, and the Energy Commission.

AQ-14 The District shall be notified in writing prior to any proposed changes to be made in any Continuous Emission Monitor (CEM) software which affect the value of data displayed on the CEM monitors and recorded for reporting with respect to the parameters measured by their respective sensing devices.

Verification: The project owner shall provide the District and the CPM copies of any proposed CEMS software change correspondence at least two weeks prior to any proposed changes.

AQ-15 A monitoring plan in conformance with 40 CFR 75.53 shall be submitted to U.S. EPA Region 9 and the District at least 45 days prior to the Relative Accuracy Test Audit test, as required in 40 CFR 75.62.

Verification: The project owner shall notify the CPM of the submittal of the monitoring plan required under this condition within 15 days of its submittal to the District. The project owner shall provide the CPM documentation of the District approval of the monitoring plan required under this condition within 15 days of its receipt.

AQ-16 No later than 90 days after each unit commences commercial operation (defined for this condition as the instance when power is sold to the grid), a Relative Accuracy Test Audit (RATA) and other required certification tests shall be performed and completed on the CEMS in accordance with 40 CFR Part 75 Appendix A Specifications and Test Procedures. At least 60 days prior to the test date, the project owner shall submit a test protocol to the District for written approval. Additionally, the District shall be notified a minimum of 45 days prior to the test so that observers may be present. Within 30 days of completion of this test, a written test report shall be submitted to the District for approval.

Verification: The project owner shall notify the CPM of the submittal of the RATA test protocol and the RATA test report within 15 days of its submittal to the District. The project owner shall notify the CPM and the District of the RATA test date at least 45 days prior to the conducting the RATA test. The project owner shall provide the CPM documentation of the District approval of the RATA test protocol and RATA test report within 15 days of its receipt.

AQ-17* ** The total aggregate emissions of oxides of nitrogen (NOx), calculated as nitrogen dioxide, from all emission units at this stationary source shall not exceed 104.3 tons for each rolling 12-calendar month period. Upon surrender of sufficient emission offsets in compliance with

District Rules 20.1 and 20.3, the total aggregate NOx limit shall increase up to 124.4 tons for each rolling 12-calendar month period. These additional emission offsets must have been publicly noticed through the emission reduction credit banking process or District notification specific for this project, and in a California Energy Commission notification specific for this project.

Aggregate emissions shall begin accruing at the initial startup of either turbine. Compliance with the aggregate NOx limit shall be verified using the CEMS on each gas turbine as well as U.S. EPA- or CARB-certified NOx emission factors, testing results, or other representative emissions information for all other combustion equipment.

Verification: The project owner shall submit to the CPM and the District turbine emissions CEMS data and calculations demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

*** As modified in Ex. 58, FSA Addendum #3, dated May 2, 2203

AQ-18 The total aggregate emissions of Volatile Organic Compounds (VOC) from all emission units at this stationary source shall not exceed 50 tons for each rolling 12-calendar month period. The VOC emissions shall begin accruing at the initial startup of either turbine. Compliance with this limit shall be based on District-approved source testing and the District-approved CO/VOC surrogate relationship.

Verification: The project owner shall submit to the CPM and the District turbine emissions CEMS data and calculations demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-19 The project owner shall maintain records, at least on a calendar monthly basis, of total aggregate mass emissions of NOx and VOC, in tons per rolling 12-calendar month period, from all equipment, excluding permit exempt equipment, at this stationary source for the previous 12-month period. These records shall be maintained on site for a minimum of five years and made available to the District upon request.

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

AQ-20 To ensure compliance with District Rule 69.3.1 and except during any period of time for which a variance from Rule 69.3.1 has been granted by the Air Pollution Control District Hearing Board, when operating with post-combustion air pollution control equipment, emissions of oxides of nitrogen (NOx), calculated as nitrogen dioxide, from each turbine shall not exceed 11.8 parts per million by volume on a dry basis (ppmvd)

calculated over each one-hour averaging period and corrected to 15 percent oxygen, excluding shutdowns, and extended and regular startups.

Verification: The project owner shall submit to the CPM and the District turbine CEMS emissions data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-21 During shutdowns, and extended and regular startups, when operating with post-combustion air pollution control equipment, the total emissions from both turbines combined shall not exceed 200 pounds per hour of oxides of nitrogen (NOx), calculated as nitrogen dioxide and measured over each clock hour period. Additionally, when operating with post-combustion air pollution control equipment, the total emissions when only one turbine is in operation shall not exceed 100 pounds per hour of NOx, calculated as nitrogen dioxide and measured over each clock hour period. (To comply with District Rule 20.3 (d)(2)(i)).

Verification: The project owner shall submit to the CPM and the District turbine CEMS startup and shutdown emissions data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-22 During extended startup and shutdown, when operating with post-combustion air pollution control equipment, the total emissions from both turbines combined shall not exceed 3,384 pounds per hour of carbon monoxide (CO), averaged over a one-hour averaging period. Additionally, when operating with post-combustion air pollution control equipment, the total emissions when one turbine is in operation shall not exceed 1,692 pounds per hour of CO over a one-hour averaging period. (To comply with District Rule 20.3 (d)(2)(i)).

Verification: The project owner shall submit to the CPM and the District turbine CEMS startup and shutdown emissions data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

Commissioning Period Conditions

AQ-23 Beginning at initial startup of each turbine, a "Commissioning Period" for each turbine shall commence. This Commissioning Period shall end 120 days after initial startup or immediately after written acceptance of clear custody and control of the equipment is turned over to the project owner, or after not more than 300 hours of gas turbine operation whichever comes first. During the Commissioning Period, only the emission limits specified in Conditions Nos. **AQ-17, 18, 19, 20, 21, 24, 25, 26** and **27** shall apply.

Verification: The project owner shall submit to the CPM and the District turbine operating data demonstrating compliance with this condition as part of the Commissioning Status Report (**AQ-28**).

AQ-24 During the Commissioning Period when operating without any post-combustion air pollution control equipment, the total emissions from both turbines combined shall not exceed 900 pounds per hour of oxides of nitrogen (NOx), calculated as nitrogen dioxide and measured over each clock hour period. Additionally, when operating without any post-combustion air pollution control equipment, the total emissions when only one turbine is in operation shall not exceed 450 pounds per hour of NOx, calculated as nitrogen dioxide and measured over each clock hour period. These emission limits shall apply during commissioning, shutdowns, transients, and extended and regular startups to comply with District Rule 20.3(d)(2)(i).

Verification: The project owner shall submit to the CPM and the District turbine CEMS emissions data demonstrating compliance with this condition as part of the Commissioning Status Report (**AQ-28**). A "transient hour" is defined in **AQ-31**.

AQ-25 Within 120 days or 300 hours of gas turbine operation, whichever comes first, after initial startup of each turbine, the project owner shall install post-combustion air pollution control equipment to minimize emissions from this equipment. Once installed, the post-combustion air pollution control equipment shall be maintained in good condition and, with the exception of periods during startup and shutdown, shall be in full operation at all times when the turbine is in stable operation.

Verification: The project owner shall provide the CPM and the District operating data showing compliance with this condition as part of the Commissioning Status Report (**AQ-28**). The project owner shall make the site available for inspection of the post-combustion air pollution control equipment and the CEMS records by representatives of the District, CARB, and the Energy Commission.

AQ-26 During the Commissioning Period when operating without any post-combustion air pollution control equipment, the total emissions from both turbines combined shall not exceed 4,000 pounds per hour of carbon monoxide (CO), measured over each clock hour period. Additionally, when operating without any post-combustion air pollution control equipment, the total emissions when one turbine is in operation shall not exceed 2,000 pounds per hour of CO measured over each clock hour period. These emission limits shall apply during commissioning, shutdowns, transients, and extended and regular startups to comply with District Rule 20.3(d)(2)(i).

Verification: The project owner shall submit to the CPM and the District turbine CEMS emissions data demonstrating compliance with this condition as part of the Commissioning Status Report (**AQ-28**). A "transient hour" is defined in **AQ-31**.

AQ-27 To ensure compliance with District Rule 69.3.1 and except during any period of time for which a variance from Rule 69.3.1 has been granted by the Air Pollution District Hearing Board, when operating without any post combustion air pollution control equipment, the emissions of oxides of nitrogen (NOx), calculated as nitrogen dioxide, from each turbine shall not exceed 19.6 parts per million by volume on a dry basis (ppmvd) calculated over each one-hour averaging period and corrected to 15 percent oxygen, excluding shutdowns, regular and extended startups.

Verification: The project owner shall submit to the CPM and the District turbine CEMS emissions data demonstrating compliance with this condition as part of the Commissioning Status Report (**AQ-28**).

AQ-28 After the end of the Commissioning Period for each turbine, the project owner shall submit a written progress report to the District. This report shall include, at minimum, the date the Commissioning period ended, the periods of startup, the emission of NOx and CO during startup, and the emissions of NOx and CO during steady state operation with and without duct burner firing. NOx and CO emissions shall be reported in both ppmv at 15 percent O_2 and lbs/hr. This report shall also detail any turbine or emission control equipment malfunction, upset, repairs, maintenance, modifications, or replacements affecting emissions of air contaminants that occurred during the Commissioning Period.

Verification: The project owner shall submit to the District and the CPM, within 30 days after the end of the Commissioning Period for each turbine, a Commissioning Status Report that demonstrates compliance with this condition and the emissions limits and other requirements of Conditions **AQ-23** through **AQ-27** and **AQ-29**.

AQ-29 Before operating an SCR system, continuous monitors shall be installed on each SCR system to monitor or calculate, and record the following:

- ammonia injection rate (lbs/hr)
- SCR catalyst temperature (ºF)

Protocol: The monitors shall be installed, calibrated, and maintained in accordance with an approved protocol. This protocol, which shall include the calculation methodology, shall be submitted to the District for written approval at least 60 days prior to initial startup of the gas turbines with the SCR system. The monitors shall be in full operation at all times when the turbine is in operation.

Verification: The project owner shall submit the proposed protocol for the SCR system continuous monitors, at least 60 days prior to initial startup of the gas turbines with the SCR system, to the District and CPM for approval. The project owner shall make the site available for inspection of the SCR system continuous monitors and monitoring records by representatives of the District, CARB, and the Energy Commission.

Conditions for On-Going Operations

AQ-30 For the purpose of the Determination of Compliance and Authority to Construct, the period described as "on-going" operations of the turbines shall commence immediately following the end of the Commissioning Period. Condition Nos. **AQ-17, 18, 19, 20, 21, 24, 26,** and **27** shall continue to apply during on-going operations.

Verification: The project owner shall certify that compliance with the conditions for "on-going" operations commenced immediately following the end of the Commissioning Period with the first Quarterly Operational Report (**AQ-SC7**) following the Commissioning Status Report (**AQ-28**).

AQ-31 Emissions of oxides of nitrogen (NOx) from each gas turbine/heat recovery steam generator train, as measured at the exhaust stack exit, calculated as nitrogen dioxide, shall not exceed 2.0 parts per million by volume on a dry basis (ppmvd) corrected to 15 percent oxygen. In determining compliance with this emission limitation, the following averaging periods shall apply:

- During any clock hour when duct firing is occurring (a "duct-fired hour"): three-hour average, calculated as the average of the duct fired hour, the clock hour immediately prior to and the clock hour immediately following the duct-fired hour.
- During any clock hour when the difference between the maximum MW produced by the generator train and the minimum MW produced by the generator train exceeds + 25 MW (a "transient hour"): three-hour average, calculated as the average of the transient hour, the clock hour immediately prior to and the clock hour immediately following the transient hour.
- All other hours: one-clock hour average.

Compliance with this limit shall be based on CEMS data for each unit averaged over each averaging period, or portions thereof, as applicable, excluding time when the equipment is operated under startup or shutdown conditions and time that the equipment is not in operation. Compliance with this limit shall also be verified through an initial source test and at least annual source testing thereafter.

Verification: The project owner shall submit to the District and the CPM turbine initial source test data, CEMS emissions data, and annual source test data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-32 The emissions of carbon monoxide (CO) from each turbine shall not exceed 4.0 parts per million by volume (three-hour rolling average) on a dry basis (ppmvd) corrected to 15 percent oxygen. Compliance with these limits shall be based on CEMS data for each unit and averaged over each rolling three-hour period or portion there of, excluding time when the equipment is operated under startup or shutdown conditions and time that the equipment is not in operation. Compliance with this limit shall also be verified through an initial emission source test and at least annual source testing thereafter.

Verification: The project owner shall submit to the District and the CPM turbine initial source test data, CEMS emissions data, and annual source test data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-33 The emissions of volatile organic compounds (VOC) from each turbine, calculated as methane, shall not exceed 2.0 parts per million by volume (three-hour average) on a dry basis (ppmvd) corrected to 15 percent oxygen. Compliance with this limit shall be based on District-approved source testing, the District-approved CO/VOC surrogate relationship, and on CO CEMS data for each unit, averaged over each rolling three-hour period or portion thereof, when using CO CEMS data, excluding time when the equipment is operated under startup or shutdown conditions and time the equipment is not in operation. The CO/VOC surrogate relationship shall be verified and/or modified, if necessary, based on initial emissions source tests and at least annual source testing thereafter.

Verification: The project owner shall submit to the District and the CPM turbine initial source test data, CEMS emissions data, annual source test data, and calculations demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-34 Replaced by **AQ-SC11**.

Verification: See **AQ-SC11**.

AQ-35 The maximum total dissolved solids (TDS) concentration of the reclaimed water to be used in the cooling towers shall not exceed 4,000 mg/l. This concentration shall be verified through quarterly testing of the reclaimed water.

Verification: The project owner shall submit to the District and the CPM the quarterly cooling tower total dissolved solids test results demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-36 When operating without the duct burner, the emissions from each turbine shall not exceed the following emission limits, except during startup or shutdown conditions, as determined by the CEMS and/or District approved emissions source testing. Compliance with the NOx limit shall be based on each rolling one-hour averaging period or portion thereof, and compliance with CO and VOC limits shall be based on each rolling three-hour averaging period or portion thereof.

Pollutant	Emission Limit, lbs/hr
Oxides of Nitrogen, NOx (calculated as NO_2)	13.4
Carbon Monoxide, CO	16.3
Volatile Organic Compounds, VOC	4.0

Verification: The project owner shall submit to the District and the CPM turbine CEMS emissions data and calculations demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-37 When operating with the duct burner, the emissions from each turbine shall not exceed the following emission limits, except during startup or shutdown conditions, as determined by the Continuous Emissions Monitoring System (CEMS) and continuous monitors and / or District approved emissions source testing. Compliance with the NOx, CO, and VOC limits shall be based on each rolling three-hour averaging period.

Pollutant	Emission Limit, lbs/hr
Oxides of Nitrogen, NOx (calculated as NO_2)	14.9
Carbon Monoxide, CO	18.1
Volatile Organic Compounds, VOC	7.3

Verification: The project owner shall submit to the District and the CPM turbine CEMS emissions data and calculations demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-38 This maximum combined fuel input into the duct burners shall not exceed 780,000 MMBtu per rolling 12-calendar month period. The project owner shall maintain a log that contains, at a minimum, the dates, times, and duct burner fuel consumption when one or both turbines are operated with the duct burners in operation. These logs shall be maintained on site for a minimum of five years and made available to District personnel upon request.

Verification: The project owner shall submit to the District and the CPM duct burner fuel consumption data demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-39 Extended startup shall be defined as the time necessary to reach minimum operating conditions for the air pollution control equipment and to meet the emission limits specified in Conditions **AQ-31** and **AQ-32**, not to exceed four hours, after initial firing of the turbine following a shutdown period of greater than or equal to 48 hours.

Verification: The project owner shall submit to the District and the CPM extended startup frequency and duration data as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-40 Regular startup shall be defined as the time necessary to reach minimum operating conditions for the air pollution control equipment and to meet the emission limits specified in Conditions **AQ-31** and **AQ-32**, not to exceed two hours in duration, after initial firing of the turbine following a shutdown period of less than 48 hours.

Verification: The project owner shall submit to the District and the CPM startup frequency and duration data as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-41 Shutdown is defined as the period beginning with the lowering of the output of a gas turbine below 50 percent of its base capacity and below the minimum operating conditions for the air pollution control equipment, and ending when combustion has ceased.

Verification: The project owner shall submit to the District and the CPM shutdown frequency and duration data as part of the Quarterly Operational Report (**AQ-SC7**).

AQ-42 The emissions of particulate matter less than 10 microns (PM_{10}) shall not exceed 14.0 lbs/hr for each turbine with and without duct burner firing. Compliance with this limit shall be based on an initial emissions source test and at least annual source testing thereafter.

Verification: The project owner shall provide to the District and the CPM the PM_{10} source test results, as required by **AQ-43** and **AQ-45**, to demonstrate compliance with this condition.

AQ-43 Within 30 days after completion of the Commissioning Period, an initial emissions source test shall be conducted by an independent, CARB approved tester at the project owner's expense to show compliance with all applicable emission limits. A source test protocol shall be submitted to

the District for written approval at least 60 days prior to source testing. The source test protocol shall comply with the following requirements:

a) Measurement of oxides of nitrogen (NOx), carbon monoxide (CO), and stack gas oxygen shall be conducted in accordance with the San Diego Air Pollution Control District Method 100, or equivalent, as approved by the District Air Pollution Control Officer.

b) Measurements of particulate matter less than 10 microns shall be conducted in accordance with the U.S. Environmental Protection Agency (U.S. EPA) Methods 201A and 202 or equivalent, as approved by the District Air Pollution Control Officer.

c) Measurements of volatile organic compounds (VOC) shall be conducted in accordance with San Diego Air Pollution Control District Methods 25A and / or 18, or equivalent, as approved by the District Air Pollution Control Officer.

d) Measurement of ammonia shall be conducted in accordance with BAAQMD ST-1B, or equivalent, as approved by the District Air Pollution Control Officer.

e) Source testing shall be performed at no less than 80 percent of the maximum fired capacity for the combined-cycle system.

Verification: The project owner shall submit the proposed protocol for the source tests 60 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 45 days prior to the proposed source test date and time.

AQ-44 Within 30 days after completion of the Commissioning Period, an initial emissions source test shall be conducted by an independent, CARB approved tester at the project owner's expense to determine the emissions of toxic air contaminants (TAC). A source test protocol shall be submitted to the District for written approval at least 60 days prior to source testing. The source test will not include testing of the cooling towers. At a minimum the following compounds shall be tested for and emissions, if any, quantified:

- Acetaldehyde
- Acrolein
- Benzene
- Formaldehyde
- Toluene
- Xylenes

Protocol: This list of compounds may be adjusted by the District based on source test results to ensure compliance with District Rule 1200 is demonstrated. The District may require one or more or

additional compounds to be quantified through source testing as needed to ensure compliance with Rule 1200.

Verification: The project owner shall submit the proposed protocol for the source tests 60 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 45 days prior to the proposed source test date and time.

AQ-45 A final source test report shall be submitted to the District and the CPM for review and approval. The testing contractor shall include, as part of the test report, a certification that to the best of its knowledge the report is a true and accurate representation of the test conducted and the results.

Verification: The project owner shall submit certified initial source test results no later than 60 days following the initial source test date to both the District and CPM for approval.

AQ-46 The District may require toxic air contaminant emissions to be quantified through source testing periodically as needed to ensure compliance with Rule 1200.

Verification: The project owner shall submit the proposed protocol for the source tests 60 days prior to the proposed source test date to both the District and CPM for approval. The project owner shall notify the District and CPM no later than 45 days prior to the proposed source test date and time.

AQ-47 This equipment shall be source tested on at least an annual basis to show continued compliance with all applicable emissions limits, unless otherwise directed in writing by the District. An annual CEMS Relative Accuracy Test Audit (RATA), where required, may be used to fulfill the annual source testing requirement for NOx and CO. If the testing will be performed by someone other than the District, a source test protocol shall be submitted to the District for written approval at least 60 days prior to source testing. The source test protocol shall comply with the same requirements as listed in Condition **AQ-43**. Within 60 days after completion of testing, a final test report shall be submitted to the District for review and approval.

Verification: The project owner shall, if the annual compliance source test is not conducted by the District, submit certified annual compliance source test and/or CEMS RATA results no later than 60 days following the annual source test and/or CEMS RATA date to both the District and CPM for approval. If the source test is conducted by the District the project owner shall provide a copy of the source test results to the CPM for review within 15 days of their receipt from the District.

AQ-48 The emissions of any single federal hazardous air pollutant shall not equal or exceed 10 tons, and the aggregate emissions of all federal hazardous air pollutants, shall not equal or exceed 25 tons in any rolling 12-calendar month period. If emissions exceed these limits, the project owner shall apply to amend these limits and conduct a Maximum Achievable Control Technology (MACT) analysis in accordance with applicable federal U.S. EPA regulations. Compliance with this limit shall be based on District approved VOC/TAC and CO/VOC surrogate relationships and the result of District approved source testing.

Verification: The project owner shall provide hazardous air pollutant emissions calculations using the District/CPM approved CO/VOC and VOC/TAC surrogate relationships demonstrating compliance with this condition as part of the Quarterly Operational Report (**AQ-SC7**). If emissions exceed the limits specified in this condition the project owner shall apply to amend these limits and conduct a Maximum Achievable Control Technology (MACT) analysis in accordance with applicable federal U.S. EPA regulations.

AQ-49* ** Prior to the initial startup of this equipment, the project owner shall surrender to the District Class A Emission Reduction Credits (ERCs) in an amount equivalent to 125.2 tons per year of NOx to offset the maximum allowable of 104.3 tons per year of NOx emissions for this facility. When additional offsets are available up to 149.3 tons per year, maximum allowable emissions will increase to the maximum potential of 124.4 tons per year of NOx emissions.

The CPM may approve any such change to the ERC list contained in Air Quality Condition **AQ-SC5** based on the criteria provided in **AQ-SC5.**

Verification: The project owner shall surrender the required ERCs to the District and provide copies of all related correspondence within 15 days of submittal to the CPM for review and approval.

*** As modified in Ex. 58, FSA Addendum #3, dated May 2, 2203

Additional General Conditions

AQ-50 For each emission limit expressed as pounds per hour or parts per million based on a one-hour averaging period, compliance shall be based on each rolling continuous one-hour period using data collected at least once every 15 minutes when compliance is based on continuous emissions data.

Verification: The project owner shall verify that the emission data provided in the Quarterly Operational Report (**AQ-SC7**) is calculated as specified above and the project owner shall make the CEMS emission data available for inspection by representatives of the District, CARB, and the Energy Commission upon request.

AQ-51 For each emission limit expressed as pound per hour or parts per million based on a three-hour averaging period, compliance shall be based on each rolling continuous three-hour period using data collected at least once every 15 minutes when compliance is based on continuous emissions monitoring data.

Verification: The project owner shall verify that the emission data provided in the Quarterly Operational Report (**AQ-SC7**) is calculated as specified above and the project owner shall make the CEMS emission data available for inspection by representatives of the District, CARB, and the Energy Commission upon request.

AQ-52 All records required by Conditions **AQ-1** through **AQ-55** shall be maintained on site for a minimum of five years and made available to the District upon request.

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

AQ-53 Pursuant to 40 CFR 72.30(b)(2)(ii) of the Federal Acid Rain Program, the project owner shall submit an application for a Title IV Operating Permit at least 24 months prior to the initial startup of this equipment.

Verification: The project owner shall provide copies of the Title IV Operating Permit application to the District and the CPM at least 24 months prior to the initial startup of the turbines.

AQ-54 The project owner shall comply with the continuous emission monitoring requirements of 40 CFR Part 75.

Verification: The project owner shall provide the District and the CPM with the information necessary to demonstrate compliance with this condition in the permanent CEMS protocol (**AQ-13**) and as part of the Quarterly Operational Reports (**AQ-SC7**).

AQ-55 The project owner shall submit an application to the District for a Federal (Title V) Operating Permit, in accordance with District Regulation XIV within 12 months after initial startup of this equipment.

Verification: The project owner shall provide copies of the Title V Operating Permit application to the District and the CPM within 12 months after initial startup of the turbines.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential public health effects from project emissions of toxic air contaminants. In this analysis, the Commission determines whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[24]

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.[25] (Ex. 50, p. 4.7-1.) 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.[26] 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.)

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[24] This Decision discusses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in **Hazardous Materials Management** and **Worker Safety and Fire Protection**. Electromagnetic fields are discussed in the section on **Transmission Line Safety and Nuisance**. Potential impacts to soils and surface water sources are discussed in the **Soil and Water Resources** section. Hazardous and non-hazardous wastes are described in **Waste Management**.

[25] 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. 1, § 5.15.3; San Diego APCD Rule 1200(d)(i).)

[26] 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, AB 2588 (Health and Safety Code, § 44360 et seq.). (Ex. 1, § 5.15.2.)

1. Health Risk Assessment

Applicant performed a health risk assessment (HRA) that was reviewed by Staff and the San Diego Air Pollution Control District (APCD or Air District). (Ex. 52, Attachment.) Applicant's risk assessment employed a scientifically accepted methodology that is consistent with CAPCOA Guidelines and with methods developed by the California Office of Environmental Health Hazard Assessment (OEHHA). (Ex. 1, § 5.15.2.2 et seq.; Ex. 50, pp. 4.7-1 through 4.7-4.) This approach emphasizes a worst-case "screening" analysis to evaluate the highest level of potential impact. (4/29/03 RT, p. 33.) The HRA procedure consists of the following steps:

- A hazard identification to determine pollutants of concern associated with the turbine operations;
- An exposure assessment that includes toxic air contaminant emission calculations and the simulation of pollutant transport using atmospheric dispersion modeling; and
- A risk characterization that analyzes potential health risks from these calculated exposures, which includes identifying the location of maximum cancer and non-cancer health risks.[27]

Subsequent to identifying the locations of maximum impact, a multi-pathway analysis was performed for the maximum impact and sensitive receptor locations. The multi-pathway analysis included the inhalation pathway, dermal (skin) absorption, ingestion of soil with deposited pollutants, and exposure to pollutants potentially in mother's milk. (Ex. 1, § 5.15-5.)

[27] The location of maximum impact was determined by computer modeling, which includes meteorological and elevated terrain considerations. (4/29/03 RT, pp. 69-71; Ex. 1, § 5.15.2.3; Ex. 50, p. 4.7-12.) Applicant described that location as the West Hills, about 2 miles west/southwest of the PEP site, in an undeveloped area of elevated terrain where no residences presently exist. (4/29/03 RT, p. 70.)

The HRA addresses three categories of health impacts: acute (short-term), chronic (long-term), and carcinogenic health effects. (Ex. 1, § 5.15.2.1; Ex. 50, p. 4.7-4.)

Regulatory agencies use the hazard index method to assess the likelihood of acute or chronic non-cancer effects. In this approach, the 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,[28] these indices are added together to obtain a total hazard index. A total hazard index of 1.0 or less is considered an insignificant effect. (Ex. 50, pp. 4.7-3 et seq., Ex. 1, p. 5.15-3.)

For inhalation cancer risk, the estimated airborne concentration level for each carcinogen released is multiplied by the respective inhalation unit risk. For non-inhalation exposures, the estimated exposure for each carcinogen released is multiplied by the potency factor for that carcinogen. The cancer unit risk factors and cancer potency factors are established by OEHHA. Once all the individual inhalation and non-inhalation cancer risks are determined, the total cancer risk is computed by summing the cancer risks for each carcinogen.[29] The chief exposure assumption is one of continuous exposure to a maximally exposed individual over a 70-year period at each identified receptor location. (Ex. 1, § 5.15.2.1.)

Project emissions were calculated based on the Air District's updated air toxic emission factors, developed for AB 2588 Toxic "Hot Spots" source test data. (Ex.

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[28] The project's noncriteria pollutants that were considered in analyzing non-cancer effects include: ammonia, used for the SCR system for NOx control, acetaldehyde, acrolein, benzene, 1,3 butadiene; ethylbenzene, formaldehyde, hexane, naphthalene, polycyclic aromatic hydrocarbons (PAHs), propylene oxide, toluene, and xylenes. (Ex. 1, § 5.15, Table 5.15-1; Ex. 50, p. 4.7-10.)

[29] The following noncriteria pollutants were considered with regard to possible cancer risk: acetaldehyde, benzene, 1,3 butadiene, formaldehyde, propylene oxide, composite and speciated PAHs. (Ex. 1, § 5.15, Table 5.15-1.)

1, p. 5.15-3.) According to Staff, the threshold of significance for cancer risk is an incremental risk of ten in one million. (Ex. 50, p. 4.7-4; 4/29/03 RT, p. 33-34.) This significance level is consistent with the standard used by the San Diego APCD and other air districts in California under Health and Safety Code section 44362(b), which requires notification of nearby residents when there is a significant health risk from a facility.[30] (Ex. 50, pp. 4.7-3 through 4.7-5; Ex. 35, Balentine, p. 4; RT, 4/29/03, pp. 33-34, 50-52.)

The use of OEHHA cancer unit risk factors, cancer potency factors, and RELs, when combined with U.S. EPA and Air District approved dispersion modeling methodologies, provides an upper bound estimate of the potential risks. Actual risks are not expected to be any higher than the predicted risks and are likely to be substantially lower. (4/29/03 RT, p. 33; Ex.1, p. 5.15-7.)

2. Potential Impacts

Applicant used a five-mile radius of the site to locate sensitive receptors (schools, day care centers, hospitals). (Ex. 1, § 5.15, Table 5.15-6.) The PEP site is in an area where nearby terrain elevations exceed the release height of pollutants from the project's emission sources. Applicant used two USEPA-approved dispersion models, the ISCST3 model and the AERMOD model, which are designed estimate pollutant impacts in complex terrain configurations.[31] (Ex. 1, Appendix

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[30] Under the Air Toxics "Hot Spots" and the Proposition 65 programs, a risk of 10 in a million is considered significant and used as a threshold for public notification. The Proposition 65 significance level applies separately to each cancer-causing substance, whereas Staff determines significance based on the total risk from all cancer-causing chemicals. (Ex. 50, p. 4.7-4.) The Air District allows an incremental risk of ten in a million for a source such as PEP where the best available control technology for air toxics (T-BACT) is used. (San Diego APCD Rule 1200(d)(i); Ex. 1, p. 5.15-3.)

[31] The ISCST3 model was used to identify ground-level concentrations for terrain locations where the receptor elevations were less than the elevation of the top of the heat recovery steam generator (HRSG) stack. The AERMOD model was used for areas in which the terrain elevation exceeded the tops of the HRSG stacks. (Ex. 1, Appendix E, pp. 3-7 et seq.) To identify points of maximum impact, the Applicant employed a multi-scale grid of receptors. Near the site, receptors were placed along the property boundary at 50-meter increments. Additional receptors were

E, pp. 3-1 et seq.). Applicant subsequently updated the health risk assessment to evaluate ammonia emissions from the cooling tower and to reflect the reduction of ammonia slip from the HRSGs from 10 ppm to 5 ppm as requested by the Air District. (Ex. 35, Balentine, p. 5.) The modeling results were incorporated into the final health risk assessment as described in Applicant's testimony. (*Id*. at pp. 5-7 and Schilling, Public Health, p. 3 et seq.)

a. Construction Phase

The construction phase is expected to take approximately 21 months. Potential construction-related public health impacts are due to (1) windblown dust from site grading and other construction-related activities, and (2) diesel fuel emissions from heavy equipment and vehicles used in construction. (Ex. 50, pp. 4.7-8 and 4.7-9; Ex. 1, Appendix E, Table E2-5 and E2-30; Ex. 1, § 5.15-13 et seq.)

Applicant's modeling results indicate the worst-case individual cancer risk due to diesel exhaust emissions during project construction is estimated at 0.33 per million at the site of the maximum exposed individual resident (MEIR). Risk to the maximum exposed individual worker (MEIW) at a commercial building nearest to the project site is 3.9 per million while risk at the point of maximum impact, located at the project property line, is 8.6 per million. These measurements all fall below the ten in one million significance factor.[32] (Ex. 50, p. 4.7-9; Ex. 1, p. 5.15-16 and 5.15-17.) The maximum chronic health index during construction is estimated to be 0.2 at the property line, 0.01 at the maximum residential exposure, and 0.1 for off-site workers, all well below the significance level of 1.0. (Ex. 35, Balentine, Public Health, p. 5.) There are no

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placed at increasingly greater intervals with increasing distance from the site, up to a spacing of 500 meters out to approximately 5,500 meters. In areas of complex terrain, receptors with a spacing of 50 meters were placed around five terrain features with elevations exceeding the tops of the HRSG stacks. (*Id.* at pp. 3-20 et seq.)

[32] These calculations were based on the use of fugitive dust control and diesel emissions control measures, which are expected to reduce emissions by about 90 percent. (Ex. 50 p. 4.7-9.)

identified acute health risks from TACs emitted during construction and, thus, no acute hazard analysis was needed. (*Ibid*.) *See* Public Health Table I, below.

Conditions of Certification **AQ-SC3** and **AQSC-4** in the Air Quality section of this Decision require the project owner to implement a Fugitive Dust Mitigation Plan to reduce the potential for adverse health effects from dust inhalation. Condition **AQ-SC3** also requires the project owner to use low-sulfur diesel fuel and to install soot filters on stationary diesel equipment to reduce particulate matter, carbon monoxide, and hydrocarbon emissions. Implementation of these mitigation measures will reduce any potential construction-related health effects to insignificant levels.[33]

b. Operation

Emission sources during project operation include two combustion turbine generators, a steam turbine generator, two HRSGs and associated exhaust stacks, and a wet cooling tower. Emissions due to combustion of natural gas for power generation were estimated based on California Air Toxic Emission Factors (CATEF). (Ex. 1, § 5.15, Tables 5.15-3 and 5.15-4.) Excess ammonia used as a reagent in the SCR process will be emitted as ammonia slip from the HRSG stacks. Ammonia slip is limited to 5 ppm by Condition of Certification **AQ-SC-11** in this Decision. Potential TAC emissions from the cooling tower were based on constituents, including ammonia, found in the reclaimed water based on testing performed at the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF), where the reclaimed water is produced. Cooling tower emissions are discussed below.

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[33] According to Applicant, no significant public health effects are expected during construction since construction-related emissions are temporary (70 days) while risk estimates are based on assumed exposures of 70 years, and potential exposure is localized at the property line. (Ex. 1, p. 5.15-20.)

During project operation, the maximum incremental lifetime cancer risk was calculated to be 0.9 in one million, and was predicted to occur at the West Hills location about 2.0 miles west-southwest of the project site. This incremental cancer risk is less than 10 percent of the ten in one million significance threshold. Thus, operation of the project is expected to pose an insignificant incremental cancer risk. (Ex. 35, Balentine, Public Health, p. 5.)

The total chronic hazard index of 0.09 during operation is below the 1.0 REL significance level and was predicted to occur at the West Hills location approximately 2.0 miles west-southwest of the PEP site. The maximum acute non-cancer hazard index of 0.30 was calculated at the western fence line of the plant site, which is 30 percent of the 1.0 REL significance threshold. Risks at sensitive receptor locations within the five-mile radius of the site were much less than those calculated at the point of maximum impact as shown in Public Health Table 1. Thus, project operation will not pose any significant incremental chronic or acute non-cancer health risks. (4/29/03, RT, pp. 69-71; Ex. 50, p. 4.7-12.) Conditions of Certification **AQ-44**, **AQ-45**, and **AQ-46** establish testing protocols for project-emitted TACs to ensure compliance with SCAPCD Rule 1200.

Public Health Table 1
Overall Palomar Energy Project Health Risks

Risk Parameter	Impact Location			Significance Threshold
	MEI	MEIR	MEIW	
Construction				
Cancer Risk (per million)	8.6	0.33	3.9	10.0
Chronic Hazard Index	0.2	0.01	0.1	1.0
Acute Hazard Index	NA	NA	NA	1.0
Routine Operation				
Cancer Risk (per million)	0.9	<0.9	<0.9	10.0
Chronic Hazard Index	0.09	<0.09	<0.09	1.0
Acute Hazard Index	0.3	<0.3	<0.3	1.0

Source: Ex. 35, Balentine, Public Health, p. 4 et seq., Tables PH-A1 and PH-A2
MEI = Maximum Exposed Individual; MEIR = MEI Resident; and MEIW = MEI Off-Site Worker

3. Cooling Tower Emissions

TACs from the cooling tower originate from contaminants in the cooling source water (reclaimed water from the HARRF) that become entrained in liquid water droplets emitted as cooling tower drift (Ex. 50, p. 4.7-13 et seq.; Ex. 35, Schilling, Public Health, p. 3 et seq.) Intervenor Bill Powers raised two issues regarding cooling tower emissions: (1) the amount of potential ammonia stripping relative to the pH level in the reclaimed water, and (2) the effectiveness of biocides used to reduce emissions of Legionella bacteria. (4/29/03 RT, p. 78.) Much of the parties' testimony on public health focused on these concerns, which we believe were conclusively addressed by the analyses of both Applicant's and Staff's expert witnesses who presented impressive credentials in their fields of expertise. Indeed, Mr. Powers conceded that Staff's analysis was "the best research I've seen" on the topic of Legionella occurrence in cooling tower drift. (4/29/03 RT, p. 84: 17-19.)

To summarize the extensive testimony, we begin with Mr. Powers' formulation of the issues. Mr. Powers asserted that large amounts of ammonia from the cooling tower would potentially be stripped in exhaust air at a relatively low height with relatively low momentum. This is distinguished from the small amount of ammonia contained in drift aerosols that eventually evaporate. Mr. Powers provided his own calculations for ammonia stripping, which he argued should be included in the Health Risk Assessment for acute and chronic non-cancer health risk.[34] (Ex. 108, p. 6, Table 1 and p. 8.)

In response to Mr. Powers' concerns, Applicant revised its Health Risk Assessment (as indicated above) by adjusting its estimated hourly and annual ammonia emission rates based on the Intervenor's assumed design criteria.

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[34] According to Applicant's expert witness, ammonia is not a human carcinogen and thus there is no cancer risk due to emissions of ammonia from the cooling tower. (4/29/03 RT, p. 20:3-5.)

(4/29/03 RT, p. 18:12-15; Ex. 35, Schilling, Public Health, pp. 3, 8, and 9, Tables PH-B1 and PH-B2.) Intervenor Powers subsequently challenged Applicant's revised ammonia emission rates on the basis that ammonia emissions are sensitive to pH concentrations in the tower and the Applicant had not identified a pH limit to validate its most conservative ammonia stripping calculation.[35] The Intervenor proposed setting a pH limit of 8.0 from the HARRF since more ammonia is produced as the pH level increases. (Ex. 109, p. 8; 4/29/03 RT, pp. 61-62.) Applicant's project manager testified that an average pH of 8 is a reasonable, conservative average but the pH concentration from HARRF is not relevant because the circulating water in the cooling tower will be maintained at a set point independent of the reclaimed water pH received from HAARF. (4/29/03, RT, p. 73.) Staff's witness noted that even if the pH goes up to 9.0, insignificant amounts of ammonia would be emitted. (4/29/03, RT, pp. 74-76.)

Staff's witness further testified that even if the Intervenor's higher emission rate levels were accurate, ammonia stripping from the cooling tower would not result in any health hazard to the public or to workers. The airborne concentration would be so "very, very low" that no odor would even be detectable. (4/29/03 RT, p. 40:11-19; see also, p. 67.) Applicant's witness indicated that at the point of maximum impact, cooling tower emissions would contribute "less than one percent of the overall impact" at that location. (4/29/03, RT, p. 69:22-25.)

Both Staff and Applicant provided testimony concerning potential impacts from the growth of Legionella bacteria and other micro-organisms in cooling tower operations. Legionella is a type of bacteria that grows in water and causes Legionellosis (Legionnaires' disease). Emissions from untreated or inadequately

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[35] The parties argued in great detail about the accuracy of their numbers. Staff's expert witness testified that both Applicant's and Intervenor's ammonia emissions estimates were likely too high. (4/29/03, RT, pp. 39-40.) We find the discrepancies are not relevant in any event because there is no persuasive evidence that ammonia stripping would result in any adverse public health

treated cooling systems have been correlated with outbreaks of Legionellosis. (Ex. 50, p. 4.7-13 et seq; Ex. 35, Schilling, Public Health, pp. 6-7.) The California Department of Health Services requires the use of biocides to reduce the growth of Legionella and other bacteria in cooling systems using recycled water. (Cal. Code of Regs., tit. 22, § 60306)

To minimize risk from Legionella, Staff proposed a Condition of Certification that would require the project owner to implement a Cooling Water Management Plan consistent with the recommendations of the Cooling Technology Institute (CTI). (Ex. 50, p. 4.7-16.) We have adopted Condition of Certification **PUBLIC HEALTH-1**, which incorporates Staff's proposal. As noted by Staff's witness, this Condition is based on performance criteria rather than specifications, requiring the project owner to develop a plan that is reviewed for efficacy. (4/29/03 RT, pp. 38-39, 86-87.) Applicant indicated that the cooling system design and maintenance approach is consistent with CTI best practices. The project owner is motivated by public health concerns and economics to maintain a clean and efficient cooling tower system. (Ex. 35, Schilling, Public Health, pp. 6-7; 4/29/03 RT, pp. 30-31, 45, 85.) We find this persuasive.

In accordance with CTI recommendations and industry practice, the PEP will implement the following management strategies to minimize bacterial growth in cooling towers:

- Avoid piping that is capped and has no flow (dead ends).
- Control input water temperature to avoid temperature ranges where Legionella grow. Keep cold water below 25° C (77° F) and hot water above 55° C (131° F).
- Apply biocides in accordance with label dosages to control growth of other bacteria, algae, and protozoa that may contribute to nutritional needs of Legionella. Rotating biocides and using different control methods is

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effects even if Mr. Powers' most conservative calculations are more accurate than those presented by Applicant's expert witnesses. (*Ibid.*)

recommended. These include thermal shock, oxidizing biocides, chlorine-based oxidants and ozone treatment.

- Conduct routine periodic "back-flushes" to remove bio-film buildup on the inside walls of the pipes.

The PEP will also comply with the guidelines of the San Diego County Department of Environmental Health to (1) use disinfected tertiary recycled water, (2) install a drift eliminator, and (3) use a chlorine or other biocide to treat the circulating water to minimize the growth of micro-organisms. (Ex. 50, p. 4.7-15; *See*, Tit. 20 Cal. Code Regs., § 60306.)

The parties all presented their views on the interaction of ammonia in the circulating cooling water with hypochlorite (a chlorine-based biocide), which forms chloramine (a disinfectant) and thereby reduces the amount of residual ammonia in the cooling water. (4/29/03 RT, pp. 41-44.) Intervenor Powers agreed that sufficient amounts of chlorine would bind with ammonia as chloramine and minimize potential ammonia stripping. (4/29/03 RT, p. 80; Exs. 106 and 107). However, Mr. Powers was concerned that the project description did not include sufficient amounts of hypochlorite to effectively control bacterial growth. (429/03, RT, p. 83.) While we acknowledge Mr. Powers' concerns, we believe Condition **Public Health-1** is a reasonable safeguard to ensure the project will implement an appropriate biocide treatment protocol that reduces emissions of micro-organisms to insignificant levels.

4. 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. Those toxic pollutant levels beyond

the point of maximum impact normally fall within ambient background levels. (Ex. 50, p. 4.7-17.)

By examining average toxic concentration levels from representative air monitoring sites in California with cancer risk factors specific to each contaminant, lifetime cancer risk can be calculated to provide a background risk level for inhalation of ambient air. For comparison purposes, Staff noted that the overall lifetime cancer risk in California for the average individual is about 1 in 4, or 250,000 in one million. (Ex. 50, p. 4.7-7.)

The toxic air monitoring stations closest to the PEP are in Chula Vista and El Cajon, approximately 40 and 30 miles south of the, respectively. Staff reviewed air quality data compiled by CARB, which indicates the following. Based on levels of TACs measured at these monitoring stations in 2000, the background cancer risk calculated is 170 in one million at Chula Vista and 208 in one million at El Cajon. The pollutants 1,3-butadiene and benzene, emitted primarily from mobile sources, were the two highest contributors to risk and together accounted for over half of the total. At El Cajon the risk from 1,3-butadiene was about 68 in one million, while the risk from benzene was about 69 in one million. Risk from benzene and 1,3-butadiene at Chula Vista was 51 in one million for each substance. Formaldehyde accounts for about 9 percent of the ambient cancer risk determined for Chula Vista, with a risk of about 16 in one million and about 8 percent of ambient risk at El Cajon, with a risk of about 17 in one million. Formaldehyde is emitted directly from vehicles and other combustion sources, such as the PEP. (Ex. 50, p. 4.7-7.)

According to Staff, the use of reformulated gasoline, beginning in the second quarter of 1996, as well as other toxics reduction measures, have led to a decrease of ambient levels of toxics and associated cancer risk during the past few years. For example, at the El Cajon monitoring station, cancer risk was 366 in one million based on 1993 data and 257 in one million based on 1996 data. At

the Chula Vista monitoring station, cancer risk was 251 in one million based on 1993 data and 240 in one million based on 1995 data. (Ex. 50, p. 4.7-7.)

By contrast, the maximum cancer risk calculated for the project is 0.9 in one million at the maximum impact location about 2 miles from the site. (Ex. 50, pp. 4.7-7, 4.7-17.) The evidentiary record indicates that the modeled PEP-related health risks were lower at all other locations and actual risks are expected to be even lower since worst-case estimates are based on conservative assumptions. (Ex. 50, p. 4.7-17.) Staff therefore concluded that the incremental impact of the health risk potential posed by the PEP would not be significant or cumulatively considerable. (*Ibid*.)

FINDINGS AND CONCLUSIONS

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

1. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

2. Normal operation of the project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

3. Emissions of criteria pollutants, which are discussed in the Air Quality section of this Decision, will be mitigated to levels consistent with applicable standards.

4. Applicant performed a health risk assessment, using well-established scientific protocol, to analyze potential adverse health effects of noncriteria pollutants (toxic air contaminants) emitted by PEP.

5. There are sensitive receptors within a five-mile radius of the project site.

6. The point of maximum impact for toxic contaminant dispersion is located about two miles west-southwest of the site in the undeveloped West Hills area.

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

8. The project owner will conduct source testing to quantify emissions of toxic air contaminants in accordance with SDAPCD Rule 1200.

9. With implementation of the required T-BACT mitigation measures for air toxics, the potential risk of cancer from project emissions is insignificant.

10. The project owner will implement a Cooling Water Management Plan in accordance with applicable LORS and guidelines to minimize the potential for growth of Legionella bacteria and other micro-organisms in cooling tower emissions.

11. Potential ammonia stripping in cooling tower emissions using the most conservative calculations will not result in any significant public health impacts.

12. Project emissions will not result in adverse effects to public health since the project is designed to comply with applicable LORS and is therefore presumed consistent with CEQA requirements.

13. 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, except for Condition of Certification **Public Health-1**, below. Compliance with Condition of Certification **Public Health-1** will minimize the potential risk of bacterial exposure from cooling tower emissions to insignificant levels.

CONDITIONS OF CERTIFICATION

Public Health-1 The project owner shall develop and implement a cooling tower Biocide Use, Biofilm Prevention, and Legionella Monitoring Program to ensure that the potential for bacterial growth is kept to an absolute minimum. This Program shall include weekly monitoring of biocide and chemical biofilm prevention agents, periodic maintenance of the cooling water system on a

quarterly basis to remove bio-film buildup, and quarterly testing to determine the concentrations of Legionella bacteria in the cooling water.

Verification: At least 60 days prior to the commencement of cooling tower operations, the Biocide Use, Biofilm Prevention, and Legionella Monitoring Program shall be provided to the CPM for review and approval.

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 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. (Ex. 50, p. 4.14-4.) Exposure to these hazards can be minimized through adherence to appropriate design criteria and administrative controls, use of personal protective equipment (PPE), and compliance with applicable LORS.[36] (*Ibid.*)

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, pp. 5.14-4 to 5.14-7; Ex. 35, p. 2; Ex. 50, pp. 4.14-5 et seq.) Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Exposure Monitoring Programs, Emergency Action Plans, Fire Protection and Prevention Plans, and other general safety procedures will be

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[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* Ex. 50, pp. 4.14-1 through 4.14-3.)

prepared for both the construction and operation phases of the project. (*Ibid*.) These comprehensive programs will contain more specific plans dealing with the site and ancillary 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 the project owner to consult with Cal/OSHA, as appropriate, and the City of Escondido Fire Department to ensure that these programs comply with applicable LORS.

3. Fire Protection and Prevention Plans

The project will include comprehensive on-site fire protection and suppression systems as first line defense in the event of fire. The project will also rely on local fire protection services. (Ex. 1, pp. 2-42 to 2-43; Ex. 50, pp. 4.14-9 to 4.14-10.) To ensure that the fire protection and suppression systems comply with current standards, the City of Escondido Fire Department and/or the Rural Fire Protection District must approve the project's Construction Fire Protection and Prevention Plan 30 days prior to the start of construction activities. (Ex. 50, p. 4.14-11.) *See* Condition **Worker Safety-1**. Condition **Worker Safety-2** requires the project owner to provide a Fire Protection and Prevention Program for review by the fire protection agency serving the project prior to the start of project operation.

The on-site fire protection system provides the first line of defense for small fires. During construction, an interim fire protection system will be in place. The permanent facility fire protection system will be placed in service as early as possible during the construction phase. The on-site programs include a firewater pumping system, carbon dioxide fire suppression systems for the combustion turbine generators (CTGs), and fire extinguishers. According to Staff, the fire

prevention plan described in the evidentiary record will comply with applicable LORS.[37] (Ex. 50, p. 4.14-9; Ex. 1, p. 2-42.)

The fire water supply will consist of a dedicated 200,000-gallon portion of the 730,000-gallon raw water storage tank located on-site. Two electric motor-driven fire pumps, each with a capacity of 500 gallons/minute, will deliver water to the fire protection water piping network. A third small capacity electric motor jockey pump maintains pressure in the piping network. According to Staff, this system will provide more than an adequate quantity of fire-fighting water to yard hydrants, hose stations, and water spray and sprinkler systems. (Ex. 1, p. 2-42; Ex. 50, p. 4.14-9.)

In addition, a carbon dioxide fire protection system will be provided for the CTGs and accessory equipment, fire detection sensors will be installed, fire hydrants and hose stations will supplement the plant fire protection system, and smoke detectors, combustible gas detectors, and an appropriate class of service portable extinguishers will be located throughout the facility at code-approved intervals. (Ex. 1, p. 2-43; Ex. 50, p. 4.14-10.)

In the event of a major fire, fire support services including trained firefighters and equipment for a sustained response would be required by the City of Escondido Fire Department. The nearest fire station to the site, Station No. 1, is located at 310 North Quince Street about 3.5 miles away with an estimated response time of less than 6 minutes. (Ex. 50, p.4.4-14.) Station 5, located at 2319 Felicita, approximately 5.5 miles from the project site; would be the second responder with an estimated response time of less than 10 minutes According to Staff, Station No. 1 is adequately equipped and staffed. Staff also indicated that the response time would be adequate and consistent with the Uniform Fire Code (UFC) and the National Fire Protection Association (NFPA). (*Ibid*.)

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[37] *See* Ex. 1, § 6.3.2 et seq. and Ex. 50, p. 4.14-3.

The Escondido fire stations are considered first responders for hazardous materials (HazMat) incidents with backup service provided by the San Diego County HazMat Response Team (Ex. 50. p. 4.4-14.) Staff indicated that the response time for hazardous materials response is excellent and that the County HazMat Response Team is adequately trained and equipped to respond in a timely manner (*Ibid*.).

Staff concluded that fire risks at the proposed facility are similar to those of existing facilities in the immediate vicinity and thus pose no significant added demands on local fire protection services. (Ex. 50, p. 4.14-11.)

Staff reviewed the potential for PEP-related activities to result in cumulative impacts on the fire and emergency response capabilities of the Escondido Fire Department and determined that it is adequately staffed and equipped to deal with any incident at the PEP facility. Given the industrial area where the project will be built and the lack of unique fire hazards associated with a modern gas-fired power plant, Staff concluded the potential cumulative impacts of this project on fire and emergency services provided by the Escondido Fire Department would be insignificant. (Ex. 50, p. 4.14-11.)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted 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.
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; each of the programs will include an Injury/Illness Prevention Program, a Personal Protective Equipment Program, an Exposure Monitoring Program, an Emergency Action Plan, a Fire Protection and Prevention Plan, and other general safety procedures.

3. The Palomar Energy Project will include on-site fire protection and suppression systems for first line defense in the event of fire.
4. The City of Escondido Fire Department will provide fire protection and emergency response services to the project.
5. City of Escondido Fire Station 1, located 3.5 miles from the project site, is the assigned first responder to the PEP with a response time of less than 6 minutes. Escondido Fire Station 5 will provide backup emergency response to the PEP site with a response time of about 10 minutes.
6. City of Escondido fire stations are the assigned HazMat first responders. Back-up HazMat support will be provided by the San Diego County HazMat Response Team.
7. Existing fire and emergency service resources are adequate to meet project needs.
8. The PEP will not result in cumulative impacts to the City of Escondido Department's emergency response capabilities.
9. Implementation of the Conditions of Certification, below, and the mitigation measures described in the evidentiary record 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 the project owner'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:

1. A Construction Injury and Illness Prevention Program
2. A Construction Fire Protection and Prevention Plan
3. A Personal Protective Equipment Program

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, if appropriate, for review and comment concerning compliance of the program with all applicable Safety Orders.

The Construction Fire Protection and Prevention Plan shall be submitted to the CPM for review and approval and to the City of Escondido Fire Department and/or the Rural Fire Protection District for review and comment.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program, the Personal Protective Equipment Program and the Construction Fire Protection and Prevention Plan, including a copy of the cover letter transmitting the Programs to Cal/OSHA's Consultation Service, if appropriate.

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

1. Operation Injury and Illness Prevention Program
2. Emergency Action Plan
3. Operation Fire Protection Program
4. Personal Protective Equipment Program

The Operation Injury and Illness Prevention Program, 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, as appropriate, for review and comment concerning compliance of the program with all applicable Safety Orders.

The Operation Fire Protection Program and the Emergency Action Plan shall be submitted to the fire protection agency serving the project for review and comment.

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. The document shall incorporate Cal/OSHA's Consultation Service comments, if any, regarding its review and acceptance of the specified elements of the proposed Operation Safety and Health Plan

The project owner shall notify the CPM that the Project Operation Safety and Health Program, including all records and files on accidents and incidents, is present onsite.

D. HAZARDOUS MATERIALS MANAGEMENT

This analysis considers whether the construction and operation of the Palomar Energy Project 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, Public Health, 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. (Ex. 1, § 5.12.; Ex. 50, p. 4.4-4.)

1. Potential Impacts

Staff's Appendix C (AFC Table 2.4-5) appended to Condition of Certification HAZ-1, below, lists the hazardous materials that will be used and stored on site including aqueous ammonia, sulfuric acid, and hydrochloric acid which are deemed *acutely hazardous*. Aqueous ammonia (19.5 percent ammonia in aqueous solution) is the only acutely hazardous material proposed to be stored at the Palomar Energy Project in quantities exceeding the reportable amounts defined in the California Health and Safety Code, section 25532 (j). (Ex. 1, Table 2.4-5; Ex. 50, p. 4.4-1.) The other substance of concern is natural gas, which will be used in large quantities, but not stored on site. (Ex. 1, § 5.12-6; Ex. 50, p. 4.4-1.) Potential impacts from other gases currently stored on site are not considered significant since quantities are limited, incompatible gases are stored separately, and appropriate storage containers are maintained in accordance

with applicable law. No significant changes are expected with the addition of the PEP. (Ex. 1, p. 5.12.-8.)

Condition of Certification HAZ-1 prohibits the project owner from using any hazardous materials not listed in Appendix C or in greater quantities than those identified in Appendix C without prior approval of the Energy Commission's Compliance Project Manager. (Ex. 50, p. 4.4-17.) During the construction phase of the project, hazardous materials proposed for use include paint, paint thinner, cleaners, solvents, sealants, gasoline, diesel fuel, motor oil, hydraulic fluid, welding flux and gases, lubricants and emergency refueling containers. Any impact of spills or other releases of these materials will be limited to the site due to the small quantities involved. Fuels such as fuel oil #6, mineral oil, lube oil, and diesel fuel are all of very low volatility and represent limited offsite hazard even in larger quantities. (Ex. 50, p. 4.4-6.)

Sulfuric acid, sodium hydroxide and sodium hypochlorite will be stored on site, but do not pose a risk of off-site impacts because they have relatively low vapor pressures and, thus, the impact of spills would be confined to the site. Staff determined that no hazard will be posed to the public due to the extremely low volatility of these solutions. Condition of Certification HAZ-5 requires that no combustible or flammable material is stored within 50 feet of the sulfuric acid tank in order to protect against risk of volatilizing sulfuric acid in a fire. (Ex. 50, p. 4.4-7.) Furthermore, the potential for accidental spills during transfer from delivery vehicles to storage tanks will be reduced to insignificance by implementation of the Safety and Management Plan required by Condition of Certification HAZ-3. (Ex. 50, p. 4.4-18.)

a. Aqueous Ammonia

Aqueous ammonia is used in the Selective Catalytic Reduction (SCR) process to control NOx emissions from combustion of natural gas in the facility. The

aqueous ammonia will be stored in a single, above-ground 20,000-gallon tank. (Ex. 34, p. 4.) The accidental release of aqueous ammonia without proper mitigation can result in hazardous downwind concentrations of ammonia gas.[38] (Ex. 50, p. 4.4-9.) Eighteen sensitive receptors reside within 2.5 miles of the project site. (Ex. 1, pp. 5.15-11 and 5.15-12.) The two closest sensitive receptors are Del Dios Middle School located approximately one mile southeast of the proposed site and Little County Preschool located approximately one mile south-southeast of the site. The nearest residences are approximately 1,800 feet west of the site. (Ex. 1, p. 5.12-7; Ex. 50, p. 4.4-5.)

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, § 5.12.3.1.) Staff considers the threshold significance level to be a one-time exposure to 75 parts per million (ppm) of ammonia gas.[39] (Ex. 50, p. 4.4-10.) The results of the Applicant's accidental release modeling showed that off-site airborne concentrations of ammonia would not exceed the level the 75 ppm at any off-site location. The maximum concentration at the site boundary (35 meters or 115 feet away from the unloading area) was predicted to be approximately 60 ppm. (Ex. 1, Table 5.12-1.)

The Applicant stated that a catastrophic failure of an ammonia storage tank is considered extremely remote and, thus, did not evaluate this scenario. (Ex.1, p. 5.12-6.) Staff testified that even though a failure may be remote, the Applicant should provide engineering containment to prevent significant off-site impacts should a failure occur. Therefore, Staff conducted SCREEN 3 modeling for several different scenarios associated with a failure of the aqueous ammonia

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[38] The choice of aqueous ammonia significantly reduces the risk that is associated with the more hazardous anhydrous form, which is stored as a liquid gas. (Ex. 50, pp. 4.4-1, 4.4-9.)

storage tank. (Ex. 50, p. 4.4-10.) The results of Staff's modeling showed concentrations much higher than 75 ppm at the fence line (115 feet) for a spill with a surface area of 800 square feet. For spills where the aqueous ammonia was diverted to a subsurface "covered collection sump" with an opening no greater than 4 square feet, the highest concentration estimated at the fence line was 26 ppm. (Ex. 50, pp. 4.4-10 and 4.4-11.)

Based on the results of Staff's OCA, we concur with Staff that a secondary containment for the aqueous ammonia is needed to mitigate impacts to a level of insignificance. We therefore find that with implementation of Condition of Certification HAZ-9, which requires the Applicant to construct the secondary containment area for the aqueous ammonia storage tank, any accidental release of aqueous ammonia used for the project will not cause a significant impact.

Plant workers in the vicinity of the ammonia truck unloading area could be exposed to harmful concentrations of ammonia due to accidental release. The project includes several engineering and administrative controls to reduce the likelihood and consequences of an ammonia release. (Ex. 50, pp. 4.4-13 and 4.4-14.) Safety features include construction of concrete berms and/or catchment basins surrounding each of the hazardous materials storage, the physical separation of stored chemicals in separate containment areas to prevent accidental mixing of incompatible materials, paving the truck pad with concrete and with sufficient berm to provide secondary containment for the entire contents of the truck plus ten percent, and process protective systems. (Ex. 50, p. 4.4-13.) Administrative controls include worker training programs, process safety management programs, and compliance with all applicable health and safety laws, ordinances and standards. (Ex. 50, pp. 4.4-14.)

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[39] 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.

To ensure implementation of these design plans, Condition of Certification HAZ-3 requires the project owner to develop and implement a Safety Management Plan for ammonia deliveries. Conditions HAZ-4 and HAZ-9 require the ammonia storage tank to be constructed according to industry specifications and drain into a covered sump. The Conditions of Certification in the Facility Design section of this Decision requires compliance with seismic design specifications for storage facilities. (Ex. 50, p. 4.4-12 and 4.4-13.)

Staff believes that transportation of aqueous ammonia poses the predominant risk associated with the transport of hazardous materials. To address this concern, Staff evaluated the risk of an accidental transportation release in the project area after the delivery vehicle leaves the main highway (Highway 78). (Ex. 50, p. 4.4-11.) According to Staff, compliance with the extensive regulatory program that applies to shipment of hazardous materials on California Highways will ensure safe handling in general transportation.[40] To address the issue of tank truck safety, aqueous ammonia will be delivered to the site in U.S Department of Transportation (DOT) certified vehicles that meet or exceed the specifications of DOT Code MC-307. These are high integrity tankers designed to haul caustic materials such as ammonia with design capacity of 6,100 gallons. Condition of Certification HAZ-6 ensures that regardless of which vendor supplies the aqueous ammonia, delivery will be made in a tanker, which meets or exceeds the specifications described in the applicable regulations. (Ex. 50, pp. 4.4-11 and 4.4-12.)

The PEP will require about five tanker truck deliveries of aqueous ammonia per month (approximately 60 per year). Each truck will travel a little more than one

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[40] *See* the Federal Hazardous Materials Transportation Act at 49 USC §5101 et seq, the U.S. Department of Transportation Regulations at 49 CFR Subpart H, §172-700, and California DMV Regulations on Hazardous Cargo.

mile between Highway 78 and the facility per delivery along Nordahl Road and Citracado Parkway for a total of 68 miles of delivery tanker truck travel in the project area per year. Staff found that the risk over this distance is insignificant. (Ex. 50, p. 4.4-12.) Condition of Certification HAZ-7 requires the project owner to direct all vendors delivering hazardous material to the site to use only the route approved by the Compliance Project Manager.

Therefore, Staff believes the risk of exposure to significant concentrations of aqueous ammonia during transportation to the facility is insignificant because of the remote possibility of accidental release of a sufficient quantity to present a danger to the public. Staff further concluded that the risk associated with transportation of other hazardous materials to the proposed facility does not significantly increase the risk of impact beyond that associated with ammonia transportation. (Ibid.)

b. Natural Gas

The project requires large amounts of natural gas, which creates a risk of both fire and explosion. (Ex. 50, p. 4.4-7.) 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 on site; rather, it will be continuously delivered via the project's gas pipeline facilities (described in the Facility Design section of this Decision.) Since the facility will require the installation of a new gas pipeline off-site impacts from this pipeline were evaluated. (Ex. 50, p. 4.4-7.) The proposed

facility will require the upgrade of a bottleneck in an existing SDG&E pipeline located about one mile northwest of the proposed facility. This 2,600 foot, 16-inch, pipeline upgrade will be constructed, owned, and operated by SDG&E. Design and inspection of the pipeline must comply with California Public Utilities Commission (CPUC) General Order 112E and Federal Pipeline Safety Regulations, 49 CFR 192 requirements, as well as the NFPA Code. Staff believes that these regulatory requirements are sufficient to reduce the risk of accidental release from the pipeline to insignificant levels. (Ex. 50, p. 4.4-7.)

If release of gas occurs as a result of pipe, valve, or other mechanical failure or external forces, significant quantities of compressed natural gas could be released rapidly. Such a release can result in a significant fire and/or explosion hazard, which could cause loss of life and/or significant property damage in the vicinity of the pipeline route. However, the probability of such an event is extremely low if the pipeline is constructed according to present standards. (Ex. 50, p. 4.4-8.)

Safety features required by current federal and state LORS will be incorporated into the design and operation of the gas pipeline, including: (1) pressure used to deliver gas will be less than the design pressure; (2) butt welds will be x-rayed and the pipeline will be tested with water prior to the introduction of natural gas into the line; (3) the pipeline will be surveyed for leakage annually (4) the pipeline will be marked to prevent rupture by heavy equipment excavating in the area; and (5) valves at the meter will be installed to isolate the line if a leak occurs. (Ex. 50, 4.4-9) Condition MECH-1 in the Facility Design section ensures the gas pipeline will comply with applicable law.

2. Site Security

The PEP will use hazardous materials that have been identified by the U.S. EPA as materials where special site security measures should be developed and

implemented to ensure that unauthorized access is prevented. (Ex. 50 p. 4.4-15.) To ensure that this facility or a shipment of hazardous material is not the target of unauthorized access, security measures include perimeter fencing, guards, alarms, law enforcement contact in the event of security breach, and fire detection systems. Additional security measures include site personnel background checks and strict control of site access to vendors. (Ex. 50, pp. 4.4-15 and 4.4-16.) General Condition of Certification on Construction and Operations Security Plan **COM-9** requires the preparation of a Vulnerability Assessment and the implementation of Site Security measures consistent with the above-referenced documents.

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 agencies to ensure that any unacceptable risk to the public is eliminated. (Ex. 50, pp. 4.4-16 and 4.4-17.)

FINDINGS AND CONCLUSIONS

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

1. The PEP will use hazardous materials during construction and operation, including the *acutely hazardous* aqueous ammonia, sulfuric acid, hydrochloric acid, and natural gas.

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

3. The Off-Site Consequences Analysis indicated that no significant offsite public health consequences would result from an accidental ammonia release during the delivery process.

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

5. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

6. Potential impacts from the other hazardous substances used on site are not considered significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. The project owner will submit an approved Safety Management Plan for handling aqueous ammonia, an approved Hazardous Materials Business Plan, and an approved Risk Management Plan prior to delivery of any hazardous materials to the site.

8. 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.

9. With implementation of the Conditions of Certification, below, the PEP will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of Appendix A of this Decision.

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

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix C, below, or in greater quantities than those identified by chemical name in Appendix C, below, unless approved in advance by the CPM.

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

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) (San Diego County Environmental Health Services Department) for review and to the CPM for review at the time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). After receiving comments from the CUPA, the EPA, and the CPM. the project owner shall reflect all recommendations in the final documents. Copies of the final Business Plan and RMP shall then be provided to the CUPA and EPA for information and to the CPM for approval.

Verification: At least 60 days prior to receiving any hazardous material on the site, the project owner shall provide a copy of a final Business Plan to the CPM for approval. At least 60 days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final RMP to the CUPA for information and to the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least sixty 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 facility shall be designed either to the ASME Pressure Vessel Code and ANSI K61.6, or to API 620. In either case, a secondary containment basin capable of holding 125% of the volume of the largest storage tank or the tank volume plus the volume associated with 24 hours of rain assuming the 25-year storm, shall be constructed. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

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

HAZ-5 The project owner shall ensure that no combustible or flammable material is stored within 50 feet of the sulfuric acid tank.

Verification: At least 60 days prior to receipt of sulfuric acid on-site, the Project Owner shall provide copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any combustible or flammable materials

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

Verification: At least 60 days prior to receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating the transport vehicle specifications to the CPM for review and approval.

HAZ-7 The project owner shall direct all vendors delivering any hazardous material to the site to use only the route approved by the CPM (Highway 78 to Nordahl Road to Citracado Parkway and then into the facility). The project owner shall obtain approval of the CPM if an alternate route is desired.

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

HAZ-8 The project owner shall ensure that the hydrogen gas storage cylinders are stored in an area out of the plane of the turbines and that no combustible or flammable material is stored within 50 feet of the hydrogen cylinders.

Verification: At least 60 days prior to receipt of hydrogen gas on-site, the Project Owner shall provide copies of the facility design drawings showing the location of the hydrogen gas cylinders and the location of any tanks, drums, or piping containing any combustible or flammable material and the route by which such materials will be transported through the facility.

HAZ-9 The aqueous ammonia storage tank shall be protected by a surface secondary containment area designed in such a manner that in the event of a tank failure, the contents will flow into this surface containment area and then immediately into a subsurface “covered collection sump” with a drain opening no greater than 4 square feet.

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

APPENDIX A

BASIS FOR STAFF'S USE OF 75 PPM AMMONIA EXPOSURE CRITERIA

Staff uses a health-based airborne concentration of 75 PPM to evaluate the significance of impacts associated with potential accidental releases of ammonia. While this level is not consistent with the 200-ppm level used by EPA and Cal/EPA in evaluating such releases pursuant the Federal Risk Management Program and State Accidental Release Program, it is appropriate for use in Staff's CEQA analysis. The Federal Risk Management Program and the State Accidental Release Program are administrative programs designed to address emergency planning and ensure that appropriate safety management practices and actions are implemented in response to accidental releases. However, the regulations implementing these programs do not provide clear authority to require design changes or other major changes to a proposed facility. The preface to the Emergency Response Planning Guidelines (ERPGs) states that "these values have been derived as planning and emergency response guidelines, not exposure guidelines, they do not contain the safety factors normally incorporated into exposure guidelines. Instead they are estimates, by the committee, of the thresholds above which there would be an unacceptable likelihood of observing the defined effects." It is staff's contention that these values apply to healthy adult individuals and are levels that should not be used to evaluate the acceptability of avoidable exposures for the entire population. While these guidelines are useful in decision making in the event that a release has already occurred (for example, prioritizing evacuations), they are not appropriate for and are not binding on discretionary decisions involving proposed facilities where many options for mitigation are feasible. CEQA requires permitting agencies making discretionary decisions to identify and mitigate potentially significant impacts through changes to the proposed project.

Staff has chosen to use the National Research Council's 30 minute Short Term Public Emergency Limit (STPEL) for ammonia to determine the potential for significant impact. This limit is designed to apply to accidental unanticipated releases and subsequent public exposure. Exposure at this level should not result in serious effects but would result in "strong odor, lacrimation, and irritation of the upper respiratory tract (nose and throat), but no incapacitation or prevention of self-rescue." It is staff's opinion that exposures to concentrations above these levels pose significant risk of adverse health impacts on sensitive members of the general public. It is also staff's position that these exposure limits are the best available criteria to use in gauging the significance of public exposures associated with potential accidental releases. It is, further, staff's opinion that these limits constitute an appropriate balance between public protection and mitigation of unlikely events, and are useful in focusing mitigation efforts on those release scenarios that pose real potential for serious impacts on the public.

Table 1 provides a comparison of the intended use and limitations associated with each of the various criteria that staff considered in arriving at the decision to use the 75-ppm STPEL. Appendix B provides a summary of adverse effects, which might be expected to occur at various airborne concentrations of ammonia.

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 protects 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
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.

References for Appendix A, Table 1

AIHA. 1989. American Industrial Hygienists Association, Emergency Response Planning Guideline, Ammonia, (and Preface) AIHA, Akron, OH.

EPA. 1987. U.S. Environmental Protection Agency, Technical Guidance for Hazards Analysis, EPA, Washington, D.C.

NRC. 1985. National Research Council, Criteria and Methods for Preparing Emergency Exposure Guidance Levels (EEGL), short-term Public Emergency Guidance Level (SPEGL), and Continuous Exposure Guidance Level (CEGL) Documents, NRC, Washington, D.C.

NRC. 1972. Guideline for short-term Exposure of The Public To Air Pollutants. IV. Guide for Ammonia, NRC, Washington, D.C.

NIOSH. 1994. National Institute of Occupational Safety and Health, Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Washington D.C., Publication numbers 94-116.

WHO. 1986. World health Organization, Environmental Health Criteria 54, Ammonia, WHO, Geneva, Switzerland.

Abbreviations for Appendix A, Table 1

ACGIH, American Conference of Governmental and Industrial Hygienists
AIHA, American Industrial Hygienists Association
EEGL, Emergency Exposure Guidance Level
EPA, Environmental Protection Agency
ERPG, Emergency Response Planning Guidelines
IDLH, Immediately Dangerous to Life and Health Level
NIOSH, National Institute of Occupational Safety and Health
NRC, National Research Council
STEL, Short Term Exposure Limit
STPEL, Short Term Public Emergency Limit
TLV, Threshold Limit Value
WHO, World Health Organization

APPENDIX B

SUMMARY OF ADVERSE HEALTH EFFECTS OF AMMONIA

638 PPM

WITHIN SECONDS:

- Significant adverse health effects;
- Might interfere with capability to self rescue;
- Reversible effects such as severe eye, nose and throat irritation.

AFTER 30 MINUTES:

- Persistent nose and throat irritation even after exposure stopped;
- Irreversible or long-lasting effects possible: lung injury;
- Sensitive people such as the elderly, infants, and those with breathing problems (asthma) experience difficulty in breathing;
- Asthmatics will experience a worsening of their condition and a decrease in breathing ability, which might impair their ability to move out of area.

266 PPM

WITHIN SECONDS:

- Adverse health effects;
- Very strong odor of ammonia;
- Reversible moderate eye, nose and throat irritation.

AFTER 30 MINUTES:

- Some decrease in breathing ability but doubtful that any effect would persist after exposure stopped;
- Sensitive persons: experience difficulty in breathing;

- Asthmatics: may have a worsening condition and decreased breathing ability, which might impair their ability to move out of the area.

64 PPM

WITHIN SECONDS:

- Most people would notice a strong odor;
- Tearing of the eyes would occur;
- Odor would be very noticeable and uncomfortable.
- Sensitive people could experience more irritation but it would be unlikely that breathing would be impaired to the point of interfering with capability of self rescue
- Mild eye, nose, or throat irritation
- Eye, ear, & throat irritation in sensitive people
- Asthmatics might have breathing difficulties but would not impair capability of self rescue

22 or 27 PPM

WITHIN SECONDS:

- Most people would notice an odor;
- No tearing of the eyes would occur;
- Odor might be uncomfortable for some;
- Sensitive people may experience some irritation but ability to leave area would not be impaired;
- Slight irritation after 10 minutes in some people.

4.0, 2.2, or 1.6 PPM

- No adverse effects would be expected to occur;
- doubtful that anyone would notice any ammonia (odor threshold 5 - 20 PPM);
- Some people might experience irritation after 1 hr.

APPENDIX C
Anticipated Hazardous Materials Use at the Palomar Energy Project

Material	**CAS No. or Chemical Makeup)**	**Location/ Application**	**Hazardous Characteristics** [41]	**Maximum Quantity On Site**	**Regulatory Thresholds (lb.)**			
					CalARP	**Federal RQ**[42]	Federal TPQ[43]	Federal TQ[44]
Alkaline Solution (Morpholine)	110-91-8	Condensate pH control	Health: acute, chronic Physical: none	250 gallons (30 day storage)	-	5,000	-	-
Ammonium Bifluoride	1341-49-7	HRSG chemical cleaning	*Health: acute, chronic* *Physical: none*	Temporary	-	100	-	-
Aqueous Ammonia 19.5%	7664-41-7	NO_X Emissions Control	*Health:* acute, chronic *Physical:* fire, pressure	20,000 gallons (14 days storage)	500	100	500	-
Carbohydrozide (oxygen scavenger - Eliminox)	497-18-7	Condensate oxygen control	*Health: acute, chronic* *Physical: none*	250 gallons (30 days storage)	-	5,000	-	-
Citric Acid	77-92-9	HRSG chemical cleaning	*Health: acute, chronic* *Physical: none*	Temporary	-	-	-	-

[41] Hazard categories are defined by 40 CFR 370.2. Health hazards include acute (immediate) and chronic (delayed). Physical categories include fires, sudden release of pressure, and reactive.
[2]RQ = Reportable Quantity
[3] TPQ = Threshold Planning Quantity
[4] TQ = Threshold Quantity

APPENDIX C
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Material	**CAS No. or Chemical Makeup)**	**Location/ Application**	**Hazardous Characteristics** [41]	**Maximum Quantity On Site**	**Regulatory Thresholds (lb.)**			
					CalARP	**Federal RQ**[42]	Federal TPQ[43]	Federal TQ[44]
Disodium and Trisodium Phosphate Solution	7558-79-4 (Disodium) 7601-54-9 (Trisodium)	Boiler water scale control	*Health: acute, chronic* *Physical: none*	1,000 gallons (30 days storage)	-	-	-	-
EDTA Chelant	62-33-99	HRSG chemical cleaning	*Health: acute* *Physical: none*	Temporary	-	100	-	-
Hydrochloric Acid	7664-39-3	HRSG chemical cleaning	*Health: acute, chronic* *Physical: none*	Temporary	-	5,000	-	15,000
Hydrogen	1333-74-0	Generator cooling	*Health: toxic* *Physical: fire*	60,000 scf (trailer mounted tanks)	-	-	-	10,000
Organic Phosphate Inhibitor Solution (Hydroxyethylidine Diphosphonic Acid or HEDP)	2809 –21-4	Scale control in circulating water	*Health: acute, chronic* *Physical: none*	4,000 gallons (30 days storage)	-	-	-	-
Sodium Hydroxide	1310-73-2	Demineralizer regeneration	*Health: acute,* *Physical: none (corrosive)*	7,500 gallons (30 days storage)	-	-	1,000	-
Sodium Hypochlorite Solution	7681-52-9	Biofouling control in circulating water	*Health:* acute, *Physical:* reactive	2,500 gallons)30 days storage)	-	-	100	-
Sodium Nitrite	7632-00-0	HRSG chemical cleaning	*Health: acute* *Physical: none*	Temporary	-	-	100	-

APPENDIX C
Anticipated Hazardous Materials Use at the Palomar Energy Project

Material	**CAS No. or Chemical Makeup)**	**Location/ Application**	**Hazardous Characteristics** [41]	**Maximum Quantity On Site**	**Regulatory Thresholds (lb.)**			
					CalARP	**Federal RQ**[42]	Federal TPQ[43]	Federal TQ[44]
Sulfuric Acid	7664-93-9	pH reduction and demineralizer regeneration in circulating water	*Health:* acute, chronic *Physical:* reactive	7,500 gallons (30 days storage)	1,000	1,000	1,000	-
Sulfuric Acid	7664-93-9	Station Batteirs	*Health: acute, chronic Physical: reactive*	3,000 gallons	1,000	1,000	1,000	-

E. WASTE MANAGEMENT

The project will generate hazardous and non-hazardous wastes during construction and operation of the PEP. 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 permitted treatment, storage, and disposal facilities. Registered hazardous waste transporters must handle the transfer of hazardous waste to disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.; Ex. 50, p. 4.13-2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Excavation

A Phase I Environmental Site Assessment (ESA) was conducted for the entire ERTC of which PEP is a part in accordance with procedures established by the American Society for Testing and Materials (ASTM) to identify recognized environmental conditions (RECs) at the PEP site. (Ex. 1, Appendix H.) The ESA reported that no adverse RECs exist at the site. (*Ibid*.; Ex. 1, § 5.13.1.3; Ex. 35, Breese, Waste, p 3.) Staff noted, however, that for about forty years (1958-1995), the northern portion of the project site was used for agricultural purposes and likely received the application of pesticides. To ensure that pesticides are not present, Staff requested that Applicant conduct limited sampling and soil analysis on the northern area of the site. The results of Applicant's sampling and analysis confirmed that pesticides are not present in the soils. (Ex. 50, p. 4.13-3: Ex. 14.)

We have incorporated specific mitigation measures in the Conditions of Certification to ensure that any unknown contaminated materials at the site will be managed appropriately. Condition **WASTE-1** requires the project owner to designate a Registered Professional Engineer or Geologist for consultation during soil excavation and grading activities to monitor any soil or groundwater contamination encountered during ground moving activities. Condition **WASTE-2** establishes the process for handling potentially contaminated materials unearthed at the site or linear alignments. Additionally, Condition **WASTE-6** requires the project owner to remove any Asbestos Containing Materials (ACM), Regulated Building Materials (RBMs) such as lead-based paints, and provide proof that any Leaking Underground Storage Tanks (LUSTs) have been removed prior to site mobilization.

Applicant's Phase I ESA identified a LUST about 1,500 feet northeast of the northern fenceline for the PEP site. Staff initially indicated that remedial action was in progress to remove the tank and proposed Condition **WASTE-7** to ensure that the LUST would not result in contamination of groundwater or on-site soils. (Ex. 50, p. 4.13-4.) Subsequently, the parties confirmed that the LUST had been removed. The San Diego County Department of Environmental Health is monitoring trace levels of MTBE in the groundwater but there is no evidence that any pollution has migrated to the site.[41] (Ex. 59.) Therefore, Condition **WASTE-7** is not pertinent and has been deleted.

2. Construction

Site preparation and construction of the PEP and linear facilities will generate both non-hazardous and hazardous wastes in solid and liquid forms.

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[41] On June 10, 2003, after close of evidentiary hearings, Staff submitted Addendum #4 to the Final Staff Assessment, which provided information on removal of the LUST. Addendum #4 was received into the record as Exhibit 59.

a. Non-hazardous wastes

The Applicant's Draft Waste Management Plan indicates that approximately 600 tons of excess concrete, lumber, demolition debris, scrap metal, insulation, paper, wood, glass, packaging materials, and empty non-hazardous chemical containers will be generated during project. (Ex. 2A, Response 115; Ex. 1, § 5.13.2.1.) These wastes will be recycled, where practical, with the remainder deposited at a Class III landfill. (Ex. 1, p. 5.13-4; Ex. 35, Breese, Waste, p. 3; Ex. 50, p. 4.13-4.) Waste metal generated during construction may include 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. In addition, any uncontaminated soils removed during site grading, which are unsuitable for reuse will also be deposited at a Class III landfill. (*Ibid*.)

Non-hazardous liquid wastes will be generated during construction and are discussed in the **Soil and Water Resources** section of this document.

b. Hazardous Wastes

Hazardous wastes generated during construction include used oil and grease, paint, used batteries, spent solvent, welding materials, and chemical cleaning solutions. All such hazardous wastes will be collected in appropriate containers near the point of generation and removed on a regular basis by a certified waste handling contractor for either recycling or disposal at a licensed Class I hazardous waste treatment or disposal facility. (Ex. 2A, Response 115; Ex. 1, § 5.13.2.2.)

4. Operation

a. Non-hazardous Waste

Applicant expects about 100 tons per year of non-hazardous waste materials will be generated during project operation including trash, office wastes, empty containers, broken or used parts, used packaging, used filters, and other wastes from routine maintenance activities. Non-hazardous solid waste will be recycled to the extent possible with the remainder deposited at a Class III landfill. (Ex. 1, § 5.13.2.1.)

b. Hazardous Waste

During operation, about 1,300 gallons per year of used oil will be generated and transported to existing petroleum recycling facilities. Other hazardous wastes include spent air pollution control catalysts containing heavy metals, which will be returned to the manufacturer (approximately 70,000 pounds every 3 to 5 years) for metals reclamation and/or disposal. (Ex. 1, § 5.13.2.2.) Periodic turbine washing and chemical cleaning of the HRSGs will be conducted by licensed contractors. The turbine wash water effluent will be analyzed for appropriate disposal. Both the wash water and HRSG cleaning solutions will be removed by the licensed contractors conducting the cleaning. (*Ibid.*)

5. Potential Impacts on Waste Disposal Facilities

Applicant's Table 5.13-1, replicated below, shows local Class III landfills that will accept non-hazardous solid waste. Most of the non-hazardous waste produced during project construction and operation will be recyclable. According to Applicant, the amount of non-recyclable project wastes will be insignificant relative to current disposal volumes at the local Class III landfills, which total more than 91.6 million cubic yards of remaining capacity to the year 2027. In

addition, the new Gregory Canyon landfill currently being permitted about 25 miles from the PEP site is designed to accommodate one million tons of solid waste annually for 30 years. (Ex. 1, § 5.13.1.1.) Staff concurred that disposal of project-related wastes will not result in any significant direct or cumulative impacts on the capacities of local Class III landfill facilities. (Ex. 50, p. 4.13-5.)

Non-Hazardous Solid Waste Disposal Sites (Class III) in San Diego County					
Landfill Disposal Site Name	**Location**	**Peak Throughput (tons/day)**	**Remaining Capacity (cubic yards)**	**Anticipated Year of Closure**	**Approximate Distance from Project Site (miles)**
Borrego Landfill	2449 Palm Canyon Road, Borrego Springs	50	426,000	2013	50
Otay Sanitary Landfill	1700 Maxwell Road, Chula Vista	5,000	44,000,000	2027	40
Ramona Landfill	20630 Pamo Road, Ramona	295	690,000	2006	15
Sycamore Sanitary Landfill	8514 Mast Blvd., San Diego	3,300	23,500,000	2017	20
West Miramar Sanitary Landfill	5180 Convoy St., San Diego	8,000	23,000,000	2011/2012	20
TOTAL		**16,645**	**91,616,000**		
Source: Ex. 1, Table 5.13-1					

Three major Class I landfills have permits to accept hazardous waste in California: Chemical Waste Management Landfill located in Kettleman Hills in Kings County; Safety-Kleen Buttonwillow Inc. in Kern County; and Safety-Kleen Westmorland Inc. in Imperial County. According to Staff, more than 20 million cubic yards of hazardous waste disposal capacity exists at these landfills with up to 50 years of remaining operating lifetimes. (Ex. 50, p. 4.13-6.) Staff concluded that the minimal amount of project-related hazardous waste delivered to California's Class I landfills would not significantly impact the capacity or remaining lives of any of these facilities. (*Ibid.*) *See* the following Table listing Class I Landfills in California.

Hazardous Waste Landfills (Class I) in California

Disposal Site Name	Location	Permitted Capacity (cubic yards)	Estimated Remaining Operational Life	Approximate Distance from Project Site (miles)
Safety-Kleen Buttonwillow, Inc.	Lokern Road between State Routes 33 and 58, Buttonwillow, Kern County	13 million	40 years (~2040)	250
Chemical Waste Management, Kettleman Hills Landfill	State Highway 41, Kettleman Hills, Kings County	8 million (remaining capacity)	30 years (~2030)	280
Safety-Kleen Westmorland, Inc.	5295 S. Garvey Road, Westmorland, Imperial County	2 million (remaining capacity)	50 years (~2050)	105

Source: Ex. 1, § 5.13.1.2

6. Cumulative Impacts

Applicant's testimony indicates that the hazardous and non-hazardous wastes generated by PEP in combination with the waste streams from the nearby RAMCO and CalPeak generating stations and the facilities of the ERTC are not expected to produce more than 10,000 tons of solid waste per year. This is a small fraction of one percent of the current annual waste disposed of in regional landfills. According to Applicant, the cumulative waste disposal needs over the lives of these projects will not cause or contribute to significant cumulative impacts to the remaining capacities of the non-hazardous waste disposal sites. Likewise, hazardous waste volumes generated by these cumulative projects will not significantly affect available hazardous waste treatment or disposal capacity. (Ex. 1, § 5.13-5.) Staff concurred with this analysis. (Ex. 50, p. 4.13-6.)

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 non-hazardous wastes during construction and operation of the PEP.

2. Applicant's Phase I Environmental Site Assessment (ESA) did not find any recognized adverse environmental conditions that would indicate potential for contaminated soils.

3. Sampling and analysis of soils in the northern portion of the site, which was previously used for agricultural purposes, confirmed that pesticide residues are not present.

4. The project will recycle hazardous and non-hazardous 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 appropriate Class I landfills.

6. Non-hazardous wastes that cannot be recycled will be deposited at Class III landfills in the local area.

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

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

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 provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the CPM for review and

approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization the project owner shall submit the resume to the CPM.

WASTE-2 If potentially contaminated soil is unearthed during excavation at the PEP site and/or linear alignments as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the soils, 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.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the San Diego County Department of Environmental Health and the San Diego Office of Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any final reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 The project owner shall obtain a hazardous waste generator identification number from the Department of Toxic Substances Control prior to generating any hazardous waste.

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 (MCR) of its receipt.

WASTE-4 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to

be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-5 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and

- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the CPM.

The operation waste management plan shall be submitted no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

WASTE-6 Prior to site mobilization, the project owner shall complete and submit a survey of all Asbestos-Containing Materials (ACM) and Regulated Building Materials (RBM) that contain lead-based paint to the San Diego County Department of Environmental Health for review and comment and to the CPM for approval. After receiving approval, the project owner shall remove all ACM and RBM from the site.

Verification: No less than 60 days prior to site mobilization, the project owner shall provide the survey to the San Diego County Department of Environmental

Health for review and comment, and to the CPM for review and approval. The project owner shall inform the CPM, via the MCR, of the date when all ACM and RBM were removed from the site.

WASTE-7 ***DELETED AS NOT NECESSARY***

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other topics of critical biological interest such as unique habitats. The following review describes the biological resources of the project site and linear alignments, assesses the potential for adverse impacts on biological resources, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards.

Summary and Discussion of the Evidence

The PEP site is located on a vacant 20-acre parcel (Planning Area 1) within the planned 186-acre ERTC industrial park. The project is at the southwestern perimeter of the industrial/commercial area of the City of Escondido, where land use transitions to rural and semi-rural. (Ex. 1, § pp. 3-1 to 3.2.)

The City of Escondido, as lead agency, conducted a California Environmental Quality Act (CEQA) review of the ERTC project and the ERTC Specific Plan Amendment, which includes the PEP site. The City approved the final EIR for the ERTC Specific Plan Area (SPA) in November 2002. (Exs. 21 and 22.)

The PEP site consists of a central graded area with a largely cleared slope (formerly an avocado and citrus grove) to the north and naturally vegetated slopes to the south. The vegetation series occurring on the power plant site and along the water pipeline route include coastal sage scrub, annual grassland, and eucalyptus. Portions of the northern end of the power plant site have been scraped in the past and are currently devoid of vegetation and highly disturbed. Abandoned orchards in the extreme northern portion of the site currently support

annual grassland with occasional trees, stumps, and sagebrush shrubs.[42] This area also contains three depressions that retain water into the spring, the two largest of which support breeding western spadefoot toads. The central and southern portions of the plant site are less disturbed than the northern portion and are dominated by coastal sagebrush scrub. (Ex. 1, pp. pp. 5.3-5 to 5.3-10; Ex. 50, pp. 4.2-7 and 4.2-8.)

A number of special status animal species are associated with the area, including the California gnatcatcher, western spadefoot toad, wart-stemmed ceanothus, Cooper's hawk, rufous-crown sparrow, and loggerhead shrike. Recent biological surveys located gnatcatchers on the power plant site, as well as elsewhere on the SPA, and found the Western spadefoot toad in a number of seasonal ponds on the power plant site. (Ex. 1, Appendix F, pp. 27–28) Urban and agricultural development has greatly reduced the amount of coastal sage shrub and it now is considered a special status habitat in San Diego County. As coastal sage scrub is the primary habitat of the California gnatcatcher, the reduction in habitat led to the gnatcatcher's designation as a special status species. Similarly, urbanization and agricultural development in the region has caused a decline in the Western spadefoot toad population and to its designation as a special status species. (Ex. 35, Merkel, Biology, p. 3.)

No other special status animal species are currently known on the site, and no special status plant species have been found on the site. Regional resource conservation planning (the Escondido Subarea Plan of the Multiple Habitat Conservation Plan) does not identify the ERTC SPA as a conservation area, nor as a biological core or linkage area since the site's habitats are degraded and fragmented. (Ex. 35, Merkel, Biology, pp. 3-4.) Also, the site is not considered an important "stepping-stone" corridor for movement of gnatcatchers and other sage scrub avian species because a much more expansive and contiguous swath of undeveloped land, which supports sage scrub habitat, exists to the west of the

[42] The overall ERTC industrial park site includes coastal sage scrub, annual grassland and eucalyptus, as well as coast live oak and mulefat. (Ex. 35, Merkel, Biology, p. 3).

project site. (*Id*. at p. 4; Ex. 50, p. 4.2-14.) Sensitive species in the project vicinity are listed below.

Biological Resources Table 1
Sensitive Species with Potential to Occur in the PEP Vicinity
(Source: Ex. 50, p. 4.2-6, adapted from Ex. 1, Appendix F.1)

Sensitive Plants	***Status****
California adolphia (*Adolphia californica*)	CNPS List 2
San Diego barrel cactus (*Ferocactus viridescens*)	FSC, CNPS List 2
Mission Canyon blue-cup (*Githopsis diffusa* ssp. *filicaulis*)	FSC, CNPS List 3
Graceful tarplant (*Holocarpha virgata*)	FSC, CNPS List 4
Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*)	CNPS List 1B
San Diego goldenstar (*Muilla clevelandii*)	FSC, CNPS List 1B
Engelmann oak (*Quercus engelmannii*)	CNPS List 4
Wart-stemmed ceanothus (*Ceanothus verrucosus*)	CNPS List 2

Sensitive Wildlife	**Status***
Quino checkerspot butterfly (*Euphydryas editha quino*)	FE
Western spadefoot toad (*Scaphiopus hammondii*)	FSC, CSC, FP
Coastal (San Diego) horned lizard (*Phrynosoma coronatum*)	FSC, CSC, FP
Coronado skink (*Eumeces skiltonianus interparietalis*)	FSC, CSC
Orange-throated whiptail (*Cnemidophorus hyperythrus*)	FSC, CSC, FP
Coastal western whiptail (*Cnemidophorus tigris stejnegeri*)	FSC
Coastal rosy boa (*Lichanura trivirgata roseofusca*)	FSC
Two-striped garter snake (*Thamnophis hammondi*)	CSC, FP
Red diamond rattlesnake (*Crotalus ruber exsul*)	FSC, CSC
White-tailed kite (*Elanus leucurus*)	FSC, MBTA, MNMBC, FP
Golden eagle (*Aquila chrysaetos*)	MBTA, CSC, FP
Sharp-shinned hawk (*Accipiter striatus*)	MBTA, CSC
Cooper's hawk (*Accipiter cooperii*)	MBTA, CSC
Loggerhead shrike (*Lanius ludovicianus*)	FSC, MBTA, CSC
California horned lark (*Eremophila alpestris actia*)	MBTA, CSC
California gnatcatcher (*Polioptila californica*)	FT, MBTA, CSC
Western bluebird (*Sialia mexicana*)	MBTA
Rufous-crowned sparrow (*Aimophila ruficeps canescens*)	CSC
Bell's sage sparrow (*Amphispiza belli*)	FSC, CSC
San Diego black-tailed jackrabbit (*Lepus californicus bennettii*)	FSC, CSC
Dulzura California pocket mouse (*Perognathus longimembris pacificus*)	FSC, CSC
Northwestern San Diego pocket mouse (*Chaetodipus fallax*)	FSC, CSC
San Diego desert woodrat (*Neotoma lepida intermedia*)	FSC, CSC

***STATUS LEGEND:** FE = Federally listed Endangered; FT = Federally listed Threatened; FSC = Federal Species of Concern; MNMBC = Fish & Wildlife Service, Migratory Non-game Birds of Management Concern; MBTA = Federally Protected under the Migratory Bird Treaty Act; CSC = California Species of Special Concern, FP = California Fully Protected Species; California Native Plant Society (CNPS 2001) List 1B = Rare, threatened or endangered plants in California and elsewhere; CNPS List 2 = Rare, threatened or endangered plants in California, but more common elsewhere; CNPS List 3 = Plants needing more information, a review list; CNPS List 4 = Plants of limited distribution, a watch list.

Most of the water line route and the entire natural gas pipeline route are within existing paved roadways and thus contain no biological resources. The portion of the water line route within the overall ERTC industrial park site, but outside the 20-acre power plant site, contains degraded annual grasslands and a small stand of blue gum eucalyptus. (Ex. 35, Merkel, Biology, pp. 3-4; Ex. 50, p. 4.2-8.)

2. Potential Impacts

Grading of the ERTC industrial park site before commencing power plant construction will fully disturb biological resources at the power plant site and the portion of the water line route that lies outside existing roadways. The biological resource assessment contained in the EIR for the SPA encompassed the power plant site, and identified the habitat impacts summarized below in Biological Resources Table 2. This table shows impacts by habitat type and identifies the specific impacts in Planning Area 1 (the power plant site), the power plant water line route, and Planning Areas 2-8 (the remainder of the ERTC SPA):

Biological Resources Table 2
ERTC SPA HABITAT ACREAGE IMPACTS

Vegetation Type	Power Plant Site (PA-1)	Water Line Route	Remainder of ERTC (PA 2-8)	Total
Coastal Sage Scrub	6.90	0.00	38.20	45.10
Non-native Grassland	7.50	0.00	88.00	95.50
Coast Live Oak Woodland	0.00	0.00	0.10	0.10
Mixed Willow	0.05	0.00	0.03	0.08
Mule Fat Scrub	0.00	0.00	0.02	0.02
Disturbed/Agricultural	5.50	0.60	26.00	32.10
Eucalyptus	0.00	0.10	6.40	6.50
Seasonal Ponds	0.10	0.00	0.00	0.10
Urban	0.00	1.10	1.50	2.70
Other Waters of the U.S.	0.07	0.00	0.05	0.12
TOTAL	**20.12**	**1.80**	**160.3**	**182.32[1]**

Source: Ex. 50, p. 4.2-10; Ex. 35, Merkel, Biology, p. 4
[1] Total does not include acreage that will be preserved (not impacted) in Planning Area 7

Grading of Planning Area 1 for the PEP will result in the permanent loss of 14.4 acres of natural habitat (coastal sage scrub and annual grassland), 5.5 acres of agricultural/disturbed habitat, 0.1 acre of seasonally ponded depressions, 2,178

ft^2 (0.05 acre) of a west-to-east running seasonal streambed (waters of the U.S.), and 2,178 ft^2 (0.05 acre) of jurisdictional wetland, consisting of a small stand of mixed willow vegetation along the eastern property boundary. (Ex. 50, p. 4.2-9).

Removal of 6.9 acres of native coastal sage scrub habitat, associated with preparation of Planning Area 1 for the PEP, will result in the displacement of nesting territories of two pairs of California gnatcatchers and the removal of several ponded depressions (0.1 acre) in the northern portion of the site that serve as habitat for western spadefoot toads known to occupy these ponds and found nowhere else in the SPA. (Ex. 50, p. 4.2-10.)

3. Mitigation

The City of Escondido's Conditions of Approval for the ERTC contain an overall biological resources mitigation program for the entire SPA, including the power plant site. The primary element of the program is habitat compensation to mitigate habitat loss resulting from development activities in the SPA. (Ex. 24; Ex. 35, Merkel, Biology, p. 5).

Because the ERTC site is occupied by a federally-protected species (the California gnatcatcher) and also supports wetlands regulated under state and federal jurisdiction, the industrial park site must be developed in accordance with: (1) a Biological Opinion issued by the U.S. Fish and Wildlife Service following a formal consultation process under section 7 of the federal Endangered Species Act, (2) a California Fish & Game Code Section 1603 streambed alteration agreement issued by the California Department of Fish and Game; (3) a Clean Water Act section 404 permit issued by the U.S. Army Corps of Engineers, and (4) a federal Clean Water Act section 401 certification issued by the San Diego Regional Water Quality Board. (Ex. 35, Merkel, Biology, p. 5; Ex. 28.). Condition

of Certification **BIO-6**, item 11, in this Decision requires the project owner to submit these documents prior to site mobilization.[43]

Staff's Biological Resources Table 5, replicated below, summarizes mitigation for habitat losses in Planning Area 1 (PEP site) in relation to the remainder of the ERTC.

Biological Resources Table 5
PROPOSED HABITAT MITIGATION FOR ERTC HABITAT IMPACTS

Vegetation Type	*Mitigation Ratio*[(1)]	Planning Area 1 (Power Plant)				Remainder of ERTC (*Planning Areas 2-8*)		Total	
		Power Plant		Water Pipeline					
		Impact (Acres)	Mitigation (Acres)	Impact (Acres)	Mitigation (Acres)	Impact (Acres)	Mitigation (Acres)	Impact (Acres)	Mitigation (Acres)
Coastal Sage Scrub	*2.5:1*[(2)]	6.9	17.25	0.5*	-	38.2	95.5	45.1	112.75
Annual Grassland	*0.5:1*	7.5	3.75	1.5*	-	88.0	44.0	95.5	47.75
Coastal Live Oak Woodland	*3:1*[(3)]	-	-	-	-	0.1	0.30	0.1	0.30
Mixed Willow / Mule fat	*3:1*	0.05	0.15	-	-	0.06	0.18	0.11	0.33
Seasonal Ponds & Drainages	*3:1*	0.1	0.3	-	-	-	-	0.1	0.3
Waters of the U.S.	*3:1*	0.05	0.15	-	-	0.06	0.18	0.11	0.33
Total		**14.6**	**21.6**	**(2.0)***	**0.0**	**126.42**	**140.16**	**141.02**	**161.76**

(1) Ratios recommended in Escondido Subarea Plan implementing the MHCP
(2) Higher ratio than 2:1 ratio recommended in Subarea Plan, due to number of gnatcatcher pairs involved (USFWS, 2002c).
(3) Includes 10:1 replacement of individual trees that meet minimum size requirements
* Sage scrub and grassland impact acreages are included in the power plant totals in the previous column

Under the Biological Opinion, impacts to gnatcatcher-occupied coastal sagebrush habitat will be mitigated by the ERTC industrial park developer (JRMC) at a ratio of 2.5:1 and by conservation of an equal number of California gnatcatchers within a preserve system. (Ex. 28, Biological Opinion, pp. 8 and 18.) The mitigation plan requires JRMC to purchase 117.43 acres within the

[43] The Applicant submitted these documents to the Commission on March 7, 2003. (Ex. 28.)

Bernardo Mountain Mitigation Area in Escondido and to fund an endowment for ongoing management of the mitigation site. (Ex. 28, Biological Opinion, p. 8.). This acreage includes 103.4 acres of coastal sage scrub and 14.03 acres of non-native grassland that will be restored to coastal sage scrub by JRMC. The mitigation area includes a complex mix of regional vegetation types that incorporate substantial tracts of Diegan Coastal Sage Scrub, occupied by a high concentration of gnatcatchers, which extends into the adjacent City of San Diego Cornerstone Preserve lands surrounding Lake Hodges Reservoir lands. (Ex. 35, Merkel, Biology, p. 5; Ex. 50, p. 4.2-17.) Condition of Certification **BIO-1** in this Decision requires the PEP project owner to confirm that the habitat compensation program has been implemented prior to site mobilization.

Impacts to non-native grasslands will be offset at a 0.5:1 ratio through the acquisition by the JRMC of 13.27 acres of non-native grassland at Bernardo Mountain and 33.73 acres of non-native grassland credits at the Daley Ranch Mitigation Bank in the City of Escondido. In accordance with the Escondido Subarea Plan, a mitigation ratio of 3:1 was established for impacts to coast live oak woodland (a total of 0.3 acres), and to mixed willow/mule fat habitat (a total of 0.33 acres). (Ex. 35, Merkel, Biology, p. 5.)

Under the wetland regulatory programs, impacts to wetlands and other jurisdictional waterways will be mitigated by compensation at a 3:1 ratio. Potential impacts to 0.22 acre of wetland habitat in the ERTC SPA will be mitigated by the preservation of 0.17 acre of existing wetlands within Planning Area 7 of the SPA, and an additional 0.50 acre of wetland will be created in Planning Area 7, which totals 0.67 acre of wetland mitigation. (Ex. 28, Clean Water Act, Section 404 permit.)

The loss of Western spadefoot toad habitat in the wetlands and seasonal basin areas on the power plant site will be mitigated through creation or restoration of suitable seasonal pond and streambed habitat to support spadefoot toad use in

Planning Area 7 of the SPA. In addition, where feasible, a qualified biologist is required to capture and relocate any toads that are unearthed during grading. (Ex. 35, Merkel, Biology, p. 6; Ex. 50, p. 4.2-18.) Condition **BIO-1** in this Decision requires the PEP project owner to verify that the wetland mitigation plan has been implemented prior to site mobilization.

Other measures in the ERTC mitigation program require construction work to be initiated (and all clearing and grubbing to be conducted) during the nonbreeding season for the gnatcatcher (August 30 through February 14), conducting pre-construction biological surveys to protect raptor nests and gnatcatchers that may be in the immediate vicinity of the work, and shielding facility lighting to minimize impacts on adjacent natural habitat areas. (Ex. 24, pp. 9-11; Ex. 35, Merkel, Biology, p. 6; Ex. 50, p. 4.2-18.) Condition **BIO-8** in this Decision ensures that PEP-related construction activities will conform to these requirements.

To monitor potential impacts to biological resources due to construction activities at the PEP site, Conditions of Certification **BIO-2**, **BIO-3**, and **BIO-4** in this Decision require the project owner to employ a qualified Biologist with authority to conduct mitigation and other compliance efforts in accordance with the Conditions of Certification. Condition **BIO-5** requires the project owner to develop a Worker Environmental Awareness Program to train construction crews on preventing impacts to sensitive species and their habitats. Under Condition **BIO-6**, the project owner must provide a comprehensive Biological Resources Mitigation Implementation and Monitoring Plan, which incorporates all the biological mitigation and compliance measures required by state and federal agencies regarding biological resources. Biological Resources Appendix A at the end of this section correlates the City of Escondido's Conditions of Approval with the Conditions contained in this Decision.

4. Cumulative Impacts

Development of the 20-acre PEP site within the ERTC SPA, together with development of the ERTC industrial park in the other planning areas of the 186-acre SPA, as well as the two nearby peaker plants (CalPeak and RAMCO) will cumulatively reduce the acreage of a number of sensitive species and habitat types in the project vicinity (the listed California gnatcatcher and Western spadefoot toad, and habitats including Diegan coastal sage scrub and non-native annual grasslands). Implementation of the compensatory habitat program developed for the entire ERTC SPA, including the PEP site, will mitigate the cumulative effects on sensitive habitats and species to below a level of significance. (Ex. 35, Merkel, Biology, p. 6; Ex. 50, pp. 4.2-11 and 4.2-12.)

FINDINGS AND CONCLUSIONS

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

1. The Palomar Energy Project (PEP) site contains sensitive habitat and individual members of two special status species, the California gnatcatcher and Western spadefoot toad.

2. These habitats and species will be removed prior to the beginning of power plant construction as a result of grading for the ERTC industrial park, which includes the power plant site.

3. Regional resource conservation planning (the Escondido Subarea Plan of the Multiple Habitat Conservation Plan) establishes compensation ratios and mitigation requirements for impacts to sensitive habitat.

4. Development within the overall 186-acre ERTC SPA will result in the loss of coastal sage scrub (45.1 acres), non-native grassland (95.5 acres), as well as small quantities of coast live oak woodland (0.1 acre), mixed willow/mule fat habitat (0.1 acre), seasonal ponds (0.1 acre), and other waters of the U.S. (0.12 acre).

5. The City of Escondido's Conditions of Approval for the ERTC SPA include a biological resources mitigation program for the entire SPA, including the power plant site.

6. The primary element of the biological resources mitigation program is habitat compensation to mitigate habitat loss due to development activities in the ERTC SPA, including the power plant site.

7. Mitigation measures for the ERTC site have been established in accordance with: (1) a Biological Opinion that was issued by the U.S. Fish and Wildlife Service following a formal consultation process under section 7 of the federal Endangered Species Act, (2) a California Fish & Game Code Section 1603 streambed alteration agreement that was issued by the California Department of Fish and Game; (3) a Clean Water Act section 404 permit issued by the U.S. Army Corps of Engineers, and (4) a federal Clean Water Act section 401 certification issued by the San Diego Regional Water Quality Board.

8. Under the Biological Opinion, impacts to coastal sagebrush habitat within the ERTC SPA will be mitigated through acquisition by the ERTC industrial park developer of 117.43 acres within the Bernardo Mountain Mitigation Area in Escondido.

9. Under the Biological Opinion, impacts to non-native grasslands in the ERTC SPA will be offset at a 0.5:1 ratio through the acquisition by the ERTC developer of 13.27 acres of non-native grassland at Bernardo Mountain and 33.73 acres of non-native grassland credits at the Daley Ranch Mitigation Bank in the City of Escondido.

10. Under the wetland regulatory programs, impacts to wetlands and other jurisdictional waterways within the ERTC SPA will be mitigated by the preservation of 0.17 acre of existing wetlands within Planning Area 7 of the SPA, and creation of an additional 0.50 acre of wetland in Planning Area 7, which totals 0.67 acre of wetland mitigation.

11. The loss of Western spadefoot toad habitat on the power plant site will be mitigated through creation or restoration of suitable seasonal pond and streambed habitat to support spadefoot toad use in Planning Area 7 of the SPA.

12. The PEP's project-specific and cumulative impacts will be adequately mitigated by the measures specified in the Conditions of Certification listed below.

13. With implementation of the mitigation measures identified in the evidentiary record and the Conditions of Certification listed below, the PEP will

conform with all applicable laws, ordinances, regulations, and standards related to biological resources as identified in the pertinent portions of **Appendix A** of this Decision.

The Commission concludes, therefore, that implementation of the Conditions of Certification, below, will ensure the project conforms with all applicable laws, ordinances, regulations, and standards relating to biological resources.

CONDITIONS OF CERTIFICATION

BIO-1 The project owner shall demonstrate that funding for, and implementation of a habitat compensation strategy has been provided for permanent and temporary biological resource impacts of the Escondido Research and Technology Center (ERTC) business park (including ERTC Planning Area 1, which is the site of the Palomar Energy Project). The habitat compensation strategy shall be consistent with requirements of the:

1. Streambed Alteration Agreement (R5-2002-0363, dated January 31, 2003) between the California Department of Fish and Game (CDFG) and JRMC Real Estate Corp. (the ERTC developer); and

2. U.S. Fish and Wildlife Service (USFWS) Biological Opinion on the ERTC, transmitted to the U. S. Army Corps of Engineers, on February 3, 2003.

Verification: No less than 60 days prior to site mobilization of the Palomar Energy Project, the project owner shall provide written verification to the CPM that habitat compensation and other appropriate mitigation has been implemented in accordance with the CDFG Streambed Alteration Agreement and the USFWS Biological Opinion. This verification shall encompass mitigation for impacts to California gnatcatcher-occupied coastal sage scrub habitat, California gnatcatchers, non-native grasslands, coast live oak woodland, jurisdictional wetlands, and Western spadefoot toad-occupied seasonal basin areas.

Designated Biologist Selection

BIO-2 The project owner shall submit the resume, including contact information, of the proposed Designated Biologist to the CPM for approval.

Verification: The project owner shall submit the specified information at least 60 days prior to the start of any site (or related facilities) mobilization. Site and related facility activities shall not commence until an approved Designated Biologist is available to be on site.

The Designated Biologist must meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field;

2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and

3. At least one year of field experience with biological resources found in or near the project area.

If a Designated Biologist needs to be replaced, then the specified information of the proposed replacement must be submitted to the CPM at least ten working days prior to the termination or release of the preceding Designated Biologist.

Designated Biologist Duties

BIO-3 The Designated Biologist shall perform the following duties during any site (or related facilities) mobilization, ground disturbance, grading, and construction activities:

1. Advise the project owner's Construction/Operation Manager, supervising construction and operations engineer on the implementation of the biological resources Conditions of Certification;

2. Be available to 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 or their habitat;

3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;

4. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (parking lots) for animals in harms way;

5. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification; and

6. Respond directly to inquiries of the CPM regarding biological resource issues.

Verification: The Designated Biologist shall maintain written records of the tasks described above, and summaries of these records shall be submitted in the Monthly Compliance Reports.
During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report.

Designated Biologist Authority

BIO-4 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist to ensure conformance with the biological resources Conditions of Certification.

If required by the Designated Biologist, the project owner's Construction/ Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be adverse impact to biological resources if the activities continued;

2. Inform the project owner and the Construction/Operation Manager when to resume activities; and

3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the halt.

Verification: The Designated Biologist must notify the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program (WEAP)

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written materials are made available to all participants;

2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;

3. Present the reasons for protecting these resources;

4. Present the meaning of various temporary and permanent habitat protection measures;

5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and

6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM two copies of the WEAP and all supporting written materials prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report (during construction) and in the Annual Compliance Report (during operations) the number of persons who have completed the training in the prior month/year and a running total of all persons who have completed the training to date.

The signed training acknowledgement forms shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for at least six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP)

BIO-6 The project owner shall submit two copies of its Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) to the CPM (for review and approval) and to CDFG, ACOE, and USFWS (for review and comment) and shall implement the measures identified in the approved BRMIMP.

The final BRMIMP shall identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;

2. All biological resources Conditions of Certification identified in the Commission's Final Decision;

3. All biological resource mitigation, monitoring, and compliance measures required in federal agency terms and conditions, such as those provided in the USFWS Biological Opinion for the ERTC;

4. All biological resources mitigation, monitoring and compliance measures required in other state agency terms and conditions, such as those provided in the CDFG Incidental Take Permit and Streambed Alteration Agreement and Regional Water Quality Control Board permits for the ERTC;

5. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;

6. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;

7. All required mitigation measures for each sensitive biological resource;

8. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;

9. A detailed description of measures that will be taken to avoid or mitigate temporary disturbances from construction activities;

10. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and

11. A copy of the following documents obtained for the ERTC:

    (a) Final ERTC EIR adopted by the City of Escondido;
    (b) Final Escondido Subarea Plan implementing the MHCP;
    (c) USFWS Section 7 Biological Opinion;
    (d) CDFG Consistency Determination;
    (e) CDFG Streambed Alteration Agreement;
    (f) ACOE 404 Permit; and
    (g) RWQCB 401 Water Quality Certification.

Verification: The project owner shall provide the proposed BRMIMP at least 60 days prior to start of any site (or related facilities) mobilization.

1. The CPM, in consultation with the CDFG, the USFWS and any other appropriate agencies, will determine the BRMIMP's acceptability within 45 days of receipt.

2. The project owner shall notify the CPM no less than 10 working days before implementing any modifications to the approved BRMIMP to obtain CPM approval.

3. Any changes to the approved BRMIMP must also be approved by the CPM in consultation with CDFG, the USFWS and appropriate agencies to ensure no conflicts exist.

4. Within 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 site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Closure Plan Measures

BIO-7 The project owner shall incorporate into the permanent or unexpected permanent closure plan, measures that address the local biological resources in a manner consistent with the land use regulations and policies of the City of Escondido that apply to the ERTC Specific Plan Area (SPA) at the time of closure. The planned permanent or unexpected

permanent closure plan will address the following biological resources related mitigation measures;

1. Removal of transmission conductors that are under the control of the project owner when they are no longer used and useful;

2. Removal of all power plant site facilities and related facilities that are under the control of the project owner when they are no longer used or useful;

3. To the extent required to ensure consistency with the applicable land use regulations and policies of the City of Escondido for the ERTC SPA, ensure restoration of wildlife habitat and revegetation of the plant site and other disturbed areas, as appropriate.

4. Revegetation of the plant site and other disturbed areas that may be undertaken will utilize appropriate seed mixtures and plantings.

Verification: At least 12 months prior to commencement of closure activities, the project owner shall address all biological resources 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.

Construction Mitigation Management to Avoid Harassment or Harm

BIO-8 The project owner shall manage its construction site and related facilities in a manner to avoid or minimize impacts to the local biological resources. At a minimum, measures include the following:

1. Prior to the beginning of power plant construction activities, a qualified biologist will conduct a survey of the project site and vicinity to establish whether there is suitable habitat for California gnatcatchers in sufficient proximity to the power plant construction activity site(s) such that project construction activities potentially could adversely impact gnatcatchers that may be present.

2. If a survey has identified California gnatcatcher habitat within an area that potentially could be affected by project construction, initiate construction activities during the non-breeding season for California gnatcatchers (September 1 through February 14). Work completed during this period includes site boundary demarcation with construction fencing along the edge of retained coastal sage scrub, and all clearing and grubbing.

3. If a survey has identified California gnatcatcher habitat within an area that potentially could be affected by project construction, and in the event that

any nighttime construction is allowed, initiate night construction activities during the non-breeding season for California gnatcatchers (September 1 through February 14). Alternatively, prior to conducting any night construction activities, a qualified biologist will determine that no California gnatcatcher breeding is occurring within 300 feet of areas that would be lighted. In the event that California gnatcatchers are found in proximity to areas to be lighted, a verification of adequate light shielding will be made by a qualified biologist prior to commencement of night work.

4. Shield all facility lighting such that no direct lighting falls within the adjacent natural habitat. Install adequate directional lighting or shielding to control nighttime illumination at the industrial park in a manner that does not enhance light levels within adjacent native habitat areas.

5. Temporarily fence and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence will be hardware cloth or similar materials that are approved by USFWS and CDFG;

6. Make certain all food-related trash is disposed of in closed containers and removed at least once a week. Feeding of wildlife shall be prohibited;

7. Prohibit non-security related firearms or weapons from being brought to the site;

8. Prohibit pets from being brought to the site; and

9. Report all inadvertent deaths of sensitive species to the Designated Biologist. Injured animals will be reported to CDFG and the project owner will follow instructions that are provided by CDFG.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP.

BIOLOGICAL RESOURCES APPENDIX A COMPARISON OF CITY OF ESCONDIDO ERTC SPECIFIC PLAN BIOLOGICAL RESOURCES MITIGATION MEASURES AND CEC BIOLOGICAL RESOURCES CONDITIONS		
City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
Biological Resources		
Mitigation measures will be reviewed and approved by the Wildlife Agencies and the City. These should include, but are not limited to, mitigation for impacts to Diegan coastal sage scrub and the western spadefoot toad.	**BIO-1** The project owner shall demonstrate that funding for, and implementation of a habitat compensation strategy has been provided for permanent and temporary biological resource impacts of the Escondido Research and Technology Center (ERTC) business park (including ERTC Planning Area 1, which is the site of the Palomar Energy Project). The habitat compensation strategy shall be consistent with requirements of the: 3. Streambed Alteration Agreement (R5-2002-0363, dated January 31, 2003) between the California Department of Fish and Game (CDFG) and JRMC Real Estate Corp. (the ERTC developer); and 4. U.S. Fish and Wildlife Service (USFWS) Biological Opinion on the ERTC, transmitted to the U. S. Army Corps of Engineers, on February 3, 2003. **Verification:** No less than 60 days prior to site	No conflict noted

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
	mobilization of the Palomar Energy Project, the project owner shall provide written verification to the CPM that habitat compensation and other appropriate mitigation has been implemented in accordance with the CDFG Streambed Alteration Agreement and the USFWS Biological Opinion. This verification shall encompass mitigation for impacts to California gnatcatcher-occupied coastal sage scrub habitat, California gnatcatchers, non-native grasslands, coast live oak woodland, jurisdictional wetlands, and Western spadefoot toad-occupied seasonal basin areas.	

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
Impacts to California sagebrush series shall be mitigated at a 2:1 ratio, for a total of 90.2 acres. This shall include gnatcatcher-occupied sage scrub acreage and conservation of an equal number of gnatcatchers within a preserve system. This acquisition should occur within the Subarea Plan Focused Planning Areas (FPAs), or in occupied gnatcatcher habitat that has been identified by the Multiple Habitat Conservation Program (MHCP) within the unincorporated San Diego County core area, or in other areas approved by the City, State, and Federal jurisdictional agencies. This will require issuance of a 4(d) permit or approval through Section 7 consultation or Section 10(a) permit of the U.S. Endangered Species Act.	See **BIO-1** above	No conflict noted FSA Condition linked to specifics in USFWS and CDFG approvals, whereas City mitigation specifies acreage and ratios (As presented in USFWS Biological Opinion, issued after adoption of City mitigation program, sagebrush mitigation ratio slightly greater than 2.5:1 -- higher than City ratio)

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Impacts to annual grasslands shall be mitigated at a 0.5:1 ratio in accordance with the Escondido Subarea Plan, for a total of 47.8 acres.	See **BIO-1** above	No conflict noted
Impacts to coast live oak woodland shall be mitigated at a 3:1 ratio in accordance with the Escondido Subarea Plan.	See **BIO-1** above	No conflict noted
Impacts to mixed willow/mulefat shall be mitigated at a 3:1 ratio in accordance with the Escondido Subarea Plan.	See **BIO-1** above	No conflict noted
Western spadefoot toad impacts and seasonal basin areas would be mitigated through creation, or restoration, of an equivalent acreage of habitat that supports seasonal ponds in preserve lands within the Multiple Habitat Planning Area (MHPA) FPAs. Opportunities for such	See **BIO-1** above	No conflict noted

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restoration or creation exist within the Daley Ranch in Escondido, where several degraded pools support western spadefoot toad; and other pool areas could be readily created to further enhance these populations.		

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
Construction activities shall be initiated during the nonbreeding season for California gnatcatchers (Aug. 30 through Feb. 14). Work that will be completed during this period includes site boundary demarcation with construction fencing along the edge of retained sage scrub, and all clearing and grubbing. A qualified biologist will conduct a preconstruction survey of the project site and surrounding habitat to determine whether there are active raptor nests within that area. If an active nest is observed, a buffer will be established between the construction activities and the nest so that nesting activities are not interrupted. The buffer will be a minimum width of 500 feet and will be in effect as long as construction is occurring and until the nest is no longer active.	**BIO-8** The project owner shall manage its construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources. At a minimum, measures include the following: 5. Prior to the beginning of power plant construction activities, a qualified biologist will conduct a survey of the project site and vicinity to establish whether there is suitable habitat for California gnatcatchers in sufficient proximity to the power plant construction activity site(s) such that project construction activities potentially could adversely impact gnatcatchers that may be present. 6. If a survey has identified California gnatcatcher habitat within an area that potentially could be affected by project construction, initiate construction activities during the non-breeding	No conflict noted

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	season for California gnatcatchers (September 1 through February 14). Work completed during this period includes site boundary demarcation with construction fencing along the edge of retained coastal sage scrub, and all clearing and grubbing. 7. If a survey has identified California gnatcatcher habitat within an area that potentially could be affected by project construction, and in the event that any nighttime construction is allowed, initiate night construction activities during the non-breeding season for California gnatcatchers (September 1 through February 14). Alternatively, prior to conducting any night construction activities, a qualified biologist will determine that no California gnatcatcher breeding is occurring within 300 feet of areas that would be lighted. In the event that	

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
	California gnatcatchers are found in proximity to areas to be lighted, a verification of adequate light shielding will be made by a qualified biologist prior to commencement of night work. Shield all facility lighting such that no direct lighting falls within the adjacent natural habitat. Install adequate directional lighting or shielding to control nighttime illumination at the industrial park in a manner that does not enhance light levels within adjacent native habitat areas.	

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
Prior to construction activities, a qualified biologist will survey the preserved habitat areas adjacent to the project site to determine if any gnatcatcher nests are within a distance potentially affected by noise from these activities. If no nesting gnatcatchers are located, no additional measures will need to be taken to mitigate indirect impacts. However, if nesting gnatcatchers are observed, no activity will occur within 300 feet of active nesting territories unless measures are implemented to minimize the noise and disturbance to those adjacent birds. If nesting birds are located adjacent to the project site with the potential to be affected by noise above 60 dBA L_{eq}, a noise barrier will be erected. This noise barrier should consist of a 20-foot-high continuous plywood fence supported by posts or an earthen berm located at the site boundary that abuts potential offsite habitat.	See **BIO-8**	No conflict noted

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
In the event that any nighttime construction is permitted, construction activities shall be initiated prior to the onset of the gnatcatcher breeding season (prior to Feb. 15). Or, prior to conducting any night construction activities, a qualified biologist shall determine that no gnatcatcher breeding is occurring within 300 feet of areas that would be lighted. In the event that gnatcatchers are found in proximity to areas to be lighted, a verification of adequate light shielding would be made by a qualified biologist prior to commencing night work.	See **BIO-8**	No conflict noted
Facility lighting shall be shielded such that no direct lighting falls within the adjacent natural habitat.	See **BIO-8**	No conflict noted

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
Impacts to 0.22 acre of jurisdictional wetland habitat shall be mitigated by the following: • This wetland creation is to be located in a gently sloping, shallow valley, incised only intermittently along the drainage bottom, within Planning Area 7. The creation site is only slightly higher in elevation than the existing adjacent wetland habitat and drainage channel, and presently supports California annual grassland series vegetation, a disturbed upland community suitable for wetland creation. The alluvial soils and proximity to groundwater in the area are favorable to the creation of an expanded wetlands corridor. • The expanded wetlands corridor in Planning Area 7 will be buffered	See **BIO-1**	No conflict noted

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from the urban business park uses by a manufactured perimeter slope a minimum of 100 horizontal feet in depth, and 50 vertical feet in height. This slope adjacent to the wetland restoration area will be planted with a species palette that contains no invasive species (CalEPPC, 1999). This will provide an adequate environmental buffer between the edge effects of the business park, and the existing and created (expanded) wetlands.		
A construction monitor will be present during construction activities to ensure that conservation measures are performed in compliance with any concurrent or subsequent mitigation plans. The biological monitor will instruct construction management to halt all associated project activities, which may be in violation of the	**BIO-2** The project owner shall submit the resume, including contract information, of the Designated Biologist to the CPM for approval. **BIO-3** The designated Biologist shall perform the following during any site (or related facilities) mobilization, ground disturbance, grading, and construction activities: 1. Advise the project owner's	No conflict noted

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conditions of any permits in effect. Any unauthorized impacts or actions not in compliance with the required mitigation will be immediately brought to the attention of the City and Wildlife Agencies.	Construction/Operation Manager, supervising construction on the implementation of the Biological Conditions of Certification; 2. Be available to 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 or their habitat;	

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City Mitigation Requirement (per Escondido City Council Resolution 2002-307) Exs. 21, 24	**CEC Condition**	**Notes/Comments**
	3. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions; 4. Notify the project owner and the CPM of any non- compliance with any biological resources Condition of Certification	
	BIO-4 The project owner's Construction/Operation manager shall act on the advice of the Designated Biologist to ensure conformance with the biological resources Conditions of Certification. The Designated Biologist shall: 1. Require a halt to all activities in any area when determined that there would be adverse impact to biological resources if the activities continued.	

A. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the project, specifically the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also includes a review of project cooling options and in particular, whether the project's proposed use of recycled water for cooling should be replaced by dry cooling technology. To prevent or reduce any potential adverse impacts, several mitigation measures are included in the Conditions of Certification to ensure that the project complies with all applicable federal, state, and local LORS.

Summary and Discussion of the Evidence

1. Erosion Prevention and Storm Water Management

There is no prime farmland found at the site or located within the greater ERTC area and therefore, no significant impacts to agricultural resources will occur. (Ex. 1, p. 5.6-2.)

Loose soils at the project site have been formed from the decomposition of bedrock and are easily eroded. (Ex. 50, p. 4-9.4) Construction at the PEP site will follow mass grading of the ERTC. In creating the pad for project components, approximately 735,000 cubic yards of material (rock and soil) will be excavated and 2,000 cubic yards will be used as fill to build a 14.1-acre pad at an elevation of about 750 feet mean sea level (msl). Earthwork at the site will also involve excavation for foundations and underground systems as well as final grading of the site. (*Id*. at pp. 4.9-8 and 4.9-9.)

In this disturbed condition, accelerated wind and water-induced erosion may result from earthmoving activities associated with power plant construction. Without stabilization, physical erosion related to wind and water may continue to

erode unprotected surfaces during project operation. As a result, sediment discharged from the site could be carried into downstream receiving waters and contribute to degradation of water quality. Project design includes measures to stabilize fill areas and cut slopes to control drainage and erosion. The site perimeter will be landscaped and a storm drainage system will be integrated with the overall storm drainage system for the ERTC industrial park. These measures will minimize wind and water erosion and reduce the potential for soil impacts to insignificant levels. (Ex. 35, Bilodeau, Soils, p. 3; Ex. 1, Appendix G.2.)

As required by the City of Escondido,[44] the Applicant submitted a draft Storm Water Pollution Prevention Plan (SWPPP) that identifies temporary and permanent Best Management Practices to control stormwater runoff and an Erosion and Sediment Control Plan (ESCP) to minimize soil erosion during construction and operation. (Ex. 2A, Data Response 51; Ex. 2D, Data Responses 49-55.) Conditions of Certification **SOIL&WATER-1** through **SOIL&WATER-4** establish specific timeframes for submittal of the final SWPPP and ESCP, as well as specific design and revegetation requirements. Condition **CIVIL-1** in the **Facility Design** section requires design approval of the project's drainage structures, the grading plan, and erosion and sedimentation control plans. Staff identified several elements (listed at the end of the **Soil & Water** Conditions in this section of the Decision as Soil & Water Appendix A) that should be included in the SWPPP and ESCP. (Ex. 50, pp. 4.9-18 and 4.9-19.)

In addition, the SWPPP includes a Spill Prevention Control and Countermeasure Plan (SPCC) and a Chemical Spill Contingency Plan (CSCP) that describe measures to control chemical spills and management of hazardous materials stored on-site. The Best Management Practices (BMPs) included in the SPCC, the CSCP, and the draft SWPPP ensure that no significant impacts to soil and

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[44] The City requires Grading and Erosion Control plans that include stormwater design standards. (Escondido Municipal Code, Ch. 33, Art. 55.)

water resources will result from on-site spills. (Ex. 50, p. 4.9-10; Ex. 2A, Data Responses 56-57; Ex. 1, Appendix G.1.)

2. Water Resources

The nearest surface water body to the project site is Escondido Creek, which flows through Lake Wohlford, northeast of Escondido and then through the City, eventually discharging into the Pacific Ocean at San Elijo Lagoon. Most of Escondido Creek within the City has been concrete-lined since the late 1960s. In the project area, the concrete-lined creek extends in a northeasterly to southwesterly direction approximately 0.75 mile south of the site. Existing beneficial uses for the Escondido Creek include municipal and domestic water supply, agricultural uses, recreation, and wildlife habitat. (Ex. 50, p. 4.9-4.)

Groundwater at the plant site would likely be encountered within 20 feet of the ground surface, but site geotechnical investigations encountered bedrock at six to eleven feet below the surface without reaching water and borings were terminated. The site is located outside the 500-year flood plain. (Ex. 35, Breese, Water, p. 3; Ex. 1, p. 5.4-3.)

The power plant site contains a few small areas (ephemeral channels two to four feet wide with a total area of a small fraction of one acre) designated as non-jurisdictional waters of the U.S. The overall ERTC Specific Plan Area (SPA) contains a small wetlands area west of the power plant site, as well as additional ephemeral drainages. The ephemeral drainages of the plant site support minimal resources with no unique biological functions. (Ex. 35, Breese, Water, p 3.)

For process use (primarily the power plant cooling system), the PEP will utilize tertiary-treated recycled water produced at the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF), located about one mile southeast of the

power plant site (Ex. 1, p. 2-30). As part of the Escondido Regional Recycled Water Project (ERRWP), the HARRF will produce nine million gallons per day (mgd) of recycled water and supply 3.6 mgd of tertiary treated recycled water to the PEP. (Ex. 35, Hoagland, Water, p. 4). The power plant's 1.1-mile water supply pipeline will connect to an existing main of the City's recycled water distribution pipeline at Harmony Grove Road just north of Escondido Creek. Likewise, the plant's 1.1-mile brine return pipeline will connect to the City's brine return system at the same location north of Escondido Creek. From this location, the returned brine will be conveyed by pipeline to the HARRF for storage and eventual ocean disposal through the City's land/ocean outfall system. (*Id*., at pp. 2-30, 37; Ex. 35, Hoagland, Water, p. 4.)

The power plant will also utilize approximately 1,400 gallons per day of potable water for domestic purposes, which will be supplied via a connection with an existing City of Escondido supply line adjacent to the site. Recycled water will be used for site landscaping. (Ex. 1, p. 2-30.)

3. Water Quality

The power plant will not discharge wastewater to surface waters or groundwater. Project sanitary wastewater will be discharged to an existing City of Escondido sewer line adjacent to the plant site and process wastewater (brine) will be returned through a separate brine return line as stated above. (Ex. 1, p. 2-37; Ex. 35, Breese, Water, p. 4.) Staff's Soil and Water Resources Table 3, replicated below, summarizes the types and quantities of operational wastewater to be generated by the power plant.

Soil and Water Resources Table 3
Project Wastewater Volumes

Wastewater Type	***Estimated Quantity (gallons per day)***	***Operational Process***
Cooling Tower Blowdown	889,000	Blowdown from cooling tower, evaporative cooler, HRSG units, and deionization system
Sanitary Wastewater	15,840	Sanitary wastewater, potable water drains, and discharge from oil/water separator

Source: Ex. 50, p. 4.9-3 citing Ex. 33, ERTC Specific Plan, Appendix A; Ex. 1, § 5.4, Table 5.4-5.)

The plant's process wastewater will contain water treatment chemicals (e.g., corrosion inhibitors, sulfuric acid, organic phosphate inhibitor to control scaling, and biocides to prevent the growth of Legionella and other pathogens. City of Escondido Ordinance 95-8 requires the project owner, as an industrial discharger, to obtain an Industrial User Permit, develop a Management Plan for toxic and prohibited organic chemicals, and complete a Baseline Monitoring Report. In addition, the project is subject to federal wastewater pretreatment standards defined in 40 CFR Part 403 (general pretreatment standards) and Part 423 (categorical standards). (Ex. 50, p. 4.9-13; Ex. 1. Appendix G.1.)

The general standards in 40 CFR Part 403 prohibit the following:

- pollutants that create a fire or explosion hazard;
- pollutants that may cause corrosive structural damage to a publicly owned treatment works (POTW), but in no case discharges with a pH lower than 5.0, unless the POTW is specifically designed to accommodate such discharges;
- solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW;
- any pollutant, including oxygen-demanding pollutants, released at a flow rate and/or pollutant concentration which will cause interference with the POTW (in this case the HARRF);
- heat in amounts that will inhibit biological activity in the POTW;
- petroleum oil; or
- pollutants that result in the presence of toxic gases, vapors, or fumes.

The categorical standards defined in 40 CFR 423 are applicable to combined cycle power plants employing a steam water system as the thermodynamic medium. For new sources discharging to a POTW, those standards prohibit:

- discharges of polychlorinated biphenyl compounds;
- discharges of chemical metal cleaning wastes (wastewater resulting from cleaning any metal process equipment, including boiler tube cleaning) that contain total copper in concentrations that exceed 1.0 mg/L maximum for one day; and
- pollutants discharged in cooling tower blowdown that exceed the concentrations identified below in Staff's Soil and Water Resources Table 4. (Ex. 50, p. 4.9-14.)

Soil and Water Resources Table 4
Pretreatment and Categorical Standard

Pollutant	***Pretreatment Standards Maximum for One Day (mg/L)***
126 Priority Pollutants[1] contained in chemicals added for cooling tower maintenance, except:	Nondetectable
Total Chromium	0.2
Total Zinc	1.0

(1) Listed in 40 CFR 423.

Staff's Soil and Water Resources Table 5, replicated below, shows the concentration of brine blowdown returned to HARRF. The recycled water constituents in the cooling and process water supplied by the HARRF are concentrated by the cooling cycle and do not contain any of the 126 priority pollutants identified in 40 CFR 423 and will have no impact on surface waters or groundwater. The values shown below are average concentrations for the planned PEP operation at base and peak loads representing approximately four cycles of concentration. (Ex. 1, § 5.4.2.9, Table 5.4-6; Ex. 50, p. 4.9-15; Ex. 33, ERTC Specific Plan 2001, Appendix A.)

Soil and Water Resources Table 5
Quality of Brine Return to the HARRF

Constituents	***Average Concentration @ Base Load***	***Average Concentration @ Peak Load***
Calcium	924 mg/L	923 mg/L
Magnesium	476 mg/L	475 mg/L
Sodium	1548 mg/L	1547 mg/L
Potassium	93 mg/L	92 mg/L
Total Alkalinity	150 mg/L	150 mg/L
Sulfate	1314 mg/L	1313 mg/L
Carbon Dioxide	1 mg/L	1 mg/L
Nitrate	8 mg/L	8 mg/L
Silica	20 mg/L	20 mg/L
Total Dissolved Solids	3923 mg/L	3920 mg/L

Source: Ex. 1, § 5.4.2.9, Table 5.4-6; Ex. 50, p. 4.9-15; Ex. 33, ERTC Specific Plan Appendix A.

The record establishes that project discharges of sanitary and process wastewater will comply with applicable LORS, and no significant impacts are expected. (Ex. 35, Breese, Water, p. 4; Ex. 1, Appendix G.1; Ex. 50, p. 4.9-20; and 4/28/03 RT, p. 27; *see also* Ex. 111, § 4.2.) Condition of Certification **SOIL&WATER-7** ensures that the project owner will comply with the City of Escondido's Ordinance 95-8 to obtain an Industrial Users Discharge Permit.

4. Water Supply

The Rincon del Diablo Municipal Water District (MWD), which serves the City of Escondido, provided a Will Serve letter stating that recycled water is available to meet the needs of the power plant project. (Ex. 1, Appendix G.) In addition, the MWD, the City, and the Palomar Energy Project executed a Recycled Water Agreement, which provides, *inter alia*, that the City will deliver recycled water to the MWD and the MWD will provide the water to the PEP for use in wet cooling and other on-site industrial processes.[45] (Ex. 111, § 4.3; Ex. 35, Hoagland, Water, p. 4.)

[45] The term of the Recycled Water Agreement is 20 years. (Ex. 111, Article 1.)

The City's Director of Utilities testified there is ample supply of recycled water from the HARRF to supply the needs of PEP without impacting other users. (Ex. 35, Hoagland, Water, p. 4; 4/28/03 RT, p. 47.) Even with the power plant's 3.6-mgd use, daily flows to the various customers will remain below the 9-mgd capacity of the system. The plant's use of recycled water will not prevent other currently identified customers from obtaining their full share of recycled water. (*Ibid*.)

The evidentiary record contains an analysis of potential recycled water user demand, which indicates that recycled water supply is greater than demand. (Ex. 2A, Data Responses 46 and 47; Ex. 3A, Data Response 135.) Indeed, the City's Utilities Director testified that if the project does not use recycled water provided by HARRF, the water would otherwise be discharged to the ocean. Moreover, if demand should increase in the future, the City's recycled water production capacity can be expanded, thereby ensuring that Palomar Energy will have a stable long-term supply of water without precluding other potential future users.[46] (Ex. 35, Hoagland, Water, p. 4; 4/28/03 RT, p. 48.)

Applicant and the City of Escondido assert that PEP provides a beneficial element by resolving a water quality problem concerning discharges to Escondido Creek. One of the purposes of the recycled water program is to avoid discharge of secondary treated water to Escondido Creek during wet weather when the capacity of the City's ocean outfall system is strained. The power plant is expected to reduce demand on the City outfall system by about 2.7 mgd (3.6 mgd supplied to the power plant and 0.9 mgd returned). By reducing demand on the outfall system, PEP's use of recycled water in effect increases the system's capacity by 2.7 mgd and decreases the likelihood that the system would be overtaxed. (Ex. 35, Hoagland, Water, p. 4.) Since the City's outfall system

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[46] According to City's Utility Manager, the HARRF is planned and designed to include space and facilities to expand tertiary treated water production capacity to 18 mgd in the event of future customer demand for recycled water. (Ex. 35, Hoagland, Water, p. 3.)

capacity is about 18 mgd, the project represents an effective increase in capacity of 15 percent. Most other customers use recycled water for landscape irrigation purposes and do not require HARRF recycled water during wet periods. Thus, the project's year-round use of recycled water eases the burden on the City system during rainy season. (*Ibid.*)

Further, the San Diego County Water Authority indicated support for use of recycled water at the PEP. According to the Water Authority, industrial projects such as the PEP are considered an integral part of the 2000 Urban Water Management Plan, which proposes expansion of the recycled water customer base to help offset the need to import additional water supplies. (Ex. 26.)

5. Dry Cooling Alternative Proposed by Intervenor Powers

Intervenor Bill Powers contested the use of wet cooling technology by the power project and argued that dry cooling is the preferable alternative. The parties offered extensive testimony on the comparable merits of the cooling technologies as summarized below. However, the overwhelming weight of the evidence establishes that use of recycled water for project cooling will not result in any significant adverse impacts to regional water supplies. On the contrary, the local water agencies believe the project's consumption of recycled water is a beneficial use. Moreover, it is consistent with state water policy that encourages use of wastewater for power plant cooling. (State Water Board Resolution 75-58; *See also,* Water Code, § 13550.) The evidentiary record further indicates the project will comply with the Department of Health Services regulations regarding use of recycled water in cooling towers. (Cal. Code Regs., tit. 22, § 60306; *see* **Public Health** Section of this Decision.)

Wet Cooling. Exhaust steam from the steam turbine-generator of a combined cycle power plant requires cooling to condense the steam to liquid water so that the water can be pumped back to the heat recovery steam generators (HRSGs)

in a closed loop. A wet cooling system uses a circulating water loop (separate from the HRSG water/steam loop) that absorbs heat in a surface condenser and then rejects the heat to the atmosphere in a cooling tower. Cooling is achieved by the evaporation of water, which takes advantage of the fugacity or heat of evaporation that occurs in changing the state of water from liquid to vapor. The cooling system requires makeup water to replace the water lost through evaporation and to replace blowdown (water bled off and replaced with new makeup water in order to maintain water quality.) (Ex. 35, Rowley, Water, p. 3; Ex. 50, p. 4.9-A26.).

Dry Cooling. A dry cooling system uses air instead of circulating water to absorb heat from the steam. Steam from the steam turbine-generator exhausts directly to a very large radiator known as an air-cooled condenser (ACC). The ACC consists of multiple finned heat exchange tubes mounted on a large steel framework. Fans are used to draw air in the bottom of the frames and direct it upward through the bundles of tubes discharging the warm air to the atmosphere. The ACC system is composed of multiple "cells;" each cell contains an element of heat exchange tubes and an associated fan to force air over the tubes. According to Staff, about 35 to 40 cells would be necessary for the PEP depending on the optimization, which would result in a large footprint at least 268 by 191 feet wide and 80 feet high.[47] (Ex. 50, p. 4.9-A30.)

Efficiency. According to Applicant, wet cooling results in greater steam turbine-generator electrical output because it provides the steam turbine with more effective heat rejection. The performance of wet cooling is largely a function of ambient *wet bulb* temperature, which at the PEP site remains relatively low (usually less than 80° F) even on hot summer days. This allows the steam turbine exhaust pressure to be maintained at relatively low levels (less than 3.0 inches Hg absolute) and minimizes ambient temperature impacts on steam

[47] Applicant believes a properly sized ACC for the project would be 300 by 300 feet wide by 100 feet tall. (Ex. 35, Rowley, Water, p. 4.)

turbine-generator output. (Ex. 35, Rowley, Water, p. 8). In contrast, the performance of dry cooling is largely a function of ambient *dry bulb* temperature, which means that a dry cooling system for the project would have to be designed for site temperatures of up to 110° F. This would cause the steam turbine exhaust pressure to rise to relatively high levels (greater than 6.0 inches Hg absolute) and, consequently, reduce steam turbine-generator output. (*Id.*, at p. 9).

Applicant asserts that using recycled water is appropriate for this project for several reasons: (1) the availability of ample recycled water from the City of Escondido and the City's interest in supplying it to the project; (2) less visual and noise impact potential, (3) lower capital and operating costs, higher output, and greater efficiency, (4) no significant public health impact potential, and (5) no other significant environmental impacts. (Ex. 35, Rowley, Water, p. 3 et seq.)

Selection of the appropriate cooling system was evaluated at the inception of the project since it affects many other aspects of project development. According to Applicant, dry cooling would constitute a different and inferior project, requiring different equipment layout to accommodate the size of the ACC system and different air dispersion modeling to account for the presence of a massive condenser structure near the HRSG exhaust stacks, visual impacts would be considerable, and noise would increase due to the large number and size of fans required by the ACC. It would also involve a different development agreement with the City and different project economics due to detrimental effects on capital costs, net plant output, and plant efficiency. (Ex. 35, Rowley, Water, p. 4.)

Applicant maintains that each project must be designed based upon site-specific characteristics, including topography, community concerns, transmission line and gas utility availability. (Ex. 35, Rowley, Water, pp. 1-2.)

Other Uses for Recycled Water. Intervenor Bill Powers asserts that the City of Escondido has disregarded potential beneficial uses for recycled water such as irrigation for avocado groves in the area and a proposed long-range plan by the City of San Diego Water Department to inject HARRF-recycled water to the San Pasqual Valley aquifer to produce potable well water. (Ex. 108, p. 11.) Intervenor further argues that the price differential between imported potable water and recycled water is expected to increase substantially in the future, thus, creating a large local market for recycled water in any application that does not require potable water. (*Ibid.*)

The City of Escondido provided evidence that avocado irrigation is not a viable option since the high salinity of the recycled water negatively affects production and the groves are distant from existing infrastructure so that delivering water would not be economically feasible for the City. (Ex. 35, Hoagland, Water, p. 6; *see* Ex. 73.) Further, the City of San Diego's San Pasqual Groundwater Recharge Program has been suspended indefinitely and there is no certainty that the program will be reconsidered or that San Diego would use HARRF as a source of water supply.[48] (*Id*. at p. 5.)

The CEQA Guidelines provide that "…if, after thorough investigation, the Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact. (Cal. Code of Regs., tit. 14, § 15145.) It is well settled that the Lead Agency need not engage in "sheer speculation" as to future environmental consequences. (*Laurel Heights Improvement Assn. v. Regents of the University of California* (1988) 47 Cal. 3rd 376; *Marin Municipal Water District v. KG Land California Corp.* (1991) 235 Cal. App. 3d 1652, 1662.) Intervenor argues the Commission must consider the long-term implications of diverting recycled water from other potential beneficial uses.

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[48] Intervenor Powers provided testimony that the City of San Diego is part owner of HARRF and the HARRF pipeline already reaches the San Pasqual Valley aquifer. Also, according to the Intervenor, the U.S. Bureau of Reclamation has contributed substantial funding to the aquifer recharge program. (Ex. 109, p. 5.)

We find this contention is "too speculative" and hypothetical to establish a reasonable basis for determining that future customers could be precluded from access to recycled water, especially since the City of Escondido has capacity to expand the HARRF to meet demand.

Optimization. Intervenor Powers argues that neither Applicant nor Staff used appropriate optimization criteria in considering the dry cooling alternative. Intervenor asserts they should have used his recommended design plan, which he believes would fit on the PEP site. According to Intervenor, ACC vendors typically provide standard heights of 100 to 120 feet but height can be optimized if it is a critical design criterion and Staff's use of a generic ACC plan for analysis was inadequate. The Intervenor cites the ACC designs at the Crockett Cogeneration Project, licensed by the Energy Commission in 1994 and the Otay Mesa Project, licensed by the Energy Commission in 2001. Intervenor contends that Staff's failure to use the Otay Mesa project design as the model for analyzing the PEP project is a fatal flaw in the alternatives analysis since Otay is in San Diego County and is about the same size (540 MW) as the PEP.[49] (Ex. 109, p. 1.)

CEQA requires an analysis of a "reasonable range of alternatives" that can feasibly accomplish most of the basic objectives of the project and avoid or substantially lessen one or more significant effects. (Cal. Code Regs., tit. 14. § 15126.6.) However, an alternatives analysis is related to reducing significant effects and not to redesigning a project where feasible mitigation is available. The lead agency:

> may approve a developer's choice of a project once its significant adverse environmental effects have been reduced to an acceptable

[49] The Otay Mesa project is located in an undeveloped area of southern San Diego County about 1.5 miles from Tijuana, Mexico. The Otay Mesa site has a different climate and topography compared with the PEP site. When the Otay Mesa project was licensed, there was no recycled water available since no water treatment facility existed in the area. As a result, the Applicant in that proceeding had no option except dry cooling. (Commission Decision on the Otay Mesa Generating Project, (April 2001) Docket No. 99-AFC-5, Publication P800-01-014.)

> level….CEQA does not mandate the choice of the environmentally best feasible project if through the imposition of feasible mitigation measures alone the appropriate public agency has reduced environmental damage from a project to an acceptable level. (*Laurel Hills Homeowners Assn. v. City Counsel of the City of Los Angeles*, (1973) 83 Cal. App. 3d 515, 521.)

We find that Staff's dry cooling analysis is sufficient in this case. Intervenor requested an analysis of the dry cooling option and the evidentiary record is replete with data on this issue even though the analysis was not required since all potential effects will be mitigated. The standard of review is "sufficiency" not "perfection":

> Absolute perfection is not required; what is required is the production of information sufficient to permit a reasonable choice of alternatives so far as environmental aspects are concerned….When the alternatives have been set forth in this manner, an EIR does not become vulnerable because it fails to consider in detail each and every conceivable variation of the alternatives stated. (*Laurel Heights*, *supra*, 47 Cal. 3d at 406-407 [citations omitted].)

Staff's initial analysis did not find the use of recycled water would result in unmitigated impacts to water resources and, therefore, did not indicate the need for an alternative option such as dry cooling. However, in response to Intervenor's request, the Committee directed Staff to provide an analysis of the dry cooling option. (*See* Committee Order Denying Petition for Committee Workshop, dated Oct. 7, 2002.) Assuming *arguendo* that relevant water agencies had objected to the project's used of recycled water or if there was a potential shortage of recycled water available to serve the project, we would have required a comprehensive design analysis that included all aspects of project development. But in this case, review of the dry cooling option was instigated by the Intervenor who indicated his belief that the majority of power plant projects in California should employ dry cooling technology as a matter of statewide water conservation policy. (Ex. 108, pp. 1-4.) However, this licensing proceeding is

not the appropriate forum for devising a new policy.[50] We review projects on a case-by-case basis. Our review of the Palomar Energy Project indicates this is not a case where dry cooling should be required.

Financing. Intervenor further asserts that the financial basis for the establishment of HARRF should weigh in our analysis of whether the Palomar project should be allowed to use recycled water in its cooling process. Intervenor claims that PEP should not benefit from the governmental subsidies that supported the construction and continued financing of HARRF operations. (Ex. 108, p. 3.) As we have no jurisdiction over the financing of HARRF or the relationship between the water agencies and the state financing authorities, this contention is not relevant to our inquiry and we will not consider it further.

Evidentiary Burden of Proof. The Commission's regulations provide that "…the applicant shall have the burden of presenting sufficient substantial evidence to support the findings and conclusions required for certification…." (Cal. Code Regs., tit. 20, § 1748(d). However,

> [t]he proponent of any additional condition, modification, or other provision relating to the manner in which the proposed facility should be designed, sited, and operated in order to protect environmental quality and ensure public health and safety shall have the burden of making a reasonable showing to support the need for and feasibility of the conditions, modification, or provision. The presiding member may direct the applicant and/or staff to examine and present further evidence on the need for and feasibility of such modification or condition. (Cal. Code Regs., tit. 20, § 1748(e).)

Intervenor Powers claims that Staff's alternatives analysis is deficient because it did not consider the Otay Mesa dry cooling design as requested by the Intervenor. It was Intervenor's burden, however, to prove the Otay Mesa design

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[50] The Energy Commission has conducted several public policy workshops on cooling technologies and the impact on water resources but has not adopted a specific policy. (*See*, e.g., Ex. 82 [Water Supply Workshop Issues Summary of Siting Committee Workshop on Cooling Technologies, conducted Feb. 28, 2001].)

would have offered the more appropriate template for the dry cooling alternative. Rather than criticizing Staff's analysis, Intervenor had the opportunity to establish the validity of his contention but he failed to do so. However, even if Staff or the Intervenor had presented an analysis based on the Otay Mesa design, it would not have rebutted the presumption that there are no unmitigated impacts resulting from use of recycled water by the Palomar Energy Project.

Intervenor argues that the Final Staff Assessment[51] (FSA) does not comply with CEQA requirements since it is flawed as an informational document and cannot form the basis of a Decision by the Commission. We believe the Intervenor has misconstrued the Commission's process. The FSA does not represent the entire record; rather, it is Staff's analysis as an independent party to the proceeding. (Cal. Code Regs., tit. 20, §§ 1742, 1742.5, and 1747.) While our case-by-case review of power plant proposals is equivalent to an EIR process, it also provides additional opportunities for public participation by allowing members of the public to become parties to the proceeding.[52] As a party, an Intervenor such as Mr. Powers can offer evidence and cross-examine witnesses to enhance the record for our review.[53]

Mr. Powers believes our review of the PEP project should be a test case of his proposed policy and that we should establish the precedent of requiring dry cooling even in the absence of persuasive evidence of unmitigated impacts to water resources. This is not a test case presenting issues of first impression. The weight of the evidence, including Mr. Powers' voluminous documentary filings, establishes that the project as mitigated will not result in adverse

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[51] Exhibits 50, 51, 51A, and 56-58.

[52] Public Resources Code, section 25519(c).

[53] Mr. Powers' Petition to Intervene was granted April 15, 2002, one year prior to evidentiary hearings. (*See* Committee Order Granting Petition to Intervene, April 15, 2002.) We provided ample opportunity for Mr. Powers to submit testimony and to establish his position. Indeed, the record reflects his participation with the submittal of over 40 exhibits although some were removed from the record by stipulation of the parties, which included Intervenor's agreement.

environmental impacts to water resources and that the use of recycled water for cooling is acceptable.

6. Cumulative Impacts

Projects in the vicinity of the PEP include the CalPeak and RAMCO peaker plants and the ERTC SPA. Implementation of the mitigation measures (including the SWPPP) will ensure that erosion and potential sedimentation are minimized at the PEP site and will not affect nearby facilities. (Ex. 50, p. 4.9-16.)

Stormwater runoff typically increases with urbanization and new construction activities. The PEP will cause an increase in stormwater runoff and the stormwater management system has been designed to accept the increased volume. Prior to off-site discharge, all site stormwater will be routed to a detention basin where it will be temporarily stored and released at a rate equal to or less than pre-existing conditions. Thus, the PEP is not expected to cause any significant cumulative erosion or stormwater impacts. (Ex. 50, p. 4.9-16.)

The CalPeak and RAMCO are simple cycle peakers and do not require wet cooling. Recycled water demand for the ERTC construction phases is expected to total five million gallons (25,000 gallons per day) and approximately 2,000 gallons per day during operations. Compared with the HARRF's capacity to produce 9 mgd of recycled water, the demand for 3.6 mgd by PEP would not result in cumulative impacts to the City's recycled water supply. (Ex. 50, p. 4.9-16.)

All process water will be delivered to the HARRF via the brine return line. Sanitary waste will be discharged to the City of Escondido's sewer system. All processes must comply with Industrial Wastewater Discharge permits and pre-treatment standards. Therefore, the PEP will not contribute to cumulative impacts to water quality or wastewater discharge. (Ex. 50, p. 4.9-16.)

FINDINGS AND CONCLUSIONS

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

1. Soils at the project site are susceptible to erosion during excavation and construction.

2. Stormwater runoff has potential to pollute surface water bodies in the project area.

3. The project owner will submit final Storm Water Pollution Prevention Plans (SWPPP) and Erosion Sedimentation Control Plans (ESCP) for the construction and operation phases of the project.

4. The SWPPP and ESCP plans will be consistent with the City of Escondido's requirements, including Best Management Practices (BMPs).

5. The project owner shall obtain an Industrial User Permit from the City of Escondido for its process wastewater discharges, which will comply with City requirements and applicable federal industrial discharge standards.

6. Project design includes a plume-abated wet cooling system based upon an assessment of cost, efficiency, and compatibility with project goals and the characteristics of the site.

7. The project will utilize 3.6 million gallons per day (mgd) of tertiary treated recycled water from the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF), and will return brine to the City for ultimate discharge through the City's ocean outfall system.

8. The HARRF currently has the capacity to produce 9 mgd of recycled water.

9. The Rincon del Diablo Municipal Water District (MWD), which serves the City of Escondido, provided a Will Serve letter stating that recycled water is available to meet the needs of the power plant project.

10. The MWD, the City of Escondido, and the Palomar Energy Project executed a Recycled Water Agreement, which provides, *inter alia*, that the City will deliver recycled water to the MWD and the MWD will provide the water to the PEP for use in wet cooling and other on-site industrial processes.

11. The project's use of HARRF-produced recycled water will not preclude other current users from obtaining reclaimed water from the HARRF.

12. Potential impacts on water availability to unknown future regional customers of recycled water are speculative.

13. Since HARRF's reclaimed water production capacity can be doubled to 18 mgd, the power plant is not expected to preclude future users from using reclaimed water.

14. HARRF's reclaimed water production capacity is greater than the water demand of its current customer base and the recycled water supplied to the power plant would otherwise be discharged to the ocean for the foreseeable future.

15. Use of recycled water for cooling at the Palomar Energy Project is consistent with state water policy, including SWRCB Resolution 75-58 and State Water Code section 13550 et seq.

16. As a year round user of recycled water, the PEP will effectively increase the capacity of the City of Escondido's ocean outfall system by 2.7 mgd, by reducing stress on the ocean outfall system's capacity during periods of heavy rainfall.

17. The Intervenor has not demonstrated that the dry cooling alternative is required to mitigate environmental impacts of the project's use of recycled water for cooling.

18. Palomar Energy's use of recycled water in the plume-abated wet cooling system does not result in unmitigable impacts to water resources and therefore, the alternative of dry cooling proposed by the Intervenor need not be considered further.

19. No adverse cumulative impacts to soils or water resources were identified in the evidentiary record.

20. Implementation of the Conditions of Certification, below, ensures that the project will conform with all applicable laws, ordinances, regulations, and standards (LORS) related to soil and water resources as identified in the pertinent portions of **Appendix A** attached to this Decision.

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to soil or water resources, and will comply with all applicable laws, ordinances, regulations, and standards (LORS).

CONDITIONS OF CERTIFICATION

SOIL&WATER 1: The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity. The project owner shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the construction of the entire PEP project. Prior to beginning any site mobilization associated with any project element, the project owner shall submit to the CPM a copy of the Notice of Intent for Construction accepted by the San Diego Regional Water Quality Control Board (SDRWQCB) and obtain CPM approval of the construction activity SWPPP for the PEP.

Verification: No later than 60 days prior to the start of site mobilization for any project element, the project owner shall submit a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Construction Activity to San Diego County for review and comment, and to the CPM for review and approval. The SWPPP will include copies of the Notice of Intent for Construction accepted by the SDRWQCB and any permits for PEP that specify requirements for the protection of stormwater or water quality. Approval of the SWPPP by the CPM must be received prior to site mobilization for any project element.

SOIL&WATER 2: Prior to beginning any site mobilization activities for any project element, the project owner shall obtain CPM approval for a site-specific Erosion and Sedimentation Control Plan that addresses all project elements. The plan shall address revegetation and be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1**.

Verification: No later than 60 days prior to the start of any site mobilization for any project element, the project owner shall submit the Erosion and Sedimentation Control Plan to the CPM for review and approval. No later than 60 days prior to start of any site mobilization, the project owner shall submit a copy of the plan to San Diego County for review and request comments be provided to the CPM within 30 days. The plan must be approved by the CPM prior to start of any site mobilization activities.

SOIL&WATER 3: The project owner must obtain approval of the General Industrial Activities SWPPP from the CPM prior to commercial operation of the PEP. The project owner shall comply with all of the requirements of the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity. The project owner, as required, shall develop and implement a Storm Water Pollution Prevention Plan (SWPPP) for the operation of the PEP. The project owner shall submit to the CPM a copy of the Notice of Intent for Operation accepted by the SDRWQCB and obtain approval of the General Industrial Activities SWPPP from the Energy Commission CPM prior to commercial operation of the PEP.

Verification: No later than 60 days prior to the start of commercial operation, the project owner shall submit to the CPM a copy of the SWPPP required under the General NPDES Permit for Discharges of Storm Water Associated with Industrial Activity to San Diego County for review and comment, and to the CPM for review and approval. The operational SWPPP shall include copies of the Notice of Intent for Operation accepted by the SDRWQCB and any permits for the PEP that specify requirements for the protection of stormwater or water quality. Approval of the operational SWPPP by the CPM must be received prior to start of commercial operation.

SOIL&WATER 4: Prior to beginning any site mobilization activities for any project element, the project owner shall submit a Stormwater Management Plan (SMP) consistent with the City of Escondido's Drainage Design Standards. This plan shall document that the existing and proposed project stormwater facilities have adequate capacity as required by the City of Escondido. The SMP shall be consistent with all other permit and design documents and shall demonstrate compliance with all applicable City of Escondido Standard Urban Stormwater Mitigation Plan requirements. The project owner shall include in this plan the installation of secondary containment for the entire site, excluding off-site and linear facilities. The containment design shall have design documentation and specifications for the berms or other walled structures.

Verification: No later than 60 days prior to site mobilization for any project element, the project owner shall submit the Stormwater Management Plan to the CPM for review and approval and to the City of Escondido's Public Works Department for review and comment. The operational SMP shall be approved by the CPM prior to the start of operation.

SOIL&WATER 5: The PEP shall use recycled water for cooling tower makeup, process water, landscape irrigation and all other nonpotable uses. The PEP shall comply with all Title 22, California Code of Regulation requirements.

Verification: At least 60 days prior to the start of construction of the water supply system, the project owner shall submit to the CPM its water supply system design demonstrating compliance with this condition. Those required features shall be included in the final design drawings submitted to the CBO as required in Condition of Certification **CIVIL-1**. Approval of the final design of the water supply and treatment system by the CPM shall be obtained prior to the start of construction of the systems

SOIL&WATER 6: Potable water will not be used for the wet cooling system, landscape irrigation, or for any purpose other than domestic and sanitary use, and shall not exceed two acre-feet in any calendar year. Prior to the use of any water by the PEP, the project owner shall ensure that metering devices are in place to monitor and record in gallons per day (gpd) the total volumes of potable and recycled water supplied to the PEP. Those

metering devices shall be operational for the life of the project. An annual summary of daily water use by the PEP, differentiating between potable and recycled water, shall be submitted to the CPM in the annual compliance report.

Verification: No less than 60 days prior to the start of operation of the PEP, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the pipelines serving the project. Those devices shall be capable of recording the quantities in gallons of water delivered to the PEP in order to report daily water demand. The project owner shall provide a report on the servicing, testing and calibration of the metering devices and operation in the annual compliance report.

The project owner shall submit a water use summary report to the CPM in the annual compliance report for the life of the project. The annual summary report shall be based on and shall distinguish recorded daily use of potable and recycled water. Included in the annual summary of water use, the project owner shall submit copies of meter records from the Rincon del Diablo Municipal Water District documenting the quantities of tertiary-treated disinfected wastewater in gpd delivered to the PEP and potable water supplied over the previous year. The report shall include calculated monthly range, monthly average, and annual use by the project in both gallons per day and acre-feet per year. After the first year and for subsequent years, this information shall also include the yearly range and yearly average water used by the project.

SOIL&WATER 7: The project owner will comply with the City of Escondido's Ordinance 95-8, which requires that the project owner obtain an Industrial User Discharge Permit, develop a Management Plan for toxic and prohibited organic chemicals, and complete a Baseline Monitoring Report.

Verification: At least 60 days prior to the start of operation, the project owner shall provide to the CPM verification that the PEP complies with the requirements of the Industrial User Discharge Permit, has developed a Management Plan for toxic and prohibited organic chemicals, and has submitted a Baseline Monitoring Report.

SOIL AND WATER APPENDIX A

The following elements are required in the Stormwater and Industrial SWPPPs and are listed below for informational purposes. The erosion control drawings and narrative shall be designed and sealed by a professional engineer/erosion control specialist and not by the contractor.

- The topographic features of the proposed project including areas involving all proposed pipeline construction, the 18-acre laydown area, and stockpile location(s). The mapping scale should be 1”= 100’ or less (1”=50’ recommended). The drawings should depict the surrounding area (south and east of site) including the topography and existing features. The drawings should also show existing structures, drainage pipes, and diversion swale(s).
- Soil use limitations associated with construction and revegetation must be acknowledged and resolutions provided to assist the contractor in overcoming any limitation with the soil’s low fertility characteristics. Soil types and other relevant information can be located in the Natural Resources Conservation Services (NRCS) County Soil Survey.
- Proposed contours should be shown tying in with existing ones. All proposed utilities including stormwater facilities should be shown on the plan drawings. All erosion and sedimentation control facilities should be shown on the mapping. The drawings should contain a complete mapping symbol legend that identifies all existing and proposed features including the soil boundary(s) and a limit of construction. The limit of construction boundary should include the project facility, pipeline areas, stockpile areas and laydown areas. The limit of construction ensures all work is confined to the PEP in order to protect all surrounding areas not involved in construction or operation of the proposed project.
- A detailed and specific construction sequence that addresses the entire sequence of events from initial mobilization until final stabilization (e.g. vegetation/asphalt) is achieved.
- Silt fence and haybales, installed on level grade and parallel to the existing contour. If the slope length to the silt fence and haybales exceeds 250 feet, other erosion and sediment control facilities should be used. Silt fence and haybales should be used to trap sediment and not as runoff conveyance or control facilities. During construction, the project owner should use the stormwater management basin as a sediment basin. The basin would need to be temporarily enlarged to account for sediment and stormwater storage. All site and laydown runoff can be intercepted and diverted into the basin.

- All site-specific Best Management Practices (BMPs) need to be depicted on the erosion and sediment control plan and the stormwater management plan and discussed in the narrative. Details of each BMP facility need to be provided on the drawings.
- Provide all proposed vegetative areas on the drawings and soil amendment specifications with regard to excessive drainage, low pH, and high salinity characteristics of the site soil types.
- All final plans approved for adequacy are to be implemented by the contractor. The Compliance Project Manager (CPM) should be contacted before any revisions are made to the approved plans.
- Dewatering facilities, in the event of groundwater contact during excavation activities.
- Stormwater inlet protection needs to be implemented during construction.

Source: Ex. 50 (FSA), pp. 4.9-18 and 4.9-19.

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 Sempra, to implement mitigation measures that will minimize potential adverse impacts to *significant* cultural resources.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Resources Code, § 5024.1; Cal. Code of Regs., tit. 14, § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.) In addition, structures older than 50 years (or less if the resource is deemed exceptional) can be considered for listing as significant historic structures. (Cal. Code of Regs., tit. 14, § 4852 (d)(2) [California Register of Historical Resources].) Since there is often a five year lag between resource evaluation and the date that eligibility is decided, cultural resource specialists may use 45 years as a criterion for considering potential eligibility.

1. Background

Throughout California, significant archaeological and historic artifacts related to Native American cultures, Spanish and Mexican settlements, and/or American frontier settlements could be discovered during project development and construction activities.

In the 1700s and 1800s, Spanish missionaries founded missions in the Escondido area near Mount Palomar. Subsequently, Mexico granted mission lands to Mexican citizens for use as cattle ranches (ranchos). In 1843, the El Rincon del Diablo rancho was established east of the project site, including most of the area now occupied by the City of Escondido. In 1886, investors from Los Angeles purchased the rancho and formed the Escondido Land and Town Company. The town of Escondido was subsequently incorporated in 1888. Railroad service to the area began in 1890 and brought a period of rapid economic expansion to Escondido. In the early 1900s, Escondido served as a supply center for ranches and farms in the area. Completion of Bear Valley Dam on Escondido Creek northeast of Escondido in 1895 had assured a water supply for irrigation agriculture, especially for grape cultivation and subsequently avocado and citrus groves. In the last half of the 20th century, the Escondido area experienced major urban development supporting commercial and industrial activities throughout the area. (Ex. 1, § 5.15.1.4; Ex. 50, p. 4.3-7.)

2. Methodology

The Applicant's investigation of cultural resources in the project vicinity involved both archival research and field surveys, including an historical architectural survey. (Ex. 35, Cleland, Cultural Resources, pp. 3-4.) Archival research was conducted at the South Coastal Information Center (SCIC) of the California Historical Resources Information System (CHRIS) located at California State University, San Diego, and at the San Diego Museum of Man. (Exhibit 6.) The records search related to the PEP site and linear routes was performed as part of environmental studies for the 208-acre ERTC Specific Plan Area. (Ex. 1, Appendix I; Ex. 8.) Archival research for PEP specifically covered a one-mile radius of the PEP site and areas within one-half mile of the water pipelines along Harmony Grove Road, as well as all lands within one-half mile of the gas line upgrade. (Ex. 1, p. 5.16-22.)

The records search revealed that 28 sites or structures and two isolated artifacts have been recorded within the area. There are 18 prehistoric archaeological sites, two

historic archaeological sites, two archaeological sites with both prehistoric and historic components, and six historic structures or facilities, including a well. The prehistoric sites are mostly lithic scatters and/or bedrock milling features. Two of the sites have prehistoric rock art, as well as lithics and bedrock milling features. (Ex. 50, p. 4.3-8; Ex. 6.)

There were 30 structures of historic age previously identified within one mile of the project area. Of these 30 structures, three are the same as three of the six historic structures recorded at the SCIC, and six are listed in the City of Escondido's Historic Resources Inventory. None of the 30 structures are within 2,000 feet of the PEP site but three are located within 100 feet of the proposed gas line route (1070, 1100, and 1110 West Mission Avenue). Six buildings listed in the City of Escondido's Historic Resources Inventory are located at least 3,000 feet of the PEP site and at least 1,200 feet from the linear routes. (Ex. 50, p. 4.3-8; Ex. 2A.)

Archaeological and historic architecture field surveys were also performed as part of the environmental studies for the ERTC Specific Plan Area (SPA). The archaeological survey covered the entire 208-acre SPA while the historic architecture survey covered only structures directly adjacent to the PEP site and linear alignments. Although five new archaeological sites were recorded in the SPA, no previously recorded or new archaeological resources were identified at the 20-acre PEP site or along the reclaimed water line route (Ex. 50, p. 4.3-9; Ex. 1, p. 5.16-13). The Applicant acknowledges the potential for buried resources may exist along the water pipeline route (*Ibid*.; Ex. 35, Cleland, Cultural Resources, p. 5.)

At the request of Staff, a field reconnaissance was performed to determine the status of 13 previously recorded resources that appeared to be near the PEP site or the linear routes. It was determined that only four of the 13 sites still exist.[54] Field investigation

[54] Locus A of CA-SDI-5210 consists of bedrock milling features and associated lithic debitage. It is 12 meters from the gas line route, but protected. Locus B of CA-SDI-5210 consists of bedrock milling features and is located over 100 meters from the gas line route. CA-SDI-5505B consists of fire-affected rock features and associated artifacts. It is contained within a landscaped area of an industrial complex.

determined that the potential significance of these cultural resources would not be materially affected by the PEP. (Ex. 3A, Request 126.)

The field survey for historic architecture was performed by an historical archaeologist to reassess the three previously recorded structures within 100 feet of the gas line route and to identify any previously unrecorded historic structures adjacent to the 20 acre PEP site or along the gas and water line routes. The survey showed that two of the three previously recorded structures had been demolished. (Ex. 50, p. 4.3-9.) As a result of the survey, seven additional structures more than 45 years old were identified adjacent to the PEP site or within 100 feet of the gas line route. Cultural Resources Table 1, replicated below from Staff's testimony, lists these newly identified structures as well as the previously recorded property near the site. (*Ibid.*)

Cultural Resources Table 1 Historical Structures Identified Near PEP

Address	Description	Date of Construction	Appears Eligible	Near
1002 Metcalf Street	Single Family Residence	1956*	No	Gas Line
1072 W. Lincoln Avenue	Single Family Residence	1955*	No	Gas Line
1060 W. Lincoln Avenue	Single Family Residence	1960*	No	Gas Line
1009/1015 W. Lincoln Avenue	Multi-Family Dwelling (2 Structures)	1950s est.	No	Gas Line
917 W. Lincoln Avenue	Single Family Residence	1924*	No	Gas Line
1070 W. Mission Avenue	Industrial Facility	1930s est.	Yes	Gas Line
2310 Harmony Grove Road	Poultry (2 Units)*	Unk.*	N/A	Project Site
2530 Kauana Loa Way	Single Family Residence	1934*	N/A	Project Site
* from DataQuick Information Systems * Not evaluated due to nearby industrial buildings (historical setting was already compromised).				

Source: Ex. 50, p. 4.3-10.

CA-SDI-12,209/H consists of bedrock milling features with rock art and historic refuse. CA-SDI-5501 consists of bedrock milling features and is located in the vicinity of the reclaimed water line route. (Ex. 50, p. 4.3-9; Ex. 3A.)

The historical survey also evaluated the potential significance of the existing electrical transmission lines crossing the PEP site, a radio transmission tower on the SPA but outside the plant site, and the City of Escondido's Hale Avenue Resource Recovery Facility (HARRF). The transmission lines and the HARRF were not found to be historically significant because of insufficient age. Although it was not possible to establish the age of the radio transmission tower, which may be more than 45 years old, the tower is not associated with events or people significant in history, does not appear to exemplify a particular architectural style or engineering accomplishment, and does not meet any of the significance criteria under CEQA, the National Historic Preservation Act, or other LORS. Staff concurred with Applicant's assessment that none of these structures would be eligible for CRHR as historic resources. (Ex. 35, Cleland, Cultural Resources, p. 4; Ex. 50, p. 4.3-10.)

3. The California Native American Heritage Commission

The Native American Heritage Commission (NAHC) maintains records and maps of traditional resource sites and sacred lands located throughout the state. Applicant's review of the NAHC records did not indicate the presence of sacred lands in the project area. (Ex. 1, § 5.16-13; Ex. 50, p. 4.3-10.) To obtain further information about Native American resources near the site, Applicant sent letters and maps to groups and individuals identified by the NAHC. (Ex. 1, Appendix I.1.) Four responses were received concerning an archaeological site containing rock art south of Harmony Road, which is outside the project area and would not be affected. (*Ibid*.) Staff also sent letters to NAHC contacts providing information about the project. (Ex. 50, pp. 4.3-10 and 4.3-11.) The project owner will provide a Native American Monitor during clearing and excavation activities at the PEP site. (Ex. 25.) Conditions **CUL-3**(5) and **CUL-6** require Sempra to implement a monitoring program consistent with NAHC guidelines.

Cumulative Impacts

Most of the land surrounding the project has been developed for industrial uses or is designated for industrial use by the ERTC. Conditions for approval of the ERTC

Specific Plan require implementation of appropriate mitigation measures to record and avoid cultural resources during excavation and grading activities. The Conditions of Certification for PEP also contain similar requirements such that any potential cumulative impacts to cultural resources will be mitigated to levels of insignificance. (Ex. 50, p. 4.3-14.)

Mitigation

According to Staff, the preferred mitigation is avoidance of known resources. If avoidance cannot be achieved, then surface collection, subsurface testing, and data recovery will be implemented. (Ex. 50, p. 4.3-15 et seq.) To prevent adverse impacts to known or unknown resources, Staff proposed several mitigation measures at the PEP site, which are outlined below and incorporated in the Conditions of Certification:

- Avoidance
- Physical Demarcation and Protection
- Worker Education
- Archeological Monitoring
- Native American Monitoring
- Authority of Monitor to Halt Construction
- Cultural Resources Report and Significance Review

Condition **CUL-3** requires the project owner to develop and implement a Cultural Resource Monitoring and Mitigation Plan (CRMMP). If cultural resources are encountered during construction activities, the totality of mitigation measures contained in the Conditions of Certification will ensure that the resources are protected. Condition **CUL-1** requires the project owner to designate a qualified cultural resource specialist to be responsible for implementing the CRMMP. (Ex. 50, p. 4.3-16 et seq.)

FINDINGS AND CONCLUSIONS

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

1. There are several known archaeological or historic resources within a one-mile radius of the PEP site and within 0.5-mile of the linear alignments but none are considered significant under CRHR eligibility criteria.

2. The Native American Heritage Commission has not recorded any Native American sacred properties within the study area.

3. The project owner will obtain the services of a Native American monitor to observe ground disturbance activities in areas where Native American artifacts could be discovered.

4. The potential for impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.

5. The project owner will provide a cultural resources monitor with authority to halt construction if unknown resources are discovered.

6. The City of Escondido's conditions for approval of the ERTC require cultural resources monitoring and avoidance measures during earthwork to construct all components of the industrial park.

7. The potential for cumulative impacts to cultural resources is insignificant.

8. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

The Commission therefore concludes that with implementation of the Conditions of Certification below, the project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of Palomar project ground disturbance, the project owner shall obtain the services of a **Cultural Resources Specialist (CRS)**, and one or more alternates, if alternates are needed, to manage all monitoring,

mitigation and curation activities. The CRS may elect to obtain the services of **Cultural Resource Monitors (CRMs)** and other technical specialists, if needed, to assist in monitoring, mitigation and curation activities. The project owner shall ensure that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR).

CULTURAL RESOURCES SPECIALIST

The resume for the CRS and alternate(s) shall include information demonstrating that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published in the Code of Federal Regulations, 36 CFR Part 61 are met. In addition, the CRS shall have the following qualifications:

1. a technical specialty appropriate to the needs of the project and a background in anthropology, archaeology, history, architectural history or a related field; and

2. at least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California.

The resume of the CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS on referenced projects, and demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during Palomar project ground disturbance, grading, construction and operation. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed CRS or alternate has the appropriate training and background to effectively implement the conditions of certification.

CULTURAL RESOURCES MONITOR

CRMs shall have the following qualifications:

1. a BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or
2. an AS or AA degree in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or
3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

Verification: The project owner shall submit the resume for the CRS, and alternate(s) if desired, at least 45 days prior to the start of Palomar project ground disturbance to the CPM for review and approval.

At least 10 days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval.

At least 20 days prior to Palomar project ground disturbance, the CRS shall submit written notification to the CPM identifying anticipated CRMs for the project stating they meet the minimum qualifications required by this condition. If additional CRMs are needed later, the CRS shall submit written notice one week prior to any new CRMs beginning work.

At least 10 days prior to the start of Palomar project ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions of certification.

CUL-2 Prior to the start of Palomar project ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting individual artifacts. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM.

If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM for approval. Maps shall identify all areas of the Palomar project where ground disturbance is anticipated.

If construction of the project would proceed in phases, maps and drawings, not previously provided, shall be submitted prior to the start of each phase. Written notification identifying the schedule of each project phase shall be provided to the CRS and CPM.

At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until Palomar project ground disturbance is completed.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: The project owner shall submit the subject maps and drawings at least 40 days prior to the start of Palomar project ground disturbance.

If there are changes to any Palomar project related footprint, revised maps and drawings shall be provided at least 15 days prior to start of ground disturbance for those changes.

If project construction is phased, if not previously provided, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

A current schedule of anticipated project activity shall be provided to the CRS on a weekly basis during Palomar project ground disturbance and also provided in each Monthly Compliance Report (MCR).

The project owner shall provide written notice of any changes to scheduling of construction phases within five days of identifying the changes.

CUL-3 Prior to the start of Palomar project ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by the CRS, to the CPM for approval. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site manager. No Palomar project ground disturbance shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures.

1. A proposed general research design that includes a discussion of research questions and testable hypotheses applicable to the project area. A refined research design will be prepared for any resource where data recovery is required.
2. The following statement shall be added to the Introduction: Any discussion, summary, or paraphrasing of the conditions in the CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. If there appears to be a discrepancy between the conditions and the way in which they have been summarized described, or interpreted in the CRMMP, the conditions, as written in the Energy Commission's Decision, supercede any interpretation of the Conditions in the CRMMP. (The Cultural Resources conditions of Certification are attached as an appendix to this CRMMP).
3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during Palomar project ground disturbance, construction, and post-construction analysis phases of the project.
4. Identification of the person(s) expected to perform each of the tasks, their responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.
5. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.
6. A discussion of all avoidance measures such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address

how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

7. A discussion of the requirement that all cultural resources encountered will be recorded on a DPR form 523 and mapped (may include photos). In addition, all archaeological materials collected as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with The State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural resources set forth at Title 36 of the Federal Code of Regulations, Part 79.
8. A discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding will be met. The name and phone number of the contact person at the institution. Indication the project owner pays all curation fees and that any agreements concerning curation will be retained and available for audit for the life of the project.
9. 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 construction.
10. A discussion of the proposed Cultural Resource Report (CRR) which shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines.

Verification: The project owner shall submit the subject CRMMP at least 30 days prior to the start of Palomar project ground disturbance. Per ARMR Guidelines the author's name shall appear on the title page of the CRMMP. A letter shall be provided to the CPM indicating that the project owner will pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for review and approval. The CRR shall be written by the CRS and provided in ARMR format. The CRR shall report on all field activities including dates, times and locations, findings, samplings and analysis. All survey reports, DPR 523 forms and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) shall be included as an appendix to the CRR.

Verification: The project owner shall submit the subject CRR within 90 days after completion of Palomar project ground disturbance (including landscaping). Within 10 days after CPM approval, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the State Historic Preservation Office (SHPO), the CHRIS and to the curating institution (if archaeological materials were collected).

CUL-5 The project owner shall ensure that a Worker Environmental Awareness Program (WEAP) shall be provided, each week, to all new employees, who have not previously received the training, starting prior to the beginning and for the duration of Palomar project ground disturbance. The training may be presented in the form of a video. The training shall include:

1. a discussion of applicable laws and penalties under the law;
2. samples or visuals of artifacts that might be found in the project vicinity;
3. information that the CRS, alternate CRS or CRM has the authority to halt construction in the event of a discovery or unanticipated impact to a cultural resource;
4. instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the CRS or CRM;
5. an informational brochure that identifies reporting procedures in the event of a discovery;
6. an acknowledgement form signed by each worker indicating that they have received the training;
7. and a sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: The project owner shall provide the WEAP Certification of Compliance Report form in the Monthly Compliance Report identifying persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The project owner shall ensure that:

1. The CRS, alternate CRS, or monitors shall monitor ground disturbance full time in the vicinity of the Palomar project site, linear alignments, and ground disturbance at laydown areas or other ancillary areas to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter or email providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring. The CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

2. The CRS shall notify the project owner and the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources

conditions of certification within 24 hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

3. Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions of certification.

4. A Native American monitor shall be obtained, to monitor Palomar project ground disturbance in areas where Native American artifacts may be discovered. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored.

Verification: During the ground disturbance phases of the Palomar project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval.

During the ground disturbance phases of the Palomar project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. Copies of daily logs shall be retained and made available for audit by the CPM.

Within 24 hours of recognition of a non-compliance issue, the CRS shall notify the CPM and the project owner by telephone of the problem and of steps being taken to resolve the problem. The telephone call shall be followed by an e-mail or fax detailing the non-compliance issue and the measures necessary to achieve resolution of the issue. Daily logs shall include forms detailing any instances of non-compliance with conditions of certification. In the event of a non-compliance issue, a report written no sooner than two weeks after resolution of the issue that describes the issue, resolution of the issue and the effectiveness or the resolution measures, shall be provided in the next MCR. One week prior to Palomar project ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who shall initiate a resolution process.

CUL-7 The project owner shall grant authority to the CRS, alternate CRS and the CRMs to halt construction if previously unknown cultural resource sites or materials are encountered, or if known resources may be impacted in a previously unanticipated manner. Redirection of Palomar project ground

disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event resources are found or impacts can be anticipated, the halting or redirection of construction shall remain in effect until all of the following have occurred:

1. the CRS has notified the project owner and the CPM as soon as possible but no later than 24 hours of the find description and the work stoppage.;

2. The CRS, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and

3. Any necessary data recovery and mitigation has been completed.

Verification: At least 30 days prior to the start of Palomar project ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate CRS and CRMs have the authority to halt construction activities in the vicinity of a cultural resource find, and that the CRS or project owner shall notify the CPM as soon as possible but no later than 24 hours (or Monday morning in the case of a weekend) following any halt of construction activities, including the circumstance and proposed mitigation measures. The project owner shall provide the CRS with a copy of the letter granting the authority to halt construction.

D. GEOLOGY AND PALEONTOLOGY

This section reviews the project's potential impacts on significant geological and paleontological resources, and surface water hydrology. It also evaluates whether project-related activities could result in public exposure to geological hazards; and if so, whether proposed mitigation measures will adequately protect public health and safety.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The PEP site and associated pipelines are located in the Peninsular Ranges Geomorphic province in northern San Diego County, which is characterized by gently rolling foothills and narrow valleys. Bedrock is exposed in portions of the site and consists of Cretaceous aged, granitic, intrusive rock known as Green Valley Tonalite. The bedrock surface exhibits a variable weathering pattern, ranging from deeply weathered along fractures to relatively fresh, hard rock. Surface soils consist primarily of colluvium composed of silty to clayey sand. (Ex. 1, § 5.5.1.1.) Geologic mapping shows that the water supply and brine return pipeline alignment passes through the Green Valley Tonalite, and the gas pipeline upgrade passes through undifferentiated Quaternary sedimentary rock. (Ex. 50, p. 5.2-2.)

1. Potential for Seismic Events

Applicant conducted a Geotechnical Study (GS) to assess potential geological hazards at the site and along the linear alignments. (Ex. 1, Appendix C.) The project area is designated Seismic Zone 4 for the highest level of earthquake activity. Several active earthquake faults lie within a 60-mile radius of the site.[55] (Ex. 1, § 5.5.1.2, Appendix C, § 6; Ex. 50, p. 5.2-3.) However, no historically active faults cross the site. (Ex. 1, p. 5.5-7.) The nearest known active fault (Rose Canyon Fault) is located offshore about

[55] The California Division of Mines and Geology (CDMG) defines an "active" fault as one that has shown evidence of surface displacement within Holocene time and a "sufficiently active" fault when there is

14 miles west-southwest of the site. (*Ibid*.) Major earthquakes occurring on the Rose Canyon Fault or other active regional faults could subject the site and linear facilities to moderate to severe ground shaking. (Ex. 1, Appendix C, § 6; Ex. 50, p. 5.2-3.)

The GS contains a site-specific study, which assessed the potential for ground rupture, liquefaction, dynamic compaction, hydrocollapse, subsidence, expansive soils, and landslides beneath or adjacent to project components that would present potential hazards associated with strong seismic shaking and/or unusual water infusion. (Ex. 1, Appendix C.) Staff reviewed the GS and concluded that the potential for such seismic hazards would not be significant. (Ex. 50, p. 5.2-3 et seq.) Both the rough and final grading of the site will be performed in accordance with sound professional practice and City of Escondido grading requirements to ensure the stability of slopes and soil structures and, therefore, no significant adverse impacts are expected. (Ex. 35, Bilodeau, Geology, p. 3.) Conditions of Certification **GEN-2** and **CIVIL-1** in the **Facility Design** section of this Decision require the project owner to submit the appropriate design calculations and specifications, the soil erosion control plan, and the required CBC geotechnical reports for approval before project construction.

The final project design will incorporate measures to mitigate any potential seismic damage resulting from the geological phenomena identified in the GS. The project will be designed to withstand strong seismic ground shaking in accordance with California Building Code (CBC) standards for Seismic Zone 4. (Ex. 1, §§ 5.5.1.5 and 5.5.5; Ex. 35, Bilodeau, Geology, p. 3.) *See* the pertinent Conditions of Certification in the **Facility Design** section of this Decision.

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evidence of displacement along one or more of its branches. The DMCG delineates Earthquake Fault Zones near active faults under the Alquist-Priolo Earthquake Fault Zoning Act. (Ex 1, § 5.5.1.2.)

2. Potential for Flooding, Tsunamis, Seiches

The site is situated about 630 to 880 feet above mean sea level and no large bodies of water are nearby; thus, there is no potential for flooding or earthquake-induced waves to affect the site. (Ex. 50, p. 5.2-5.)

3. Potential Impacts to Geological/Paleontological Resources

Applicant submitted a Paleontological Technical Report, which assessed potential project-related impacts to geological and paleontological resources. (Ex. 1, Appendix J.) The Report was based on archival research of geological and paleontological records and a field inspection of the site. No geological formations nor fossil localities were identified at the site and no in-situ paleontological resources were found during the course of Applicant's field surveys. (Ex. 1, § 5.7 and Appendix J.)

According to the Applicant's expert witness, the absence of fossil localities is consistent with geologic conditions at the site and vicinity. The granitic rocks underlying the site and northern portion of the water line route are assigned a zero paleontological resource potential because of their magmatic origin, and the recent alluvium and colluvium that underlie the remainder of the pipeline routes are assigned a low sensitivity because of their modern origin. (Ex. 35, Demere, Paleo, p. 2.) Thus, potential impacts at the site are rated zero significance, and impacts along the pipeline segments that are not granite (zero significance) are low significance. Since the potential for encountering paleontological resources during project construction and operation is extremely low, Staff concurred with Applicant's view that no mitigation measures are necessary.[56] (*Ibid*.; Ex. 50, pp. 5.-5 and 5.2-6.)

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[56] According to Applicant, the primary measure taken to ensure LORS compliance was the assessment contained in the Paleontological Technical Report, which concluded there would be minimal potential for project-related impacts to paleontological resources and, thus, no need for standard employee educational programs or contingency measures for mitigation. (Ex. 35, Demere, Paleo, p. 2; Ex. 1, § 5.17.3.)

FINDINGS AND CONCLUSIONS

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

1. The project is located in Seismic Zone 4, which presents significant earthquake hazards.

2. The project will be designed to withstand strong earthquake shaking in accordance with the requirements for Seismic Zone 4 established in the California Building Code.

3. Final project design will include measures to mitigate potential risk from ground rupture, liquefaction, dynamic compaction, hydrocollapse, subsidence, expansive soils, and landslides associated with strong seismic shaking.

4. There is no potential for flooding at the site due to earthquake-induced waves.

5. There is no evidence of existing or potential geological or paleontological resources at the project site or along the linear alignments and, therefore, no mitigation is necessary.

The Commission therefore concludes that implementation of the Conditions of Certification in the **Facility Design** section of this Decision ensure that project activities will not cause adverse impacts to either geological or paleontological resources or expose the public to geological hazards.

CONDITIONS OF CERTIFICATION

General Conditions of Certification with respect to geological resources are covered under Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** and **CIVIL-2** in the **Facility Design** section.

VII. 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

Local ordinances and policies relevant to the Palomar Energy Project include the Escondido Research and Technology Center Specific Plan (ERTCSP), adopted by the City of Escondido, as well as the overall City of Escondido General Plan and the Escondido Zoning Ordinance. (Ex. 50, p. 4.5-1 et seq.; Ex. 21, Ex. 33.)

1. The Site

The PEP site was originally part of a Specific Plan Area (SPA) formerly designated in the General Plan as the Harmony Grove Specific Planning Area, or Quail Hills, "a high-quality industrial park, encouraging clean industrial uses to expand Escondido's industrial and employment base." (Ex. 50, p. 4.5-3.)

The ERTCSP, which amended and superseded the Quail Hills Specific Plan, was adopted by the City of Escondido in November 2002 as a comprehensive zoning document to regulate development of the specialized industrial and office uses

included within the ERTC SPA.[57] (Ex. 21; Ex. 33.) The ERTCSP includes the PEP power plant as one of two potential uses for Planning Area 1 within the ERTC SPA.[58] (Ex. 35, Bachrach, Land Use, p. 3; Ex. 50, p. 4.5-9.).

The ERTCSP provides for development of the overall 208-acre ERTC SPA consistent with the City of Escondido Zoning Ordinance.[59] The SPA is located in a region of rapid urban growth in the western portion of the City of Escondido, with industrial and urban development occurring to the north and east. The PEP site, a 20-acre parcel, is located within the northeast portion of the ERTC SPA. (Ex. 50, p. 4.5-4.)

The entire SPA, including the PEP site, is currently undeveloped land. To the west and south of the SPA are semi-rural residential lands. To the north is land used and designated for industrial uses, including the existing CalPeak power plant adjacent to the northeast boundary of the PEP site. Further south of the SPA, across Escondido Creek is an existing urban (more than three dwelling units per acre) residential area. Significant portions of the SPA have been disturbed by off-road vehicle activities and grading. Numerous utility easements, including SDG&E's 200-foot wide transmission corridor, dirt roads, and trails traverse the SPA. (Ex. 1, p. 5.7-9; Ex. 35, Bachrach, p. 3; Ex. 50, p. 4.5-4).

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[57] On November 25, 2002, the City of Escondido City Council adopted Resolution No. 2002-293(R), approving the General and Specific Plan Amendments for the ERTC, and adopted Resolution No. 2002-307(R) certifying the Environmental Impact Report for the ERTC Specific Plan Area. (Ex. 21; Ex. 22; Ex. 33; Ex. 50, p. 4.5-3.)

[58] Under Chapter III of the ERTCSP, two alternative permitted use programs are designated for Planning Area 1: Alternative A allows light industrial uses and Alternative B allows a 550 MW power plant. Selection of Alternative A or B is solely within the discretion of the developer. (Ex. 33; Ex. 50, p. 4.5-9.)

[59] The ERTC SPA is zoned S-P for Specific Plan. (Ex. 1, §5.7.1.5.) The Zoning Ordinance requires permitted uses and development standards within an S-P zone be fully defined through the adoption of a specific plan. Development of the PEP and linear facilities would be consistent with the permitted uses, development standards, and design guidelines identified in the ERTCSP and, therefore, the project would not conflict with the Escondido Zoning Ordinance. (Ex. 50, p. 4.5-11.)

The PEP site contains approximately six acres of land classified as Farmland of Local Importance by the California Department of Conservation (DOC). The DOC had previously classified this land as Unique Farmland on its 1998 Important Farmland Map for San Diego County. However, since no farming is occurring on this portion of the site, which contains the remnants of an abandoned avocado orchard, the DOC downgraded the area to Farmland of Local importance, which is not a significant resource under CEQA. Accordingly, the PEP's conversion of six acres of Farmland of Local Importance is not a significant impact. (Ex. 50, p. 4.5-4; Ex. 1, § 5.6, Figure 5.6-1.) There are no prime agricultural lands within a one-mile radius of the site. (Ex. 35, Bachrach, Land Use, p. 1.)

Both the water and natural gas pipeline routes are within existing paved roadways. The portion of the water line route along Harmony Grove Road passes through a residential area as it approaches Escondido Creek. The natural gas pipeline route is located within a mixed residential, industrial, and commercial area. (Ex. 1, p. 5.7-9; Ex. 35, Bachrach, Land Use, p. 3; Ex. 50, p. 4.5-6.)

2. Potential Impacts

During project construction, nearby land uses will experience increased traffic volumes, noise, and air emissions from construction activities. The City of Escondido's Conditions of Approval for the ERTCSP identify measures to minimize traffic, noise, air emissions, and other impacts of the overall industrial park. (Ex. 21; Ex. 35, Bachrach, Land Use, p. 2; Ex. 50, p. 4.5-12.)

The ERTC Specific Plan Mitigation, Monitoring, and Reporting Program requires implementation of specific mitigation measures to ensure that potential construction-related impacts are reduced to insignificant levels. (Ex. 24.) No land use impacts are expected to result from PEP-related operations because

elevated terrain provides visual screening and noise attenuation at residential areas and other industrial uses in the vicinity.[60] As discussed throughout this Decision, potential project-related impacts to air quality, public health, traffic, biological and cultural resources will be mitigated to insignificant levels. (Ex. 50, p. 4.5-12; Ex. 1, § 5.7.2.2.)

The PEP is consistent with the General Plan, specifically, Goal 5, which encourages high-quality industrial, manufacturing, retail, and service-oriented business to create and maintain a strong economic base for the community. (Ex. 50, p. 4.5-8.) Moreover, the PEP fulfills the General Plan goal of providing dependable energy to meet existing demand in Southern California. Therefore, according to Staff, development of the power plant conforms with applicable environmental plans and policies. (*Ibid*.; See also, Ex. 21, § 7.2.1.2.)

The evidentiary record further indicates that the PEP has no potential to physically divide an existing community since it is located entirely within the undeveloped ERTC SPA and neither the size nor nature of the project would alter any land use patterns in the area. (Ex. 50, p. 4.5-8.)

All land uses within the ERTC SPA will be located and designed to be compatible with uses outside and inside the specific plan, consistent with the policies and standards established in the ERTCSP. (Ex. 33, p. 8.) Since the designated land uses within the ERTC SPA are consistent with the City's General Plan, development of the PEP would not conflict with the permitted uses, design, and development standards for Planning Area I. (Ex. 50, p. 4.5-11, Ex. 35, Bachrach, Land Use, p. 2.) Condition of Certification **LAND-1** in this Decision requires the PEP project owner to verify that the PEP conforms with all applicable design and performance standards for Planning Area 1 as set forth in the ERTCSP.

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[60] Properties within a one-mile radius of the PEP site are dominated by existing and planned urban and industrial uses. The nearest residence is 1,850 feet west of the site and a multi-family residential development is located approximately 2,800 feet to the southeast. Two schools and one park are located at the edge of the one-mile radius. (Ex. 35, Bachrach, Land Use, p. 1.)

There is no evidence of PEP-related cumulative land use impacts since the project is consistent with the City's long-range policies and does not affect development of non-ERTC projects within the City of Escondido, which tend to be in-fill projects. (Ex. 50, pp. 4.5-8 and 4.5-11.)

FINDINGS AND CONCLUSIONS

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

1. The project site is located in the City of Escondido within the Escondido Research and Technology Center (ERTC) Specific Plan Area (SPA).

2. The PEP is consistent with City of Escondido's General Plan, Zoning Ordinance, and the ERTC Specific Plan.

3. The project is compatible with the City of Escondido's existing and planned uses and zoning designations for the site and surrounding area.

4. The project will comply with the City of Escondido's ERTC Specific Plan Mitigation, Monitoring and Reporting Program.

5. No significant farmland will be affected by development of the PEP site.

6. There is no potential for the PEP to disrupt or divide the physical arrangement of an established community or unduly restrict existing or planned land uses.

7. There is no evidence of potential cumulative land use impacts resulting from development of the PEP.

8. The Condition of Certification, below, ensures that the PEP will comply with the relevant land use requirements in accord with all applicable laws, ordinances, regulations, and standards (LORS) identified in the evidentiary record and included in the pertinent portion of **Appendix A** of this Decision.

We therefore conclude that construction and operation of the PEP will not result in direct, indirect, or cumulative land use impacts. Implementation of the Condition of Certification, below, ensures that the PEP will comply with all

applicable laws, ordinances, regulations, and standards (LORS) related to land use.

CONDITION OF CERTIFICATION

LAND-1 The project owner shall comply with the design and performance standards for Planning Area 1 as set forth in the City of Escondido Research and Technology Center Specific Plan.

Verification: At least 30 days prior to construction of the PEP, the project owner shall submit written evidence to the CPM that the project conforms to all applicable design and performance standards for Planning Area 1 as set forth in the City of Escondido Research and Technology Center Specific Plan. The submittal to the CPM shall include evidence of review and comment by the City of Escondido.

B. TRAFFIC AND TRANSPORTATION

In this section, we examine the extent to which the project will affect regional and local transportation systems. Construction and operation of a power plant have the potential to adversely impact the transportation system in the vicinity. During the construction phase, workers arriving and leaving during peak traffic hours and the delivery of large pieces of equipment could increase roadway congestion and affect traffic flow. During plant operation, the potential for impacts is minimal due to the limited number of vehicles involved, although a slight increase in deliveries of hazardous materials is expected. In all cases, transportation of hazardous materials must comply with federal and state laws.

The evidentiary record contains a review of the relevant roads and routings in the vicinity; the potential traffic problems associated with those routes; the anticipated number of deliveries of oversized/overweight equipment; the anticipated encroachments upon public rights-of-way; and the frequency of and routes associated with the delivery of hazardous materials. (Ex. 1, § 5.11; Ex. 50, § 4.10.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The PEP site is located in the City of Escondido about 600 feet south of the intersection of Vineyard Avenue and Enterprise Street, and east of the future Citracado Parkway extension through the Escondido Research and Technology Center (ERTC) Specific Plan Area (SPA). The primary access route to the site is via Interstate Highway 5 (I-5) to Interstate Highway 15 (I-15) to State Route 78 (SR-78), exit SR-78 at the Nordahl Road exit, proceed south on Citracado Parkway to Vineyard Avenue, east on Vineyard to the future Citracado Parkway extension, and then south on the Citracado Parkway extension to the site

entrance.[61] (Ex. 35, Barker, Traffic, p. 3; Ex. 1, § 5.11.1.4.) Mission Road, a six-lane, major road from Nordahl/Citracado to Andreason Drive runs parallel to SR-78 and may also be used to access the site. (Ex. 1, § 5.11.2.1.) Staff's Traffic and Transportation Figure 1, below, shows the regional setting and major roadways.

The future Citracado Parkway will be rough graded by the ERTC developer during initial development of the industrial park to allow PEP construction traffic to access the PEP site. Power plant construction-related parking will be provided on portions of the ERTC SPA near the PEP site. After completion of power plant construction, a two-lane paved roadway off the completed Citracado Parkway extension will provide permanent access to the power plant site. (Ex. 35, Barker, Traffic, p. 3; Ex. 50, pp. 4.10-8, 4.10-12; Ex. 21; Ex. 24.)

Vehicle classification counts conducted as part of the ERTC Specific Plan amendment process indicate that trucks comprise approximately 35 percent of the total traffic volume on Citracado Parkway south of Mission Road and on Vineyard Avenue east of Citracado Parkway. Trucks comprise approximately four percent of the daily traffic volume on I-15 and SR-78. (Ex. 50, p. 4.10-9.)

According to Staff, intersections are usually the critical elements of the roadway system when assessing adequate travel capacity, maximizing safety, and minimizing environmental impacts. The operating conditions of a roadway system are described by the level of service (LOS) experienced at an intersection or roadway based on traffic congestion (delay). LOS ranges from "A," representing free-flow conditions with little or no delay to "F," representing saturated conditions with substantial delay. (Ex. 50, p. 4.10-9.)

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[61] Citracado Parkway will be extended between VIneyard Avenue and Harmony Grove Road in conjunction with the development of the ERTC. Construction of the Citracado extension is tied to the development schedule for the PEP and ERTC industrial park. (Ex. 50, p. 4.10-8.)

INSERT REGIONAL MAP FROM FSA (TRAFFIC & TRANS FIGURE 1)

(NOTE: SEE SUSAN'S ACCORDIAN FILE ON T&T)

Under the City of Escondido's significance criteria for both signalized and unsignalized intersections, a traffic impact is considered significant when the intersection LOS falls below mid-level LOS D (i.e., delay of 45.1 seconds or more for signalized intersections and 30.1 seconds or more for unsignalized intersections). If the intersection already operates at mid-LOS D or worse, a significant cumulative impact occurs if delay increases by more than two seconds for either signalized and unsignalized conditions. (Ex. 50, p. 4.10-9.)

Staff's analysis of existing conditions at the intersections most affected by PEP-related construction traffic and the current service levels is shown below in Staff's Traffic and Transportation Table 1. (Ex. 50, p. 4.10-9.)

Traffic and Transportation Table 1
Intersection Level of Service - Existing Conditions

Intersection	*Analysis Type*	*A.M. LOS*[1]	*P.M. LOS*[1]
Nordahl Rd./Highway 78 WB ramps	Traffic Signal	B	C
Nordahl Rd./Highway 78 EB ramps	Traffic Signal	A	C
Nordahl Rd/Citracado Pkwy/Mission Rd.	Traffic Signal	C	C
Country Club Drive/Citracado Pkwy.	Two-Way Stop	Country Club Dr. = F Citracado = A	Country Club Dr. = F Citracado = A
Vineyard Ave./Citracado Pkwy (Future Intersection)	Two-Way Stop		

[1] Level of service for intersections was determined using the 1997 Highway Capacity Manual (HCM) Chapter 9 (Signalized Intersections) methodology (NRC/TRB 1998). HCM two-way stop control methodologies provide LOS calculations by movement, not for the entire intersection.

Nordahl Road and Citracado Parkway currently function as four-lane divided arterials, while Vineyard Avenue is a two-lane collector. At all but one of the intersections expected to be most affected by PEP-related traffic, peak hour traffic volumes currently function at an acceptable LOS C, based on analysis of conditions at the intersections of concern (Nordahl/SR-78 westbound, Nordahl/SR-78 eastbound, and Mission Road/Nordahl/Citracado Parkway). However, the Country Club Drive approach to the unsignalized Country Club

Drive/Citracado Parkway intersection currently operates at an unacceptable LOS F in both the morning and afternoon peak traffic periods. (Ex. 50, p. 4.10-10). SR-78 operates at an unacceptable LOS F during both the a.m. and p.m. peak periods; the segment of I-15 immediately south of SR-78 operates at an unacceptable LOS E, but the segment north of SR-78 operates at an acceptable LOS C. (Ex. 1, pp. 5.11-9 and 5.11-10; Exhibit 2A, Response 63; Exhibit 35, Barker, Traffic, p. 3; Ex. 50, pp. 4.10-9 and 4.10-10).

1. Construction Impacts

Applicant estimates construction of the power plant project will occur over a 21-month period and will require an average daily workforce of 240 workers and peak daily construction workforce of about 350 during the eleventh month. A worst-case commute scenario assumes that during the peak construction period all construction workers will drive to work individually, generating 700 vehicle trips to and from the site each day. Approximately 12 truck deliveries per day are expected on average, peaking at 30 truck deliveries per day. (Ex. 1, p. 5-11; Ex. 50, p. 4.10-11).

According to the Applicant, considering the likely routes and distribution of the project's peak construction phase traffic volume and assuming the worst-case vehicle occupancy factor of one person per vehicle (e.g., zero ridesharing), no significant impacts are expected on freeway traffic conditions (SR-78 and I-15). (Ex. 35, Barker, Traffic, p. 4.) During the peak construction period, incremental project traffic on Citracado, the most heavily traveled roadway for project traffic, is not expected to exceed two percent of the total expected roadway volume (the threshold of impact significance) and the LOS will remain at acceptable levels (LOS C or better). Project construction traffic, however, will add congestion to the unacceptable (LOS F) conditions that already exist at the Country Club Drive/Citracado Parkway intersection (a.m./p.m. peak) and impact the Vineyard

Avenue/Citracado Parkway intersection (p.m. peak).[62] (Ex. 1, pp. 5.11-13 to 5.11-16; Ex. 35, Barker, Traffic, p. 4; Ex. 50, pp. 4.10-12 to 4.10-14).

To minimize the effect of additional traffic at the County Club Drive/Citracado intersection, the City of Escondido's Conditions of Approval for the ERTC and the Mitigation and Monitoring Program for the ERTC EIR require the PEP project owner to contribute its fair share along with the ERTC developer to fund the installation of a traffic signal at this intersection. (Ex. 21; Ex. 24; Ex. 50, p. 4.10-13; Ex. 35, Barker, Traffic, pp. 4-5.) Condition of Certification **TRANS-8** requires the PEP project owner to provide written verification that it has complied with the City's requirements for contribution to the costs of the traffic signal and to include specific measures in a plan approved by the City Engineer to mitigate construction-related impacts due to PEP construction traffic. (Ex. 51A; 4/8/03 RT, p. 76 et seq.)

The City's Conditions of Approval for the ERTC require the overall industrial park developer to eventually install a traffic signal at the Vineyard Avenue/CitracadoParkway intersection. (Ex. 21; Ex. 24.) To address intersection control and turning movements at this intersection during the PEP construction phase, however, the PEP project owner's traffic mitigation plan (as approved by the City Engineer) will include the installation of appropriate left and right turning lanes on Vineyard Avenue plus adequate taper length for each turning movement. In addition, the project owner will install a stop sign for northbound movements from the rough graded Citracado alignment to Vineyard. Condition **TRANS-6** requires the project owner to implement these measures prior to the start of construction.

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[62] Applicant assumed that all workers using the Nordahl Road exit from SR-78 (about 75 percent of peak period and overall construction worker trips will travel through the Country Club/Citracado Parkway intersection and all PEP-related construction traffic will turn south at the Citracado/ Vineyard intersection. (Ex. 1, § 5.11.2.1; Ex. 50, pp. 4.10-11 and 4.10-13.)

At peak construction, the project will involve approximately 60 truck trips per day (30 roundtrip deliveries). No significant impacts are expected on either the freeways or local roadways, although project-related truck traffic will contribute slightly to roadway wear on Citracado Parkway. (Ex. 1, p. 5.11-16, Table 5.11-12.) Condition **TRANS-7** requires the project owner to repair and reconstruct roadways damaged by construction-related traffic. To further reduce potential traffic congestion, truck deliveries will be scheduled during off-peak hours whenever possible. Condition **TRANS-5** requires the project owner to implement a Traffic Control Plan to address timing for truck deliveries. Condition **TRANS-1** addresses oversize and overweight loads delivered by truck to the PEP site. Condition **TRANS-3** requires that deliveries of hazardous materials comply with applicable LORS.[63]

Installation of the project's water line within the roadway of Harmony Grove Road and the natural gas pipeline upgrade within the roadways of Metcalf Avenue and Lincoln Street will temporarily disrupt traffic flows on these roadway segments while the construction work is underway but no long-term significant impacts will result. (Ex. 35, Barker, Traffic, p. 4). Repair and remediation for damage to public roadways will be addressed through the encroachment permit process described in Condition **TRANS-2**. *See* also Condition **TRANS-7**.

Temporary construction worker and visitor parking will be limited to designated areas within the ERTC SPA, which would not affect public roads. Condition **TRANS-4** requires the project owner to develop a Parking and Staging Plan to ensure that all project-related parking occurs on-site.

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[63] Transportation of hazardous substances to the site during project construction and operation can increase potential roadway hazards. During operations, there will be truck deliveries of aqueous ammonia once a week. (Ex. 50, p. 4.10-16.) Condition **HAZ-7** requires the project owner to follow a preferred truck route for hazardous materials deliveries and to ensure that appropriate permits and licenses are obtained by the subcontractors responsible for the deliveries.

To ensure that construction traffic does not significantly affect area traffic, Condition of Certification **TRANS-5** requires Applicant to develop a traffic control plan that addresses, *inter alia,* the following issues: establishment of work hours outside of peak traffic periods, timing of delivery for heavy equipment outside of peak hours, detours, signing, lighting, and traffic control devices, maintenance of emergency access, and access to adjacent commercial and residential properties during linear facility construction.

2. Operational Impacts

Traffic impacts associated with project operation consist of incremental commute trips by new employees and periodic truck deliveries. The project will add only 20 full-time employees. The evidence indicates that even if each employee commutes in a single vehicle during morning and evening peak hours, worker commute trips will be insignificant. (Ex. 50, p. 4.10-16.) Truck deliveries expected during project operation constitute less than one percent of traffic on area roadways and will be insignificant. (*Ibid.*; Ex. 1, § 5.11.2.2.)

3. Cumulative Impacts

Staff relied on the City of Escondido's Traffic Impact Analysis for the ERTC SPA, which includes 15 potential projects as part of the cumulative analysis. The analysis considered a worst case trip generation scenario assuming the entire ERTC industrial park, including the PEP site would be full developed. (Ex. 50, p. 4.10-7, Ex. 22.) The City's worst case scenario assumes there will be significantly more daily commuter traffic associated with the ERTC composed of office park uses, compared with the PEP-related commuter traffic that contemplates only 20 employees on a daily basis. Although traffic volumes due to the overall build-out of the ERTC would impact cumulative traffic on SR-78 and I-15, the PEP project would result in less than quantifiable cumulative freeway impacts. (*Ibid*.)

Staff therefore reviewed potential impacts of PEP commuter traffic at local intersections that could result from cumulative conditions. Staff's Traffic and Transportation Table 3, below, summarizes the data. (Ex. 50, p. 4.10-8.)

TRAFFIC AND TRANSPORTATION Table 3
Intersection Level of Service – Cumulative Conditions with Mitigation[1]

Intersection	*Analysis Type*	*A.M. LOS[2]*	*P.M. LOS[2]*
Nordahl Rd./Highway 78 WB ramps	Traffic Signal	C	D
Nordahl Rd./Highway 78 EB ramps	Traffic Signal	D	D
Nordahl Rd/Citracado Pkwy./Mission Rd.	Traffic Signal	F[3]	F[3]
Country Club Drive/Citracado Pkwy.	Traffic Signal[4]	C	B
Vineyard Ave./Citracado Pkwy.	Traffic Signal[4]	D	C

[1] Intersection levels of service for the cumulative condition are taken from the Escondido Research and Technology Center Traffic Impact Analysis, Linscott, Law & Greenspan, 2002.
[2] Level of service for intersections was determined using the 2000 Highway Capacity Manual Chapter 9 (Signalized Intersections) methodology.
[3] The Escondido Research and Technology Center Traffic Impact Analysis does not identify further mitigation.
[4] Mitigation includes the installation of a new traffic signal and appropriate modifications to the current intersection geometry.

Staff concluded that under the worst case scenario with complete build-out of the ERTC, the Nordahl/Citracal/Mission intersection would deteriorate to LOS F and the Nordahl/Highway 78 eastbound ramp would deteriorate to LOS D. However, under cumulative conditions, when the PEP is operating with 20 full-time employees, the project would only represent a very small percentage of increased traffic flow at those locations. (Ex. 50, p. 4.10-18.) A project's contribution to significant cumulative impacts is less than cumulatively considerable if the project is required to fund its fair share of a mitigation measure designed to alleviate the cumulative impacts. (Cal. Code Regs., tit. 14, § 15130(a).) Condition **TRANS-9** ensures that prior to construction of the PEP, the project owner will pay its fair share of the cumulative traffic mitigation measures established by the City's Conditions of Approval for the ERTC.

FINDINGS AND CONCLUSIONS

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

1. The addition of traffic associated with construction and operation of the PEP Project will not have a significant effect on area freeways or existing LOS at local roadways except for the intersections of Country Club Drive/Citracado Parkway and Vineyard Avenue/Citracado Parkway.

2. The project owner will implement a traffic mitigation plan approved by the City Engineer to mitigate PEP construction-related congestion at the intersections identified above in item 1.

3. The construction of the project's linear alignments will not result in a significant effect on traffic due to the temporary nature of the construction period and the changing locations for construction activities.

4. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws.

5. The project owner will ensure that vendors delivering hazardous materials to the PEP site follow the preferred truck route for transport of hazardous materials.

6. The project owner will pay its fair share of the cumulative traffic mitigation measures established by the City's Conditions of Approval for the ERTC to ensure that potential PEP-related cumulative impacts will be insignificant.

7. Implementation of the Conditions of Certification, below, will ensure that both construction and operation of the project comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portions of **Appendix A**.

The Commission, therefore, concludes that construction and operation of the project, as mitigated herein, will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system, and will comply with all applicable LORS.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with Caltrans and other relevant jurisdictions' limitations on vehicle sizes and weights. In addition, the project owner and/or its contractor(s) shall obtain all necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports (MCRs), the project owner shall submit copies of any 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 6 months after the start of commercial operation.

TRANS-2 The project owner and/or its contractor(s) shall comply with Caltrans and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain all necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In the MCR, the project owner shall submit copies of all 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 6 months after the start of commercial operation.

TRANS-3 The project owner shall ensure that all necessary 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 MCR copies of all permits and licenses acquired by the project owner or subcontractors concerning the transport of hazardous substances.

TRANS-4 During construction of the power plant and all related facilities, the project shall develop a Parking and Staging Plan for all phases of project construction to enforce a policy that all project-related parking occurs on-site or in designated off-site parking areas.

Verification: At least 60 days prior to start of site mobilization, the project owner shall submit the Parking and Staging Plan to the City of Escondido Public Works Department for review and comment, and to the CPM for review and approval.

TRANS-5 The project owner shall consult with the City Engineer of the Escondido Public Works Department, and prepare and submit to the CPM for approval, a Construction Traffic Control Plan and Implementation Program, which addresses the following issues:

- measures and incentives to maximize employee ridesharing;
- timing of heavy equipment and building materials deliveries;
- detour of construction traffic with a flagperson;
- signing, lighting, and traffic control device placement necessary to provide safe travel through work zones;
- establishment of construction work hours and arrival/departure times outside of peak traffic periods;
- methods for insuring access for emergency vehicles to the project site;
- provisions for temporary travel lane closure if necessary for traffic safety; and
- maintaining access to adjacent residential and commercial property during the construction of all linear facilities related to the project.

Verification: At least 30 days prior to site mobilization, the project owner shall submit the Construction Traffic Control Plan and Implementation Program to the CPM for approval.

TRANS-6 The project owner shall provide written verification of a traffic mitigation plan reviewed and approved by the City Engineer of the Escondido Public Works Department to implement mitigation measures at the Citracado Parkway/Vineyard Avenue intersection consistent with the requirements of the City of Escondido's Conditions of Approval for the ERTC Specific Plan. The traffic mitigation plan shall include left and right turning lanes on Vineyard Avenue plus adequate taper length to mitigate construction-related impacts at this intersection. With the concurrence of the Public Works Department, the project owner shall install a stop sign at Vineyard Avenue for northbound movements on the rough-graded access road provided along the alignment of the future Citracado Parkway extension. The stop sign will be removed when a traffic signal is operational at this intersection.

Verification: At least 30 days prior to site mobilization, the project owner shall submit to the CPM a traffic mitigation plan approved by the City Engineer of Escondido Public Works Department for the development of improvements at the intersection of Vineyard Avenue and Citracado Parkway, including temporary mitigation for northbound movements on the project's rough-graded access road along the alignment of the future Citracado Parkway extension at Vineyard Avenue. These improvements shall be installed prior to the initiation of on-site construction activities of the Palomar Energy Project.

TRANS-7 The project owner shall prepare a Construction Mitigation Plan in conjunction with the City of Escondido Public Works Department, to insure

that Nordahl Road, Citracado Parkway, Vineyard Avenue, Harmony Grove Road, Lincoln Avenue, and Metcalf Street will be repaired and reconstructed to original, or as near original, condition as possible. The Construction Mitigation Plan shall:

- document existing pavement conditions on Nordahl Road, Citracado Parkway, Vineyard Avenue, Harmony Grove Road, Lincoln Avenue, and Metcalf Street, and identify any segments that may be inadequate to accommodate oversize or large construction vehicles, and complete remediation measures as necessary;

- provide appropriate bonding or other assurances to insure that any damage to Nordahl Road, Citracado Parkway, Vineyard Avenue, Harmony Grove Road, Lincoln Avenue, and Melcalf Street due to construction activity will be remedied by the applicant;

- relocate utility poles if necessary, to insure that adequate clear zones are established along the property frontage; and

- reconstruct portions of Nordahl Road, Citracado Parkway, Vineyard Avenue, Harmony Grove Road, Lincoln Avenue, and Metcalf Street that are affected by the installation of underground utilities.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the City of Escondido for review and comment, and to the CPM for review and approval, a Construction Mitigation Plan for Nordahl Road, Citracado Parkway, Vineyard Avenue, Harmony Grove Road, Lincoln Avenue, and Melcalf Street.

TRANS-8 The project owner shall provide written verification of the timely implementation of the City of Escondido's requirements for contribution to the costs of installation of a traffic signal at the Country Club Drive/Citracado Parkway intersection to provide operating conditions during peak power plant construction periods that are at or below Level of Service (LOS) D. In addition, specific measures to mitigate construction-related impacts at this intersection shall be included in the traffic mitigation plan approved by the City Engineer of the Escondido Public Works Department as provided in Condition **TRANS-6**.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM written verification of implementation of the City of Escondido's requirements for contribution to the traffic signal and measures taken to implement the traffic mitigation plan described in Condition **TRANS-6**.

TRANS-9 Prior to the start of construction, the project owner shall reach an agreement with the City of Escondido regarding shared costs of the implementation of cumulative traffic mitigation measures.

Verification: At least 30 days prior to start of construction, the project owner shall provide evidence of payment of its fair share of cumulative traffic mitigation measures to the CPM in the MCR following payment.

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. 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 ERTC Specific Plan Area (SPA), which includes the PEP site as Planning Area 1, contains varying topography, ranging from moderately steep, hilly terrain to relatively flat terrain. A dominant natural feature is a primary ridgeline trending north-south through the middle of the SPA and along the west boundary of the project site. Dominant features include existing SDG&E lattice transmission towers[64] that extend north-south through the entire length of the SPA and immediately to the west of the project site, and a radio tower and control building located to the west of the power plant site within the SPA. The area does not contain exceptional scenic features; none of the roads in the vicinity have been adopted as scenic highways, nor have any portions of the SPA itself been designated for special protection of its aesthetic attributes. (Ex. 1, p. 5.10-1; Ex. 35, Torres, Visual, p. 3.)

Existing site elevations range from approximately 740 feet above mean sea level (amsl) to 826 feet amsl, with most of the site between 750 and 790 feet amsl. Prior to construction of the power plant, Planning Area 1 will be graded to approximately 750 feet amsl as an integral part of the grading of all eight Planning Areas of the ERTC. This pre-construction grading will reduce the visual

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[64] Nine existing 120-foot lattice structures will be replaced with eight 120-foot tall tubular poles, which are less visibly intrusive. (Ex. 1, § 5.10.1.4.)

impacts of the power plant by lowering the elevation of plant facilities and equipment, while preserving and enhancing the north-south ridgeline that separates the project site from the western majority of the ERTC industrial park and from the residential area located further west. (Ex. 35, Torres, Visual, pp. 3-4).

The PEP is the largest and tallest structure in the ERTC. Other land uses proposed for the ERTC consist of light industrial uses (processing, assembling, manufacturing, warehousing, research and development, and distribution, and accessory uses), service industries, and open space. The City of Escondido's Conditions of Approval for the ERTC Specific Plan include design and landscaping guidelines and policies for the industrial park as a whole and for the individual Planning Areas pertaining to the protection of visual quality and views in the area. (Exs. 21, 24, 33 and 39; Ex. 50, pp. 4.12-24, 4.12-26.) These considerations are incorporated into the Commission's analysis of the PEP site and included in the Conditions of Certification. (4/29/03 RT 101, et seq.)

The most visible features of the power plant includes the two 110-foot tall heat recovery steam generator (HRSG) stacks; the two 85-foot tall HRSGs; the two 75-foot tall combustion turbine generators; the 65-foot tall, 320-foot long cooling tower consisting of seven cells; and 45-foot tall, 55-foot diameter raw water storage tank. Black iron fencing with vertical one to two-inch square bars spaced six to twelve inches apart will be installed around the perimeter of the project site (Ex. 50, p. 4.12-6; Ex. 2A, Data Response 103).

The new project switchyard will be located immediately north of the power generation facilities and will connect to the existing SDG&E transmission line that runs along the western boundary of the site. Components of the new switchyard, including transformers, take-off structure, and other electrical equipment, will have an industrial appearance. (Ex. 50, p. 4.12-6.)

Staff's Visual Resources Table 1, replicated below, shows the dimensions of key project components.

Visual Resources Table 1
Dimensions of Key Project Components

Component	**Height** (feet)	**Length** (feet)	**Width** (feet)	**Diameter** (feet)
HRSG Units				
HRSG Casings	85	150	30	
HRSG Stacks	110			17
Combustion Turbines				
Combustion Turbine-Generators	75	135	30	
Cooling Tower (7 cells)				
Cooling Tower	65	320	50	
Tanks				
Raw Water Storage Tank	45			56
Demineralized Water Storage Tank	40			30
Buildings				
Operations Building	25	220	90	
Electric Transmission Facilities				
H-frame Take-off Structure	80 (approx.)			
230 kV Tubular Towers	120 (approx.)			

Source: Ex. 50, p. 4.12-7; Ex. 1, Table 5.10-3.

1. Methodology

The visual impact analysis for the power plant was based on assessment of potential viewshed impacts for a set of nine defined Key Observation Points (KOPs) at various locations in the area surrounding the project site:

- KOP 1 - within the ERTC SPA about 1,100 feet west of the plant site;
- KOP 2 - across the street to the east of 1189 Oak View Way, just west of the project site;
- KOP 3 - 1189 Oak View Way, just west of the project site, but at a higher elevation than KOP2;
- KOP 4 - Vacant lot along Harmony Grove Road southeast of the project site;
- KOP 5 - Mobile home park west of Vinewood Street southeast of the project site

- KOP 6 - 768 Hillsboro Way at Via Salerno, north of the project site;
- KOP 7 - 345 Vine Street, east of the project site;
- KOP 8 - 1134 Pasadero Drive, southeast of the project site; and
- KOP 9 - 919 Cycad Drive in the Coronado Hills, west of the project site.

The analysis was based on an accepted visual quality evaluation system that uses a scale of High, Moderately High, Moderate, Moderately Low, and Low to evaluate elements including contrast with natural and manmade features, visual dominance, and view blockage to reach an overall finding regarding visual impact severity. The assessment involved computer based visual simulations using facility renderings superimposed on photographs of existing conditions. (Ex. 1, pp. 5.10-5 et seq.; Ex. 35, Torres, Visual, p. 4.) Applicant relied on these simulations to determine whether project impacts would be noticeable to sensitive public views. (*Ibid*.)

The analysis indicated that the power plant would be visible from KOP 1 (a location within the ERTC industrial park) and in the views from KOPs 3 through 9. However, the project is not expected to produce significant visual impacts. This is primarily because Palomar Energy selected a site that affords visual screening by terrain, and is located in an area with an existing industrial character. The combined effect of the various visual elements associated with each KOP yield a visual impact severity that ranges from Low to Moderate (there are no Moderately High or High visual impacts from any KOPs). (Ex. 1, p. 5.10-21; Ex. 35, Torres, Visual, p. 4.)

Based on Applicant's initial analysis, Staff reviewed KOPs 3, 6, 7, 8, and 9 in greater detail. The results of Staff's analysis are shown in Staff's Appendix VR-1, which is replicated on the following page. (Ex. 50, Visual Resources, Appendix VR-1.) According to Staff, visual impacts would be adverse but not significant if all mitigation measures are implemented.

Insert #1 APPENDIX VR-1

2. Potential Impacts

Construction of the power plant and linear facilities will cause temporary adverse visual impacts due to the presence of heavy construction equipment, materials, storage and temporary laydown/staging areas Views of the laydown area from the north (KOP 6), east (KOPs 7 and 8), and more elevated vantage points (KOP 9) would be unobstructed. To minimize the adverse visual impact of these views, Condition of Certification **VIS-1** requires the screening of storage and laydown areas from nearby roads and residences and requires the restoration of the construction areas and pipeline rights-of-way after completion of project construction.[65] Due to the relatively short-term nature of project construction, the visual impacts during construction will not be significant.

During operation, visual impacts for view areas represented by the KOPs include the project's large geometric structures as well as vapor plumes and night lighting. Staff's Visual Resources Table 5, replicated below, summarizes the ERTC Specific Plan requirements and the coordination with the Conditions of Certification. (Ex. 50, p. 4.12-26 et seq.) Conditions **VIS-2**, **VIS-3**, and **VIS-4** require the project design to make maximum use of the visual screening afforded by site topography as shown in Visual Simulation Figure 14B, attached at the end of this section of the Decision. Further, the project shall include a landscape screening plan consistent with requirements specified by the ERTC Specific Plan if ERTC structures or buffer areas do not provide effective screening of the power plant at sensitive viewpoints.[66] Project components will be painted a flat, neutral color to harmonize with background elements. (Ex. 1, p. 5.10-13.)

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[65] While most construction activities will occur during daylight hours, some construction will take place at night. (Ex. 1, p. 2-53.) Condition **VIS-5** requires all lighting to be shielded, hooded, and directed downward to minimize potential impacts on nearby residential areas. (Ex. 50, p. 4.12-14.)

[66] Screening includes a buffer area or artificial ridgeline on the west boundary of the ERTC that will be 220 feet wide, starting at an elevation even with Allenwood Lane and rising to an elevation 50 feet higher than Allenwood Lane and then down to 10 feet. There is also an existing 80-foot high ridgeline separating the PEP site from the ERTC business park. (4/29/03 RT, p. 101 et seq.)

VISUAL RESOURCES Table 5
Palomar Energy Project's Consistency with
Local LORS Applicable to Visual Resources

LORS		Consistency Determination Before/After Mitigation/ Conditions	Basis for Consistency
Source	**Description of Principles, Objectives, and Policies**		
Escondido Research and Technology Center Specific Plan			
II. Business Park-Wide Policies and Standards: C. Design Policies	Goal: "…to create a visual and aesthetic coherence internally and externally to the project.	NO/YES	The complex industrial appearance of the project would not appear consistent with the prevailing development character established by the surrounding business parks, commercial uses, and residential areas. Effective implementation of all mitigation measures and Condition of Certification **VIS-4** (requiring landscape screening) would bring the project into compliance with this requirement.
II. Business Park-Wide Policies and Standards: C. Design Policies	Project Design Feature (a): The elements of design and their composition shall exhibit visual simplicity.	NO/YES	The complex industrial appearance of the project would not be composed of simple forms and lines and would not appear simple in terms of design or composition. It is staff's opinion that the only way to achieve consistency with this policy is to incorporate architectural screening into the project design to hide or otherwise disguise the industrial/structural complexity of the project as proposed. Effective implementation of all mitigation measures and staff's Condition of Certification **VIS-9** (requiring structural screening) would bring the proposed project into compliance with this requirement.

VISUAL RESOURCES Table 5
Palomar Energy Project's Consistency with
Local LORS Applicable to Visual Resources

LORS		**Consistency Determination Before/After Mitigation/ Conditions**	**Basis for Consistency**
Source	**Description of Principles, Objectives, and Policies**		
II. Business Park-Wide Policies and Standards: E. General Architectural Standards	Project Design Features (a): Architectural features exhibited by projects within Escondido Research and Technology Center will be simplistic but refined.	NO/YES	The complex industrial appearance of the project would not be composed of simple forms and lines and would not appear simple in terms of design or composition. It is staff's opinion that the only way to achieve consistency with this standard is to incorporate architectural screening into the project design to hide or otherwise disguise the industrial/structural complexity of the project as proposed. Effective implementation of all mitigation measures and Condition of Certification **VIS-9** (requiring architectural screening) would bring the project into compliance with this requirement.
II. Business Park-Wide Policies and Standards: E. General Architectural Standards	6. Mechanical Equipment (a): All exterior and electrical equipment, including HVAC, vents, stacks, storage tanks, communications antennas and satellite dishes shall typically be screened using building parapets. Otherwise the use of mechanical screens may be required.	NO/YES	The project does not propose the use of any type of structural screens. It is staff's opinion that the only way to achieve consistency with this standard is to incorporate architectural screening into the project design to hide or otherwise disguise the industrial/structural complexity of the project as proposed. Effective implementation of all mitigation measures and Condition of Certification **VIS-9** (requiring structural screening) would bring the project into compliance with this requirement.

VISUAL RESOURCES Table 5
Palomar Energy Project's Consistency with
Local LORS Applicable to Visual Resources

LORS		Consistency Determination Before/After Mitigation/ Conditions	Basis for Consistency
Source	**Description of Principles, Objectives, and Policies**		
II. Business Park-Wide Policies and Standards: E. General Architectural Standards	8. Materials (b): The primary wall surface material is intended to provide a uniform aesthetically pleasing exterior finish. Stone veneer, painted concrete, glass curtain wall and combinations of these elements shall make up the primary building materials.	NO/YES	The primary structural surface material to be used for the project would be metal. The resulting surface texture would not appear consistent with the required surface materials. It is staff's opinion that the only way to achieve consistency with this standard is to either use the surfacing materials referenced in the standard or to treat project surfaces with materials or finishes that simulate the referenced materials. Effective implementation of all mitigation measures and Condition of Certification **VIS-3** (requiring surface treatment) would bring the proposed project into compliance with this requirement.
II. Business Park-Wide Policies and Standards: F. General Landscape Standards	Objective: Landscapes will screen or enhance views as desirable, accent or buffer new architecture, orient vehicles and pedestrians, and provide public recreational opportunities. The intent of the landscape architecture is to integrate the project into the existing community fabric, and to enhance Escondido's sense of place as a business environment.	NO/YES	The proposed landscaping would not adequately screen the project from the residential views represented by KOPs 3, 6, 7, 8, and 9. The project would not appear well integrated into the existing landscape. Effective implementation of Condition of Certification **VIS-4** would bring the project into compliance with this requirement.
II. Business Park-Wide Policies and Standards: J. Signage	Objective: Signs shall be minimized and of non-glare materials and unobtrusive colors.	PARTIALLY / YES	Signs at the entrances to the plant site will be of materials that minimize glare and are unobtrusive. Effective implementation of Condition of Certification **VIS-7** would bring the project into compliance with this requirement.

VISUAL RESOURCES Table 5
Palomar Energy Project's Consistency with
Local LORS Applicable to Visual Resources

LORS		**Consistency Determination Before/After Mitigation/ Conditions**	**Basis for Consistency**
Source	**Description of Principles, Objectives, and Policies**		
II. Business Park-Wide Policies and Standards: K. Lighting Standards	3. On-Site Lighting (b): Any outdoor lighting facility or fixture shall be shielded, be equipped with automatic timing devices and be limited to the amount of light necessary to illuminate the intended object.	PARTIALLY / YES	lighting at the plant would be limited to areas required for safety and security, and would be directional to minimize spillover onto adjacent properties. Effective implementation of Conditions of Certification **VIS-5** and **VIS-6** would bring the project into compliance with this requirement.
III. Planning Area Development Standards	6. Building Height: In the event Planning Area 1 is developed pursuant to Alternative B, the height limitation specified for Alternative A [60-foot building height] shall be applied to the operations building only, and the maximum height of exhaust stacks shall be 120 feet above the finished floor elevation.	YES/YES	The Operations Building would be 25 feet in height and the HRSG stacks would be 110 feet in height.
III. Planning Area Development Standards	12. Walls/Fencing: For Alternative B, the perimeter of Planning Area 1 shall be secured with aesthetic steel fencing or screen walls, selected as appropriate for specific visual settings along the perimeter.	YES/YES	The project would include the use of aesthetic steel fencing along the project perimeter.

The project requires nighttime lighting for operational safety and security. (Ex. 50, p. 4.12-20.) Since the undeveloped site currently has no lighting, the project's lighting will change the character of the existing nighttime landscape, resulting in significant visual impacts particularly when viewed from KOP 3. (*Id*., at p. 4.12-21.) Exterior lights will be designed to minimize the visibility of nighttime lighting to off-site viewers. Condition **VIS-6** requires the project owner to design all permanent lighting to prevent reflected glare and illumination of the project and vicinity. A lighting complaint resolution process shall also be implemented to address public concerns.

Staff conducted an independent modeling analysis to predict the frequency of project vapor plumes associated with the non-abated HRSGs and the plume-abated cooling tower. (Ex. 50, p. 4.12-21.) Staff employs a significance frequency threshold of ten percent or greater for plume occurrence during seasonal[67] daylight no rain/no fog (SDNRNF) hours to determine whether a more detailed analysis is required. Staff disregards plumes that may occur at night or during rain or fog conditions because plume visibility is typically low during those conditions. (4/29/03 RT, p. 111 et seq.)

Staff's analysis determined that visible plume formation would occur mainly during the cold weather months, with the majority of plume formation occurring at night or early morning. Consequently, the predicted HRSG and cooling tower plumes for the project are likely to occur less than ten percent of SDNRNF hours. Staff therefore concluded that project plumes would not result in significant visual impacts and no further visual analysis of visible plumes was conducted. (Ex. 50, p. 4.12-21.) Condition of Certification **VIS-8** ensures that the project owner will

[67] "Seasonal" is defined as the six consecutive months per year when the potential for plume formation is greatest. The months considered for a particular project are determined by the meteorological data used for that project. Usually the months are November through April, as is the case for this project. (Ex. 50, p. 4.12-20, fn. 2.)

implement plume abatement measures to reduce visible plumes to insignificant levels.

3. Visual Impacts of Dry Cooling

Intervenor Bill Powers raised a number of issues concerning the visual impacts of an optimized dry cooling system compared with size of the PEP's plume-abated wet cooling system. (Ex. 108, pp. 9-10; Ex. 109, p. 3; 4/28/03 RT, p 115 et seq.) According to Applicant, a dry cooling system would be considerably taller and more massive than the plume-abated wet cooling system and not responsive to community concerns regarding visual impacts.[68] (4/28/03 RT, p. 156 et seq.) Staff agreed that dry cooling would require a larger footprint than the plume-abated wet cooling system, making it difficult to fit on the site and increasing visual impacts. (Ex. 50, p. 4.9-A30 et seq.)

Mr. Powers contended that a "height-optimized" dry cooling system would be only slightly larger than the wet cooling system and that a dry cooling system would have no visible plume at any time. (Ex. 112; 4/28/03 RT, p. 124 et seq.) Intervenor disputed the dimensions estimated by Staff and Applicant and submitted a diagram based on his proposal for an optimized dry cooling system that would fit on the PEP site. (Ex. 112; 4/28/03 RT, p. 124 et seq.) Although Intervenor Powers testified at great length about his proposal (4/28/03 RT, p. 115 et seq.), he did not establish that dry cooling should be required even if his design could reduce visual impacts of the dry cooling option to a view equivalent to that of the plume-abated wet cooling system.[69] Since we find it acceptable for

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[68] Applicant noted that residents near the site expressed their desire that the power plant be as minimally visually intrusive as possible. (428/03 RT, pp. 158, 161.)

[69] We recognize that Intervenor's analysis regarding the size and height of an optimized dry cooling proposal was offered in rebuttal to Applicant's position that significant adverse visual impacts would result if dry cooling were employed. Nevertheless, the potential visual impact of a dry cooling system was only one of the many factors considered in the Applicant's choice to employ the plume-abated wet cooling system. (4/28/03 RT, p. 152 et seq.; *See also* Soil and Water section of this Decision; Ex. 35, Rowley, Water, p. 3 et seq.)

the PEP to use recycled water for cooling, the exercise to determine the optimized height and size of the dry cooling option is moot. (*See*, Soil and Water Resources section of this Decision.)

4. Cumulative Impacts

Cumulative impacts to visual resources can occur where project facilities or activities (such as construction) occupy the same field of view as other structures or impacted landscapes. The significance of the cumulative impact depends on the degree to which (1) the viewshed is altered, (2) visual access to scenic resources is impaired, (3) visual quality is diminished, or (4) the project's visual contrast is increased. (Ex. 50, p. 4.12-23.)

Staff's Table 4 lists three projects that have been identified for cumulative impact analysis.

Visual Resources Table 4
List of Cumulative Projects

Project	**Description**	**Visible in Proposed Project Field of View**	**Cumulative Impact and Significance**
Escondido Research and Technology Center	Light industrial business park.	YES All KOPs	Adverse but Not Significant (with mitigation)
CalPeak	A 49 MW peaking power plant located on Vineyard Avenue, adjacent to the north boundary of the proposed project site.	YES KOPs 6, 7, and 9 ---------- NO KOPs 3 and 8	Adverse but Not Significant
RAMCO	A 44 MW peaking power plant located on Don Lee Place, approximately 0.5 mile northwest of the proposed project site.	NO All KOPs	No Impact

Source: Ex. 50, p. 4.12-23.

The overall ERTC SPA, including the PEP site, consists of 186 acres. The PEP, as the largest structure, will contribute substantially to the cumulative visual impact of the ERTC, however, if ERTC is built as proposed in the Specific Plan, the new buildings will screen the PEP from views in whole or part from most KOPs, and in particular, part of ERTC would effectively screen the PEP from KOP 3, where it would otherwise result in a significant unmitigated impact. (Ex. 50, p. 4.12-24.) With implementation of Condition **VIS-4**, the cumulative impact of the PEP in conjunction with the ERTC should not be significant.

The CalPeak peaking power plant is located adjacent to the north boundary of the project site. From KOPs 6, 7, and 9, the CalPeak project is visible in the same field of view as the PEP. However, since CalPeak is relatively smaller in scale, it appears to be an integrated part of the overall urban landscape that dominates the foreground to middleground view north of the project site. At all three KOPs where both the PEP and the CalPeak projects would be visible in the same field of view, the resulting cumulative visual impact is considered adverse but not significant. (Ex. 50, p. 4.12-24.)

The RAMCO peaking project is located approximately 0.5 mile northwest of the project site but it is not visible in the same field of view as the PEP from any of the five KOPs reviewed by Staff. Therefore, there would be no cumulative visual impact with respect to the RAMCO project. (Ex. 50, p. 4.12-24.)

No existing vapor plume sources have been identified in the immediate project vicinity and no cumulative visual impacts are anticipated to result from the PEP's vapor plumes. (Ex. 50, p. 4.12-25.)

FINDINGS AND CONCLUSIONS

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

1. The Palomar Energy Project site is in an area with no exceptional visual features or scenic vistas, and the site and surrounding area are zoned and planned for industrial use.

2. The project will use existing terrain, augmented by landscaping, berming, and the positioning of plant facilities to provide substantial visual screening from surrounding off-site areas.

3. Construction of the project's underground water and natural gas pipelines will cause temporary visual impacts but no permanent visual impacts will result.

4. Project components that could affect visual resources include the heat recovery steam generators (HRSG), the 110-foot tall HRSG exhaust stacks, the CTGs, the STG, cooling tower, storage tanks, and new switchyard.

5. With mitigation, the project components will not result in significant visual impacts at any of the key observation points (KOPs).

6. The project owner will treat project surfaces with colors that minimize visual intrusion and contrast.

7. The project owner will implement appropriate mitigation measures to reduce or eliminate visual impacts due to backscatter from nighttime lighting and glare from sunlight reflection on the metallic surfaces of project components.

8. The predicted occurrence of vapor plumes from the HRSG stacks and the cooling tower fall below the significance threshold of 10% seasonal daytime no rain/no fog hours and will not result in significant impacts to visual resources.

9. The PEP will comply with all applicable LORS regarding project design, architecture, landscaping, and other zoning requirements set forth in the ERTC Specific Plan.

10. Even if the height-optimized dry cooling option proposed by the Intervenor could be designed to fit on the site without creating additional visual impacts, it would not establish good cause to require dry cooling in this case.

11. There is no evidence of potential cumulative visual impacts in relation to the two existing peaker power plants in the vicinity or in conjunction with

the overall ERTC or with the addition of occasional project-related plumes in the viewshed.

12. Implementation of the Conditions of Certification, below, will insure that PEP 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 evidentiary record ensures that the PEP will not result in significant adverse impacts to visual resources.

CONDITIONS OF CERTIFICATION

Construction Screening and Surface Restoration

VIS-1 To minimize the visual impacts of project construction, the project owner shall screen the project site, including staging areas and material and storage areas, from public views from nearby residences and public roadways.

Upon completion of project construction the project owner shall remove all evidence of construction activities, including ground disturbance due to staging and storage areas and pipeline construction, and shall restore all disturbed areas.

The project owner shall submit to the CPM for review and approval and to the City of Escondido for review and comment a specific screening and surface restoration plan whose proper implementation will satisfy these requirements.

The project owner shall not implement the screening and surface restoration plan until receipt of written approval from the CPM.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a Screening and Surface Restoration Plan (Plan) to the CPM for review and approval and to the City of Escondido for review and comment.

The project owner shall install the screening prior to the start of site mobilization for the power plant. The project owner shall notify the CPM within seven days after installing the screening that it is ready for inspection.

The project owner shall complete surface restoration before the start of commercial operation. The project owner shall notify the CPM within seven days after completing the surface restoration that it is ready for inspection.

Site Layout

VIS-2 The proposed project structures shall be arranged on the site in such a manner as to make maximum use of the visual screening afforded by site topography. Site layout and topographic screening is to conform to the attached visual simulation [VISUAL RESOURCES Figure 14B attached at the end of these Conditions].

The project owner shall submit to the CPM for review and approval and to the City of Escondido for review and comment a site development plan whose proper implementation will satisfy these requirements.

The project owner shall not implement the site development plan or begin construction until receipt of written approval from the CPM.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit the site development plan to the CPM for review and approval and to the City of Escondido for review and comment.

At least 7 days prior to implementation of the site development plan the project owner shall notify the CPM that the site is ready for inspection.

Surface Treatment of Project Structures and Buildings

VIS-3 No later than 30 days after the start of commercial operation, the project owner shall treat the surfaces of all project structures and buildings visible to the public such that their colors minimize visual intrusion and contrast by blending with the landscape; their surfaces do not create glare; and they are consistent with local laws, ordinances, regulations, and standards. The project owner shall submit for CPM review and approval, and to the City of Escondido for review and comment, a specific treatment plan whose proper implementation will satisfy these requirements. The treatment plan shall include:

a) Specification, and 11” x 17” color simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture;

b) A list of each major project structure, building, tank, transmission line tower and/or pole, and fencing specifying the color(s) and finish proposed for each (colors must be identified by name and by vendor brand or a universal designation);

c) Two sets of brochures and/or color chips for each proposed color;

d) Samples approximately 6” x 9” of each proposed treatment and color on each surface material to which they would be applied that would be visible to the public;

e) A detailed schedule for completion of the treatment; and

f) A procedure to ensure proper treatment maintenance for the life of the project.

Verification: The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated on site, until the project owner receives notification of approval of the treatment plan by the CPM.

The project owner shall submit its proposed treatment plan at least 90 days prior to ordering the first structures that are color treated during manufacture. Within 30 days following the start of commercial operation, the project owner shall notify the CPM that all buildings and structures are ready for inspection.

The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

Landscape Screening

VIS-4 If ERTC construction activities that will provide effective screening of the power plant from nearby residences west of the project site have not begun 180 days prior to initial firing, the project owner shall develop and implement a landscape screening plan that provides effective screening of project structures. The landscape screening plan shall include off-site landscaping as necessary to achieve effective screening. The CPM's determination as to whether landscape screening is necessary shall be based on ERTC building construction or landscaping installation completed, in progress, and/or in final design and scheduled for construction/installation. If the CPM determines that landscape screening is needed, the landscape screening plan shall include vegetation consisting of informal groupings of fast-growing species, predominantly or exclusively evergreen trees. The vegetation must be strategically placed and of sufficient density and height to effectively screen the project within five years after first firing. The project owner shall consider the use of berms as a means to help fulfill this requirement.

The project owner shall submit the landscape screening plan to the CPM for review and approval and to the City of Escondido for review and comment. The plan shall include but not necessarily be limited to:

a) An 11"x17" color simulation of the proposed landscaping at 5 years as viewed from KOP 3;

b) A plan view to scale depicting the project and the location of landscape screening;

c) A detailed list of plants to be used; their size and age at planting; the expected time to maturity, and the expected height at five years and at maturity; and

d) A table showing when the screening objectives are calculated to be achieved for each of the major project structures, and the height and

elevation of the features of the existing setting and the project that are factors in those calculations.

Verification: At least 180 days prior to initial firing, the project owner shall provide to the CPM documentation of ERTC construction that would provide screening of the power plant from nearby residences to the west of the project. Within 30 days of submittal of the documentation, the CPM will notify the project owner regarding whether landscape screening is needed.

If the CPM notifies the project manager that landscape screening is needed, at least 120 days prior to initial firing the project owner shall submit the landscape screening plan to the CPM for review and approval and to the City of Escondido for review and comment. The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

The project owner shall complete installation of the landscape screening prior to the start of commercial operation. The project owner shall notify the CPM within seven days after completing installation of the landscape screening, that the landscape screening is ready for inspection.

Construction Lighting

VIS-5 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a) All lighting shall be of minimum necessary brightness consistent with worker safety.

b) All fixed position lighting shall be shielded, hooded, and directed downward to minimize backscatter to the night sky and direct light trespass (direct lighting extending outside the boundaries of the construction area).

c) Wherever feasible and safe, lighting shall be kept off when not in use and motion detectors shall be employed.

d) A lighting complaint resolution form (following the general format of that in Appendix VR-2 attached hereto) shall be used by plant construction management, to record all lighting complaints received and to document the resolution of that complaint.

Verification: Within 7 days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection.

If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 15 days of receiving that notification the project owner shall implement the necessary modifications and notify the CPM that the modifications have been completed.

The project owner shall report any lighting complaints and documentation of resolution in the Monthly Compliance Report, accompanied by any lighting complaint resolution forms for that month.

Permanent Lighting

VIS-6 The project owner shall design and install all permanent lighting such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall submit a lighting mitigation plan that includes but is not necessarily limited to the following:

a) Lighting shall be designed so 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 the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;

b) All lighting shall be of minimum necessary brightness consistent with worker safety; and

c) High illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have switches or motion detectors to light the area only when occupied;

d) A lighting complaint resolution form (following the general format of that in Appendix VR-2 attached hereto) shall 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.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to arrange a meeting to discuss the documentation required in the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval a plan that describes the measures to be used and demonstrates that the requirements of the condition will be satisfied. The project owner shall not order any exterior lighting until it receives CPM approval of the lighting mitigation plan.

Prior to initial firing, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection.

The project owner shall report any complaints about permanent lighting and provide documentation of resolution in the Annual Compliance Report.

Signage

VIS-7 The project owner shall develop and implement a signage plan that is consistent with the requirements of the Escondido Research and Technology Center Specific Plan, Part II, Section J (Signage). In addition, the project owner shall install minimal signage, which shall be constructed of low-glare materials and unobtrusive colors. The design of any signs required by safety regulations shall conform to the criteria established by those regulations.

The project owner shall submit a signage plan for the project to the CPM for review and approval and to the City of Escondido for review and comment. The project owner shall not implement the plan until the project owner receives approval of the submittal from the CPM.

Verification: At least 90 days prior to installing signage, the project owner shall submit the plan to the CPM for review and approval and to the City of Escondido for review and comment.

The project owner shall notify the CPM within seven days after completing installation of signage that all signs are ready for inspection.

Cooling Tower Plume Abatement

VIS-8 The project owner shall reduce the project's cooling tower visible vapor plumes by using a wet/dry plume abated cooling tower with a plume abatement design point of 51.5°F and 90.5 percent relative humidity. An automated system to notify the operator shall be used to ensure that plumes are abated to the maximum extent possible for the stipulated design point.

Verification: At least 60 days prior to ordering the cooling tower, the project owner shall provide to the CPM for review and approval the specifications for the cooling tower and the automated notification system and related systems and sensors that will be used to ensure maximum cooling tower plume abatement.

Architectural Screening

VIS-9 To achieve consistency with the design standards and policies of the Escondido Research and Technology Center Specific Plan, the project owner shall incorporate the following measures into the design of the project:

- The east elevation view of the operations building shall incorporate architectural design measures consistent with the Comprehensive Policies and Design Guidelines contained in Chapter II of the ERTC Specific Plan.
- Measures shall be included that screen the south end of the operations building from views from the southeast.

- Exposed mechanical equipment on portions of the HRSGs not screened by terrain, landscaping, or site perimeter walls shall be minimized, and integrated with the HRSG structures to the extent feasible. Measures such as placement and design of structural members such as columns, stairwells, beams, and casing stiffeners shall be employed to integrate the overall appearance of the HRSGs in terms of color, texture, and form.
- A minimum 10-foot landscape setback shall be provided along the project site's eastern boundary.

Prior to the start of construction, the project owner shall submit an architectural plan to the CPM for review and approval and to the City of Escondido for review and comment. The plan shall include:

a) Detailed plans, elevation views, and specifications for the proposed architectural design measures for the operations building and for integration of exposed mechanical equipment on the HRSGs;

b) 11" x 17" color simulations at life-size scale of the proposed project with the architectural design measures;

c) A detailed schedule for installation of the architectural design measures; and

d) A procedure to ensure proper maintenance of the architectural design measures for the life of the project.

Verification: Not less than 120 days prior to start of construction, the project owner shall submit the architectural plan to the CPM for review and approval and to the City of Escondido for review and comment.

APPENDIX VR–2 CONDITIONS OF CERTIFICATION VIS-5 and VIS-6

LIGHTING COMPLAINT RESOLUTION FORM

Palomar Energy Project, Docket No. 01-AFC-24(C) Escondido, California
Complainant's name and address: Phone number:
Date complaint received: Time complaint received:
Nature of lighting complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted:
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.)

INSERT APPENDIX 14B (COLOR PHOTOSIMULATION)

D. NOISE AND VIBRATION

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 some cases, vibration may be produced as a result of construction activities such as blasting, which has the potential to cause structural damage and annoyance. This review evaluates whether noise and vibration produced during project construction and operation will be sufficiently mitigated to comply with applicable law.

Summary of the Evidence

Laws that regulate noise disturbances in the project vicinity are included in the City of Escondido General Plan Community Protection and Safety Element and the Escondido Municipal Code (Noise Ordinance).[70] The Noise Ordinance limits the noise caused by an activity that is audible at off-site locations based on the land use of the off-site receiving properties. From 7 a.m. to 10 p.m., noise levels received at single-family residences may not exceed 50 dBA, while at light industrial and industrial park land uses, the limit is 70 dBA. From 10 p.m. to 7 a.m., the limits are reduced by 5 dBA.[71] (Ex. 1, p. 5.9-5; Ex. 50, p. 4.6-5; 4/8/03 RT, pp. 101-103 and 108-112). The City's maximum permissible noise levels are shown in Noise Table 2 replicated below from Staff's testimony.

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[70] Escondido General Plan, Community Protection and Safety Element, Policy E1.2; Escondido Municipal Code, Article XI, Sections 17-226 through 17-260.

[71] Staff's Noise Tables Appendices 1, 2, 3, and 4, replicated at the end of this section, explain the definitions of these and other noise measurement terms

NOISE Table 2 – City of Escondido Noise Standards

Zone	Time	Hourly Leq Limit dBA
Residential	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-Residential	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial	Anytime	70
General Industrial	Anytime	75

(Source: Ex. 50, p. 4.6-5.)

The Noise Ordinance provides that each of the above standards will be reduced by 10 dBA when applied to a steady audible sound such as a whine, screech, or hum, or to sound that contains a repetitive impulsive noise. (Ex. 1, p. 5.9-5.)

CEQA Guidelines set forth characteristics of noise impacts that may indicate potentially significant effects from project-related noise, such as "a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project." (Cal. Code Regs., tit. 14, § 15000 et seq., Appendix G, Section XI.) In accordance with this standard, Staff uses the significance threshold of 5 dBA when project-related noise emissions exceed existing ambient noise levels at the nearest sensitive receptor. (Ex. 50, p. 4.6-3.)

1. The Setting

The ERTC Specific Plan Area (SPA) is at the perimeter of the urbanized core of the City of Escondido, where land uses transition from industrial to rural/semi-rural. Existing industrial land uses are adjacent to the east of the project site. Future ERTC industrial park uses adjoin the site to the west and south. Existing industrial land uses are north of the project site, including an existing 49 MW power plant adjacent at the north boundary of the site. (Ex. 1, § 5.9.1; Ex. 35, Giroux, Noise, p. 3.)

The nearest sensitive noise receptors are single-family residences to the west and southwest, and a mobile home park to the southeast. The distance between the project's primary noise generating equipment and the nearest residence to the west is approximately 1,800 feet, but these residences are well shielded by irregular terrain so there would be no direct noise exposure from the power plant. Several residences located on elevated lots approximately 2,300 feet southwest of the project site are not as well shielded by terrain and would have a direct line of noise exposure from the upper portion of the power plant's exhaust stacks. The mobile home park, about 2,800 feet southeast of the project site, is partially shielded by intervening industrial buildings (Ex. 1, § 5.9.1; Ex. 35, Giroux, Noise, p. 3).

2. Potential Impacts

Applicant conducted ambient noise measurements in the residential areas mentioned above and at an industrial facility location adjacent to the east boundary of the project site as follows:

> **Location 1** (L1): Single-family residences along Live Oak Road, Chardonney Way and Allenwood Lane west of the project site, about 1,800 feet distant.
>
> **Location 2** (L2): Single-family residences on elevated lots along Oak View Way southwest of the project site, about 2,300 feet distant.
>
> **Location 3** (L3): Mobile homes located along Via Chardonnay southeast of the project site, about 2,800 feet distant.
>
> **Location 4** (L4): Industrial land uses adjacent to the east project site boundary.

Staff's Noise Table 3, replicated below, summarizes the ambient noise measurement results. (Ex. 50, p. 4.6-7; Ex. 1, § 5.9.1.1)

NOISE Table 3: Summary of Measured Noise Levels

Measurement Sites	Measured Noise Levels, dBA		
	Average During Quietest Nighttime Hours		Community Noise Equivalent Level (CNEL)
	L_{eq}	L_{90}	
L1 – Live Oak Area	43	34	53*
L2 – Oak View Way	45	36	57*
L3 – Mobile Homes	51	40	58*
L4 – Industrial Area	53	44	61*
*Staff calculation; *See* Noise Appendix A in this section for definition of CNEL.			

Two other power plants RAMCO and CalPeak peaking plants are located near the project site. Although these facilities were not in operation at the time of the noise survey, Applicant estimated their noise exposure potential based on noise level data contained in the CalPeak record at the Energy Commission. The Applicant's worst-case noise level projection for the combined operation of the two peaking power plants is a cumulative noise level of 23 dBA at the nearest sensitive receptor. This would likely be imperceptible at that receptor, as it is at least 10 dB lower than the average background noise level at night. (Ex. 50, p. 4.6-7.)

The noise environment in the immediate vicinity of the project site is dominated by noise from local and distant traffic, and from industrial activities (Ex. 1, p. 5.9-4; Ex. 50, p.4.6-7). At all locations measured, ambient noise levels were within the allowable noise levels for that land use as specified in the Escondido Noise Ordinance (Ex. 35, Giroux, Noise, p. 3).

There are single-family residences along the portion of the water line route in the right-of-way of Harmony Grove Road, and along a portion of the gas pipeline route, which is entirely within the rights-of-way of Lincoln Avenue and Metcalf Street. These residences would be exposed to pipeline construction noise, but there would be no noise associated with the operation of these buried pipelines (Ex. 35, Hans Giroux, Noise, p. 4).

3. Mitigation Measures

a. Construction

Construction of the power plant will cause temporary noise impacts. Grading of the ERTC site, as well as blasting, would occur before the beginning of PEP construction. Construction of an industrial facility, such as a power plant, is typically noisier than permissible under usual noise ordinances. In order to allow the construction of new facilities, the City of Escondido regulates the permissible hours of construction and applies specific noise limits during those hours.[72]

Applicant analyzed potential construction noise impacts, listing predicted noise levels due to specific types of equipment and of generalized construction activities (Ex. 1 § 2.4.3.1). The construction noise analysis results are summarized for the most-affected receptor locations during the busiest periods of construction in Staff's Noise Table 4, replicated below.

NOISE Table 4 - Construction Noise Level Predictions

Location	Distance from noise sources, in feet	Predicted Sound Level, dBA
Site Boundary near L4	245	74
Residences near L1	1,800	57
Residences near L2	2,300	55
Mobile Home Park L3	2,800	53

The predicted construction noise level at the project boundary line complies with the City's construction noise standard of 75 dBA. Predicted noise levels at the sensitive receptor locations fall within the range of ambient daytime noise conditions but would exceed ambient levels during normally quiet nighttime

[72] Section 17-238 of the City of Escondido Municipal Code regulates noise from grading. Construction noise due to grading, compacting, drilling, rock crushing, bulldozing, clearing, digging, filling and blasting is exempt from the above noise standards between the hours of 7 a.m. to 6 p.m. on weekdays, and 10 a.m. to 5 p.m. on Saturdays. The equipment used for these activities may not be operated so as to exceed a one-hour average sound level limit of 75 dBA at any time when measured at or within the property lines of a residential use. (Ex. 50, p. 4.6-5.)

hours. Condition of Certification **NOISE-8** restricts construction activities to daytime hours, consistent with the City's noise ordinance, and therefore ensures that noise effects due to construction will comply with applicable LORS.

The City of Escondido's Zoning Regulations prohibit discernible vibrations that cause a public nuisance at the property line of the parcel in which the vibration-producing activity is located.[73] (Ex. 50, p. 4.6-5.) Project construction will require blasting, a vibration-producing process, to create the building pads for the power plant components.[74] Blasting is expected to occur once a day over a 2-to-3 month period. (Ex. 1, p. 5.9-15.)

The Escondido Municipal Code requires blasting permits, pre-blasting inspections and documentation of existing conditions, notice to surrounding properties, supervision by the City Fire Department and Field Engineering Inspectors, and restricts blasting to the hours of 9 a.m. to 4 p.m., Monday through Friday. Blasting must also be monitored by a seismograph located in the nearest structure and blasting reports must be submitted to the Fire department at the end of each week. Condition of Certification **NOISE-9** incorporates the City's requirements and if vibration measurements exceed certain limits, the project owner must cease blasting until a mitigation plan is approved and implemented. Condition **NOISE-8** restricts noise levels produced by blasting and the use of heavy construction equipment.

The loudest construction noise will be created by steam blows, which are necessary to flush piping and tubing of accumulated debris prior to start-up. A

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[73] Section 33-570(1) of the City's Zoning Regulations.

[74] According to Staff, blasting is typically performed using sequential detonation of multiple, relatively small, charges of explosives involving micro-second delays between the detonations so that the shock wave moves gradually across the surface. As a result, the levels of noise and vibration are relatively low. Through proper design of the blasting sequence, the resulting noise and vibration can be kept within acceptable levels consistent with standard industry practices. (Ex. 50, p. 4.6-10.)

series of short steam blows, lasting a few minutes, will be performed several times daily over a period of two to three weeks. (Ex. 50, p. 4.6-11.) Steam blows can produce noise as loud as 105 dBA at the nearest sensitive receptor (L1). (*Ibid.*) The project owner will install appropriate silencers or use a new quieter low-pressure steam blow process (QuietBlow® or Silentsteam™) to reduce noise levels to about 75 dBA at L1. Steam blow noise levels at the adjacent industrial land uses would be in the range of 80 dBA, as buildings could be as close as 1,000 feet (L4). (*Ibid.*) Condition **NOISE-4** restricts traditional high-pressure steam blows to daytime hours (7 a.m. to 6 p.m., Monday through Friday) and allows low-pressure continuous steam blows, which do not exceed ambient nighttime noise levels at any sensitive receptor. Condition **NOISE-5** requires notification of businesses and residences within a one-mile radius of the project site prior to initiating the steam blow process.

Conditions of Certification **NOISE-1** and **NOISE-2** require the project owner to implement a community noise notification and complaint program to respond to project-related noise concerns. Condition **NOISE-5** requires the project owner to provide notification to the local community prior to the first steam blow activity.

To protect construction workers from injury due to excessive noise during construction-related activities, Condition **NOISE-3** requires the project owner to implement a noise control program for construction workers in accordance with Cal/OSHA standards.[75] (Ex. 1, § 5.9.2.1; Ex. 50, pp. 4.6-11 and 4.6-12.)

b. Operation

During normal baseload operation, PEP will emit a steady, continuous noise source day and night. According to Applicant, noise attenuation measures

[75] 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.)

included in plant design, as well as the factors of distance, atmospheric absorption, intervening terrain (including the ridgeline west of the site, as well as the large berm planned along the western boundary of the ERTC), and intervening structures contribute to reducing noise impacts to insignificant levels. (Ex. 35, Giroux, Noise, p. 4.) Staff's Noise Table 5, replicated below, provides a summary of the predicted operational noise levels at sensitive receptor locations.

- **NOISE Table 5 – Summary of Predicted Operational Noise Levels**

Receptor Sites	Nighttime L_{90}, dBA			
	Ambient	Project	Cumulative	Change
L1 – Live Oak Area	34	30	36	+2
L2 – Oak View Way	36	37	39	+3
L3 – Mobile Homes	40	41	44	+4
L4 – Industrial Area	44	64	64	+20

Source: Ex. 50, p. 4.6-13.

To ensure that nighttime background noise levels (L_{90}) at the most-affected residential receptors do not exceed the City's noise standards or violate CEQA requirements, Staff proposed that noise levels be limited to increases of no more than 5 dBA. (Ex. 50, p. 4.6-13.) Staff's recommendations are included in Condition of Certification **NOISE-6**, which restricts the average noise level produced by plant operation to 37 dBA at any residence southwest of the project site, 41 dBA at any residence west of the project site, and 43 dBA at any sensitive receptor east of the project site. Implementation of Condition of Certification **NOISE-6** would result in the noise levels shown in Staff's Noise Table 6, replicated below. These limitations ensure that project operation does not cause significant noise impacts to sensitive residential receptors.[76]

[76] While Staff agreed with Applicant's assessment that operation of the PEP would not result in significant noise impacts to sensitive residential receptors, Staff was concerned that predicted noise levels would cause a substantial increase in background noise at the nearest industrial land uses (L4). (Ex. 50, p. 4.6-13.) However, since the predicted noise levels comply with the Escondido Municipal Code and the affected land uses are not designated noise sensitive, noise impacts at the L4 location are not considered significant. (*Ibid.*)

NOISE Table 6 - Conditioned Plant Operational Noise Levels and Resulting Ambient Noise Levels

Site	Noise Level, dBA			
	4-Hour Background Noise Level	Permitted Plant Noise Level	Cumulative	Resulting Increase in Ambient Noise Levels
L1 – Live Oak Area	34	37	39	+5
L2 – Oak View Way	36	41	41	+5
L3 – Mobile Homes	40	43	45	+5

Source: Ex. 50, p. 4.6-14.

To prevent strong tonal noises or hissing sounds that could result from the various project components, PEP will be designed to blend the many noise sources so no single noise source will stand out. (Ex. 1, § 5.9.2.2: Ex. 50, p 4.6-14.) Condition **NOISE-6** requires project design to blend noise levels and muffle equipment to prevent legitimate complaints from affected residential receptors.

Noise levels in and near the power plant components will require implementation of industrial occupational safety measures to protect plant employees from hazardous noise exposure. (Ex. 1. p. 5.9-13; Ex. 50, p. 4.16-14.) Condition **NOISE-7** requires the project owner to conduct an occupational noise survey, identify necessary protective measures for onsite employees during project operation, and implement a hearing conservation program.

Staff found that the addition of the PEP combined with the noise levels of the existing RAMCO and CalPeak power plants would not increase existing ambient noise levels at the sensitive receptor sites. (Ex. 50, p. 4.6-15.)

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of PEP will increase noise levels above existing ambient levels in the surrounding community.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to daytime hours in accordance with local noise control laws and ordinances, and providing notice to nearby residences and businesses, as appropriate.

3. The nearest sensitive noise receptors (L1, L2, and L3) are residential areas at 1,800 feet, 2,300 feet, and 2,800 feet from the site where the existing average ambient nighttime noise levels are 34 dBA_{L90}, 36 dBA_{L90}, and 40 $dBA_{L90,}$ respectively.

4. Noise reduction measures will be incorporated in the project design to ensure that operation noise shall not exceed 37 dBA at L1, 41 dBA at L2, and 43 dBA at L3, which effectively limits any noise increase to 5 dBA above background levels and ensures compliance with local noise control laws and ordinances.

5. The project owner will implement measures to protect workers from injury due to excessive noise levels by complying with pertinent Cal/OSHA regulations.

6. Potential cumulative noise impacts from the combined operation of the PEP, CalPeak, and RAMCO power plants will be mitigated to insignificant levels.

7. The project owner will implement the mitigation measures identified in the evidentiary record and the Conditions of Certification to ensure that project-related noise emissions do not cause significant adverse impacts to sensitive noise receptors.

The Commission concludes that implementation of the following Conditions of Certification ensure that PEP will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance for the PEP, the project owner shall notify all residents within one 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: Prior to ground disturbance, the project owner shall transmit to the CPM a statement, signed by the project manager, stating that the above notification has been performed, and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE-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. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), 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 five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, with the local jurisdiction and the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 3-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to Cal-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 75 dBA measured at the nearest sensitive receptor. The project owner shall conduct steam blows only during the hours of 7 a.m. to 6 p.m., Monday through Friday, 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 or air 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, who shall review the proposal with the objective of ensuring that the resulting noise levels will not exceed 45 dBA at any sensitive receptor during nighttime hours (10 p.m. to 7 a.m.). If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of 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 Prior to the first steam or air blow(s), the project owner shall notify all residents and business owners within one mile of the site of the planned 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 or air 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: The project owner shall notify residents and business owners at least 15 days prior to the first high pressure steam blow(s). 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 or air blow activities, including a description of the method(s) of that notification.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that operation of the project will not cause resultant noise levels to exceed an hourly average noise level of:

- 37 dBA at any residence in the vicinity of Site 1 (Live Oak Road Neighborhood)
- 41 dBA at any residence in the vicinity of Site 2 (Oak View Way)
- 43 dBA at any residence east of the project site.

No new pure tone components may be 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.

A. When the project first achieves a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at Sites 1, 2, and 3. The noise surveys shall also include short-term measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

B. If the results from the operational noise survey indicate that the noise level due to the plant operations exceeds the noise standards cited above, mitigation measures shall be implemented to reduce noise to a level of compliance with this limit.

C. If the results from the operational noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The operational noise survey shall take place within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity. Within 15 days after completing the operational survey, the project owner shall submit a summary report of the survey to the City of Escondido Planning Department, and to the CPM. Included in the survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the operational noise survey.

Within 15 days of completion of the new survey, the project owner shall submit to the CPM and the City of Escondido Planning Department a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Following the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an

occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

NOISE-8 Heavy equipment operation and noisy construction or demolition work shall be restricted to the times of day delineated below:

Weekdays 7 a.m. to 6 p.m.
Saturdays 10 a.m. to 5 p.m.

Noise produced by heavy equipment and blasting shall not exceed an hourly L_{eq} of 75 dBA measured at or within any residential property. Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers and standard factory noise attenuation features. Haul trucks shall be operated in accordance with posted speed limits, and shall use offsite haul roads approved by the City of Escondido. Truck engine exhaust brake use shall be limited to emergencies.

Construction stockpiling and vehicle staging areas shall not be located within 200 feet of existing residences.

Use of noise-producing signals by construction vehicles shall be limited to safety warning purposes only. Hand-held devices shall be used for worker communication, rather than public address systems.

Whenever construction is occurring within 200 feet of occupied residences, the project owner shall conduct noise monitoring at the nearest residence for at least one hour each day during construction activities. If the noise measurements indicate non-compliance with any of these requirements, the project owner shall implement mitigation measures as required by the CPM.

Verification: Prior to project ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project. Within 15 days after the

end of each month during construction, the project owner shall submit a summary report of the construction noise measurement data to the City of Escondido Planning Department, and to the CPM. Included in the report will be a description of the measured noise levels, whether the noise limits listed above were exceeded, any additional mitigation measures necessary to achieve compliance with the noise limits, and a schedule, subject to CPM approval, for implementing these measures.

NOISE-9 Vibration due to blasting or other construction practices during site development shall be limited to a peak particle velocity of 0.2 in/sec at the nearest sensitive receptor.

A. During blasting, the project owner will conduct vibration monitoring at the nearest structure, and will continue the monitoring until blasting is completed.

B. Blasting shall be limited to the hours of 9:00 a.m. to 4:00 p.m., Monday through Friday.

C. If vibration measurements indicate at any time that vibration due to construction or blasting at any sensitive receptor has exceeded a peak particle velocity of 0.2 in/sec, the operator shall notify the CPM immediately, and shall cease the activity or blasting until a mitigation plan is developed and implemented to achieve compliance.

Verification: During the periods when blasting occurs, the project owner shall submit a weekly summary report of the blasting vibration measurements to the CPM and to the City of Escondido Fire Department, which will include a description of any required mitigation measures that were implemented.

NOISE-10 Use of horns, whistles, bells, alarms, and loudspeakers shall be allowed only for emergencies, and for testing of emergency warning systems.

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 and operation of the project.

NOISE COMPLAINT RESOLUTION FORM
PALOMAR ENERGY PROJECT
01-AFC-24 (C)

NOISE COMPLAINT LOG NUMBER _____

Complainant's name and address:

Phone number: _____

Date complaint received: _____

Time complaint received: _____

Nature of noise complaint:

Definition of problem after investigation by plant personnel:

Date complainant first contacted: _____

Initial noise levels at 3 feet from noise source _____ dBA Date: _____

Initial noise levels at complainant's property: _____ dBA Date: _____

Final noise levels at 3 feet from noise source: _____ dBA Date: _____

Final noise levels at complainant's property: _____ dBA Date: _____

Description of corrective measures taken:

Complainant's signature: _____ Date: _____

Approximate installed cost of corrective measures: $ _____

Date installation completed: _____

Date first letter sent to complainant: _____ (copy attached)

Date final letter sent to complainant: _____(copy attached)

This information is certified to be correct:

Plant Manager's Signature: _____

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

Noise Table Appendix 1 Definition of Some Technical Terms Related to Noise	
Terms	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a Sound Level Meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L_{10}, L_{50}, & L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the Noise Level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: California Department of Health Services 1976, 1977.

Noise Table Appendix 2 Typical Environmental and Industry Sound Levels			
Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Peterson and Gross 1974

SUBJECTIVE RESPONSE TO NOISE

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

With regard to increases in A-weighted noise levels, knowledge of the following relationships (Kryter 1970) can be helpful in understanding the significance of human exposure to noise.

1. Except under special conditions, a change in sound level of one dB cannot be perceived.
2. Outside of the laboratory, a three dB change is considered a barely noticeable difference.
3. A change in level of at least five dB is required before any noticeable change in community response would be expected.
4. A ten dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

Combination of Sound Levels

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a three dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus three dB). The rules for decibel addition used in community noise prediction are:

Noise Table Appendix 3 Addition of Decibel Values	
When two decibel Values differ by:	Add the following Amount to the Larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0
Figures in this table are accurate to ± 1 dB. Source: Thumann, Table 2.3	

Sound and Distance

1. Doubling the distance from a noise source reduces the sound pressure level by six dB.

2. Increasing the distance from a noise source ten times reduces the sound pressure level by 20 dB.

Worker Protection

OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed:

Noise Table Appendix 4
OSHA Worker Noise Exposure Standards

Duration of Noise (Hrs/day)	A-Weighted Noise Level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 CFR § 1910.95

E. SOCIOECONOMICS

This review of "socioeconomics" evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities, and other public services, as well as the fiscal and physical capacities of local government to meet these needs. The public benefits of the project, including economic, environmental, and electricity reliability benefits are also reviewed. In addition, an environmental justice screening analysis is conducted to determine whether project-related activities would result in disproportionate impacts on low income and/or minority populations.

Summary and Discussion of the Evidence

The construction phase 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.

Applicant identified a study area within San Diego County that could potentially be affected by an influx of workers, specifically, the Cities of Escondido, San Marcos, and Vista, which are within a 10-mile radius of the site, as well as several smaller unincorporated communities within the project area. (Ex. 1, § 5.8.1.1.) The evidentiary record indicates that construction workers will commute as much as two hours each way from their homes rather than relocate. (Ex. 1, § 5.8.2.1; Ex. 50, p. 4.8-5.) Since San Diego County represents a large and diverse skilled labor pool with skills available to fulfill the labor needs for project construction, it is unlikely that a large influx of workers would require housing accommodations within the study area. (*Ibid*., Ex. 1, Table 5.8-8.).

1. Potential Impacts

The construction period will take about 21 months with a peak workforce of 350 workers during months 9-12 and an average workforce of about 227 workers, consisting of skilled workers and contractor staff. (Ex. 50, p. 4.8-9; Ex. 1, Table 5.8-6.) Applicant expects to hire about 20 full-time employees for project operation and maintenance. (Ex. 1, § 5.8.2.2.)

The evidentiary record demonstrates there is ample and varied housing in San Diego County and in the local communities to accommodate about 35 workers with specialized skills from outside the area who may need temporary housing. Impacts on housing and related services will be minimal in relation to the supply of available housing and services available. No replacement or displacement of residential housing will be necessary as a result of the project. (Ex. 1, § 5.8.1.3 and p. 5.8-12)

Since project-induced potential population increases will be minimal to non-existent, construction and operation of the PEP will not result in significant adverse impacts on schools, public utilities, or emergency services in the local communities. (Ex. 1, pp. 5.8-14 and 5.8-15; Ex. 50, pp. 4.8-9 and 4.8-10.)

The project will have an estimated construction payroll of $67 million (2001 dollars); local purchases of materials and equipment during construction will result in about $3 million in sales tax revenues. The project will generate property tax revenues of $3.0 to $3.5 million per year.[77] The local operations payroll of approximately $2 million and local supplies purchases of $3 million per

[77] Under AB 81 (Rev. and Taxation Code, § 100.9), the responsibility for property tax assessment for large power plants such as the PEP shifted from the County Assessor to the State Board of Equalization (BOE) as of January 1, 2003. The statute requires an annual reassessment at fair market value and provides that property taxes be distributed exclusively to the taxing jurisdictions in which the facility is located. Thus, it is assumed that the local public service providers currently receiving property tax revenues in the PEP Tax Rate Area will receive equivalent portions of the tax revenues generated by the PEP. (Ex. 50, p. 4.8-11.)

year during operation will yield an estimated $350,000 to $400,000 per year in sales tax revenues. (Ex. 35, Bachrach, Socio, p. 4.) Total capital cost of the project including payroll is estimated at $350 million. (Ex. 50, p. 4.8-11.)

The City of Escondido imposes school impact fees at the rate of $0.33 per square foot of a project's building space. Based on a total area of covered and closed structures of 18,000 square feet, the project owner is required to pay a one-time school impact fee of $5,940. (Ex. 1, pp. 5.8-14 and 5.8-15.) Condition of Certification **SOCIO-1** incorporates the City's school impact fee requirement.

2. Section 25523(h) Public Benefit Findings

Public Resources Code section 25523(h) requires a discussion of the project's public benefits. Project construction will provide local economic benefits by creating indirect short-term employment, as well as generating additional sales tax revenues due to the multiplier effect from local payroll expenditures and local purchases of materials and equipment. Property tax revenues from the project will be allocated to local schools and for city and county infrastructure, and redevelopment. (Ex. 35, Bachrach, Socio, pp. 3-4; Ex. 1, p. 5.8-15.) According to Applicant, however, the most important public benefit of the project is local generation of reliable electrical power for the northern portion of the SDG&E service area using efficient state-of-the-art generators and modern pollution control technology. Since the project will not cause unmitigated significant effects on the environment, the PEP provides an environmental benefit compared with older generating facilities in the San Diego region that are less efficient and more polluting. (*Ibid*.)

3. Environmental Justice Screening Analysis

The parties conducted a screening analysis to determine whether environmental justice concerns are present in this case.[78] (Ex. 1, § 5.8.2.3.) The screening 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 low-income and/or minority populations of the affected area constitute 50 percent or more of the general population.

Staff reviewed relevant 2000 Census data within a six-mile radius of the site to determine whether low income/minority populations constitute more than 50 percent of the general population.[79] Neither Escondido nor the nearby communities of Vista and San Marcos have minority populations or populations with incomes below the poverty level that exceed the federal 50 percent criterion. (Ex. 1, p. 5.8-16; Ex. 50, pp. 4.8-3, 4.8-5, 4.8-12.) Five of the 40 census tracts within the six-mile radius show minority populations in excess of 50 percent, but the nearest of these tracts is about two miles east of the site.[80] Although these

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[78] Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires the U.S. Environmental Protection Agency (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 include this analysis in power plant siting decisions to ensure that any potential adverse impacts on identified populations will be addressed.

[79] Staff requires a six-mile radius for this 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. 50, pp. 4.8-3 and 4.8-10.)

[80] Census 2000 data show that minority populations within the six-mile radius constitute 44 percent of the general population. Several census blocks within the Cities of Escondido and San Marcos have minority populations greater than 75 percent; one tract in Escondido is two to three miles east of the PEP site and one in San Marcos is four miles west of the PEP site. (Ex. 50, p. 4.8-3) Approximately 12.2 percent of the population within the six-mile radius would be considered low-income (i.e., annual income less than $17, 030 for household of four). (*Id*., at p. 4.8-5.)

clusters of low income and/or minority populations in the project vicinity do not constitute 50 percent of the study area, Staff conducted focused environmental justice analyses in several technical areas to ensure there would be no disproportionate health effects due to the PEP.[81] (Ex. 50, p. 4.8-12.)

Compliance with all Conditions of Certification adopted by this Decision ensures that no unmitigated significant adverse impacts will result from project-related activities. As described in the **Air Quality** and **Public Health** sections, changes in air quality values and public health indices that could occur as a result of project operations are below regulatory thresholds for significant impact. (Ex. 1, §§ 5.2 and 5.15.) Since air quality and public health impacts associated with the PEP would not be significant, no population, including environmental justice populations, would be disproportionately impacted by the PEP. As the PEP will not result in adverse effects to any population, no further environmental justice analysis is required. (*Ibid*; Ex. 50, p. 4.8-13; Ex, 35, Bachrach, Socio, p. 4.)

3. Cumulative Impacts

Approximately 35 to 40 workers would be involved in grading and related work on the PEP site, which is expected to last about three months. The local work force in Escondido and San Diego County will be adequate for these activities. The construction payroll for grading and related work is estimated at $500,000 and approximately 100 short-term indirect jobs would be generated. (Ex. 1, p. 5.8-19). Since the earthmoving activities are labor intensive, materials and equipment purchases will be minimal. Staff believes there could be some overlap with the construction of the PEP and the ERTC. However, the large local labor force will be able to provide workers for both projects. (Ex. 50, p. 4.8-11.) While construction of the ERTC could eventually result in direct and indirect impacts on population,

[81] Staff reviewed the following technical areas for potential environmental justice impacts: air quality, public health, hazardous materials, noise, water, waste, traffic and transportation, visual resources, land use, and transmission safety and nuisance. (Ex. 50 , p. 2-5.)

schools, housing supply, and other socioeconomic factors, Staff does not anticipate any cumulative socioeconomic impacts from the combined operation of the PEP and ERTC. (*Id*., at p. 4.8-12.) Since the PEP would not result in any significant adverse socioeconomic impacts on housing, schools, or public services, it is not expected to contribute to significant cumulative socioeconomic impacts in the project vicinity.

FINDINGS AND CONCLUSIONS

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

1. A large skilled labor pool in the greater San Diego area is available for construction and operation of the project.

2. The project will not cause an influx of a significant number of construction or operation workers to relocate in the local Escondido area.

3. The project will not result in significant adverse effects to local employment, housing, schools, public utilities, or emergency services.

4. The PEP will provide $3.0 to 3.5 million in annual property tax revenues.

5. The estimated construction payroll will be approximately $67 million (2001 dollars) and the annual operations payroll will be about $2 million (2001 dollars).

6. The PEP will spend an estimated $40 million on locally purchased materials and equipment during construction and about $3 million per year during operation.

7. The demographic environmental justice screening analysis indicates that low income and/or minority populations are not disproportionately represented in the area surrounding the PEP site.

8. Since PEP will not result in adverse effects to any population, there will be no disproportionate impacts to low-income and/or minority populations.

9. The project will provide public benefits, including economic and environmental benefits, and electricity reliability to the northern portion of the SDG&E service area.

10. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

11. Implementation of the Condition of Certification, below, and the mitigation measures described in the evidentiary record, ensures that the project will not result in adverse socioeconomic impacts in the project vicinity.

We therefore conclude that implementation of all Conditions of Certification in this Decision, including the Condition of Certification below, ensures 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**.

CONDITION OF CERTIFICATION

SOCIO-1: The project owner shall pay the one-time statutory school facility development fee as required at the time of filing for the in-lieu building permit with the City of Escondido Building Department.

Verification: The project owner shall provide proof of payment of the statutory development fee in the next Monthly Compliance Report following the payment.

Appendix A

LORS: Laws, Ordinances, Regulations, and Standards

AIR QUALITY

FEDERAL

The federal Clean Air Act requires any new major stationary source of air pollution, and any major modification to existing major stationary sources, to obtain a construction permit before commencing construction. This process is known as New Source Review (NSR). Its requirements differ depending on the attainment status of the area where the major facility is to be located. Prevention of Significant Deterioration (PSD) requirements apply in areas that are in attainment of the national ambient air quality standards. The nonattainment NSR requirements apply to areas that have not been able to demonstrate compliance with national ambient air quality standards. The entire program, including both PSD and nonattainment NSR permit reviews, is referred to as the federal NSR program.

Title V of the federal Clean Air Act requires states to implement and administer an operating permit program to ensure that large sources operate in compliance with the requirements included in the Title 40, Code of Federal Regulations, part 70. A Title V permit contains all of the requirements specified in different air quality regulations that affect an individual project.

Title IV of the federal Clean Air Act requires implementation of an acid rain permit program (40 CFR, part 72). These regulations require subject facilities to obtain emission allowances for SOx emissions.

The U.S. Environmental Protection Agency (U.S. EPA) has reviewed and approved the SDAPCD's regulations for the PSD, nonattainment NSR, Title V, and Title IV programs. These federal permitting programs have been delegated to the District for implementation. The District rules and regulations implementing the federal programs are as stringent as the federal regulations.

The Palomar Energy Project is also subject to the federal New Source Performance Standards (NSPS) in Title 40, Code of Federal Regulations, part 60. Enforcement of NSPS has been delegated to the SDAPCD. The proposed combined cycle power plant must comply with the requirements of NSPS Subparts Da and GG. SDAPCD emission limitations or Best Available Control Technology (BACT) requirements are, however, more restrictive than the NSPS requirements, as will be discussed below. The federal NSPS allowable emissions concentration for NOx is 75 parts per million by dry volume (ppmvd) @ 15 percent O_2, and the NSPS requirement for SO_2 emissions concentration is 150 parts per million (ppm) @ 15 percent O_2.

STATE

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 cause injury, detriment, nuisance, or annoyance to any considerable

number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

LOCAL

As part of the Energy Commission's licensing process, in lieu of issuing a construction permit to the applicant for the Palomar Energy Project, the District prepared a Final Determination of Compliance (FDOC, SDAPCD 2002c). The FDOC evaluates whether, and under what conditions, the proposed project will comply with the applicable rules and regulations, as described below. The District conducted its review for the FDOC in a manner that is equivalent to that for an Authority to Construct. The PDOC was issued for public comment period on July 3, 2002, and it was followed by the Final Determination of Compliance on December 6, 2002. Provided successful completion of the Energy Commission's licensing process, and incorporation of the District's conditions into the Decision granted by the Energy Commission, the Determination of Compliance serves as an equivalent to an Authority to Construct. A Permit to Operate would later be issued by the District provided the construction is in compliance with the conditions of the Determination of Compliance and the Energy Commission Decision.

The project is subject to specific SDAPCD rules and regulations described below.

Regulation II – Permits

Rule 20.1 and 20.3 – New Source Review

Rules 20.1 and 20.3 generically apply to all sources subject to permitting under the nonattainment NSR and PSD programs. All portions of Rule 20.1 apply. This includes definitions and instructions for calculating emissions. Applicable components of Rule 20.3 are described below.

Rule 20.3(d)(1) – Best Available Control Technology/Lowest Achievable Emission Rate

This subsection of the rule requires that BACT be installed on a pollutant specific basis if emissions exceed 10 lbs/day for each criteria pollutant (except for CO, for which the PSD BACT threshold is 100 tons per year). This subsection also requires that Lowest Achievable Emission Rate (LAER) be installed on a pollutant specific basis if the emissions exceed 50 tons per year for NOx (oxides of nitrogen) or VOC emissions. Because the District attains the national ambient air quality standards for CO, SO_2, and PM_{10}, LAER does not apply to these particular pollutants (District Rule 20.3(d)(1)(v)).

The Palomar Energy Project is required to install LAER for NOx and BACT for CO, VOC, SOx, and PM_{10}.

Rule 20.3(d)(2) – Air Quality Impact Analysis

This portion of the rule requires that an Air Quality Impact Analysis (AQIA) be performed for air contaminants that exceed the trigger levels published in Table 20.3-1 of the District's Rules and Regulations. For an AQIA of PM_{10}, the rules require that direct emissions and emissions of PM_{10} precursors be included in the analysis.

The Palomar Energy Project is required to prepare an AQIA for NOx, CO, and PM_{10}.

Rule 20.3(d)(3) – Prevention Of Significant Deterioration

This portion of the rule requires that a PSD evaluation be performed for all contaminants that exceed PSD major source trigger levels.

The Palomar Energy Project is required to complete a PSD evaluation for NO_2, CO, and PM_{10}.

Rule 20.3(d)(4) – Public Notice And Comment

This portion of the rule requires the District to publish a notice of the proposed action in at least one newspaper of general circulation in San Diego County and requires sending notices to the U.S. EPA and the California Air Resources Board (CARB). The District must allow at least 30 days for public comment and consider all comments submitted. The District must also make all information regarding the evaluation available for public inspection.

The public notice and comment period for the Palomar Energy Project occurred in July and August 2002 (PDOC, SDAPCD 2002b).

Rule 20.3(d)(5) – Emission Offsets

This portion of the rule requires that emissions of any federal nonattainment criteria pollutant or its precursors, which exceed major source thresholds, be offset with actual emission reductions. The District is a federal nonattainment area only for ozone. Therefore, this rule potentially requires offsets only for NOx and VOC emissions, as ozone precursors.

Because the Palomar Energy Project would not cause VOC emissions exceeding the major source levels (50 tons per year), offsets are required by this rule only for new project emissions of NOx.

Rule 20.3(e)(1) – Compliance Certification

This rule requires that the applicant certify that all major stationary sources owned or operated by the applicant in California are in compliance, or on an approved schedule for compliance, with all applicable emission limitations and standards under the federal Clean Air Act.

The AFC shows that neither Palomar Energy, LLC or Sempra Energy Resources own or operate another major stationary source in California (Palomar 2001a, p. 5.2-62).

Rule 20.3(e)(2) – Alternative Siting and Alternatives Analysis

This rule requires that the applicant conduct an analysis of alternative sites, sizes, production processes, and environmental control techniques, which demonstrates that the benefits of the proposed project outweigh the environmental and social costs.

The Alternatives analysis included with the AFC will be used to meet this requirement (Palomar 2001a, Section 3).

Rule 20.5 – Power Plants

This rule requires that the District prepare a decision of Preliminary and Final Determination of Compliance (PDOC and FDOC), which shall confer the same rights and privileges as an Authority to Construct only after successful completion of the Energy Commission‘s licensing process.

Regulation IV – Prohibitions

Rule 50 – Visible Emissions

This rule prohibits air contaminant emissions into the atmosphere darker than Ringelmann Number 1 (20 percent opacity) for more than an aggregate of three minutes in any consecutive 60 minute time period.

Rule 51 – Nuisance

This rule prohibits the discharge of air contaminants that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public or damage to any business or property.

Rule 52 – Particulate Matter

This rule is a general limitation for all sources of particulate matter to not exceed 0.10 grain per dry standard cubic foot (0.23 grams per dry standard cubic meter) of exhaust gas.

Rule 53 – Specific Air Contaminants

This rule limits emissions of sulfur compounds (calculated as SO_2) to less than or equal to 0.05 percent, by volume, on a dry basis. This rule also contains a limitation restricting particulate matter emissions from gaseous fuel combustion to less than or equal to 0.10 grains per dry standard cubic foot of exhaust calculated at 12 percent CO_2.

Rule 62 – Sulfur Content of Fuels

This rule requires the sulfur content of gaseous fuels to contain no more than 10 grains of sulfur compounds, calculated as hydrogen sulfide, per 100 cubic feet of dry gaseous fuel (0.23 grams of sulfur compounds, calculated as hydrogen sulfide, per cubic meter of dry gaseous fuel), at standard conditions.

Rule 69.3 – Stationary Gas Turbines - Reasonably Available Control Technology

This rule limits NOx emissions from gas turbines greater than 0.3 MW to 42 ppm at 15 percent oxygen when fired on natural gas. The rule also specifies monitoring and record keeping requirements. Startups, shutdowns, and fuel changes are defined by the rule and excluded from compliance with these limits. This limit is less stringent than the BACT/LAER requirement of Rule 20.3(d)(1).

Rule 69.3.1 – Stationary Gas Turbines - Best Available Retrofit Control Technology

This rule limits NOx emissions from existing and new gas turbines greater than 10 MW to 15x(E/25) ppm when operating uncontrolled and 9x(E/25) ppm at 15 percent oxygen when operating with controls and averaged over a one-hour period (where E is the percent thermal efficiency of the unit, typically between 30 to 40 percent for gas turbines). The rule also specifies monitoring and record keeping requirements. Startups, shutdowns, and fuel changes are defined by the rule and excluded from compliance with these limits. This limit is less stringent than the BACT/LAER requirement of Rule 20.3(d)(1).

Regulation X – Standards of Performance for New Stationary Sources

Adopts federal New Source Performance Standards (NSPS, 40 CFR, Part 60) by reference. The federal requirements are described above.

Regulation XI – National Emission Standards for Hazardous Air Pollutants

Adopts federal standards for hazardous air pollutants by reference. No such standards presently exist that would apply to the project.

Regulation XII – Toxic Air Contaminants

Rule 1200 – Toxic Air Contaminants, New Source Review

This rule requires a health risk estimate for sources of toxic air contaminants. Toxics Best Available Control Technology (TBACT) must be installed if a Health Risk Assessment shows an incremental cancer risk greater than one in a million, and no source would be allowed to cause an incremental cancer risk exceeding ten in a million.

Regulation XIV – Title V Operating Permits

Rule 1401 – General Provisions

This regulation contains the requirements for federal Title V Operating Permits. The applicant is required to submit a Title V Operating Permit application after successful construction and startup of the project.

Rule 1412 – Federal Acid Rain Program Requirements

This regulation contains the requirements for participation in the federal Acid Rain Program. The applicant is required to submit an application to enter the program prior to startup.

City of Escondido

Zoning Code – Article 26, Industrial Zones

The City of Escondido Municipal Code includes a performance standard that all uses and operations within industrial zones be conducted so that no unreasonable odor, vapor, dust, or smoke constituting a public nuisance is discernable at the site's property line (Section 33-570).

Zoning Code – Article 47, Environmental Quality Regulations

The City of Escondido has set forth thresholds for projects that must comply with the CEQA process. Section 33-924(a)(1)(G) of Article 47 of the Zoning Code specifies that an Environmental Impact Report (EIR) should be prepared for projects that exceed certain emission thresholds.

The Palomar Energy Project is in compliance with this requirement since the AFC and subsequent Energy Commission review includes an analysis that is CEQA-equivalent to the level of analysis found in an EIR. The Energy Commission decision serves as a CEQA document.

ALTERNATIVES

California Environmental Quality Act

The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations Section 15126.6(a), require an evaluation of the comparative merits of "a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project." In addition, the analysis must address the No Project Alternative [Cal. Code Regs., tit. 14, §15126.6(e)].

The range of alternatives is governed by the "rule of reason" which requires consideration only of those alternatives necessary to permit informed decision-making and public participation. The California Environmental Quality Act (CEQA) states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative (Cal. Code Regs., tit. 14, §15125(d)(5)). However, if the range of alternatives is defined too narrowly, the analysis may be inadequate (City of Santee v. County of San Diego (4th Dist. 1989) 214 Cal. App. 3d 1438).

BIOLOGICAL RESOURCES

FEDERAL

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.

Fish and Game Coordination Act

Title 16, United States Code, section 661 et seq. requires federal agencies to coordinate federal actions with the U. S. Fish and Wildlife Service (USFWS) to conserve fish and wildlife resources.

Clean Water Act of 1977

Title 33, United States Code, section 1344 and Title 30 Code of Federal Regulations, section 330.5(a)(26) regulate the placement of fill in waters of the United States and adjacent wetlands.

Migratory Bird Treaty Act

Title 16, United States Code, sections 703 through 712 prohibit the take of migratory birds.

STATE

California Endangered Species Act of 1984

Fish and Game Code, section 2050 et seq. protect 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 prohibit take of animals that are classified as Fully Protected in California.

Natural Community Conservation Plan (NCCP) Act of 1991

This act includes provisions for protection and management of state-listed threatened or endangered plants and animals and their designated habitats.

Streambed Alteration Agreement

Fish and Game Code, section 1600 et seq. requires the California Department of Fish and Game (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.

Threatened and Endangered Species

Title 14, California Code of Regulations, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.

LOCAL

Northwestern San Diego County Multiple Habitat Conservation Program

The Multiple Habitat Conservation Program (MHCP) is one of several, large multiple-jurisdictional habitat planning efforts in San Diego County, each of which constitutes a subregional plan under the State of California's Natural Community Conservation Planning (NCCP) Act of 1991. These subregional plans include the:

1. Multiple Species Conservation Program (MSCP),
2. MSCP North County Subarea Program, and
3. Multiple Habitat Conservation Program (MHCP).

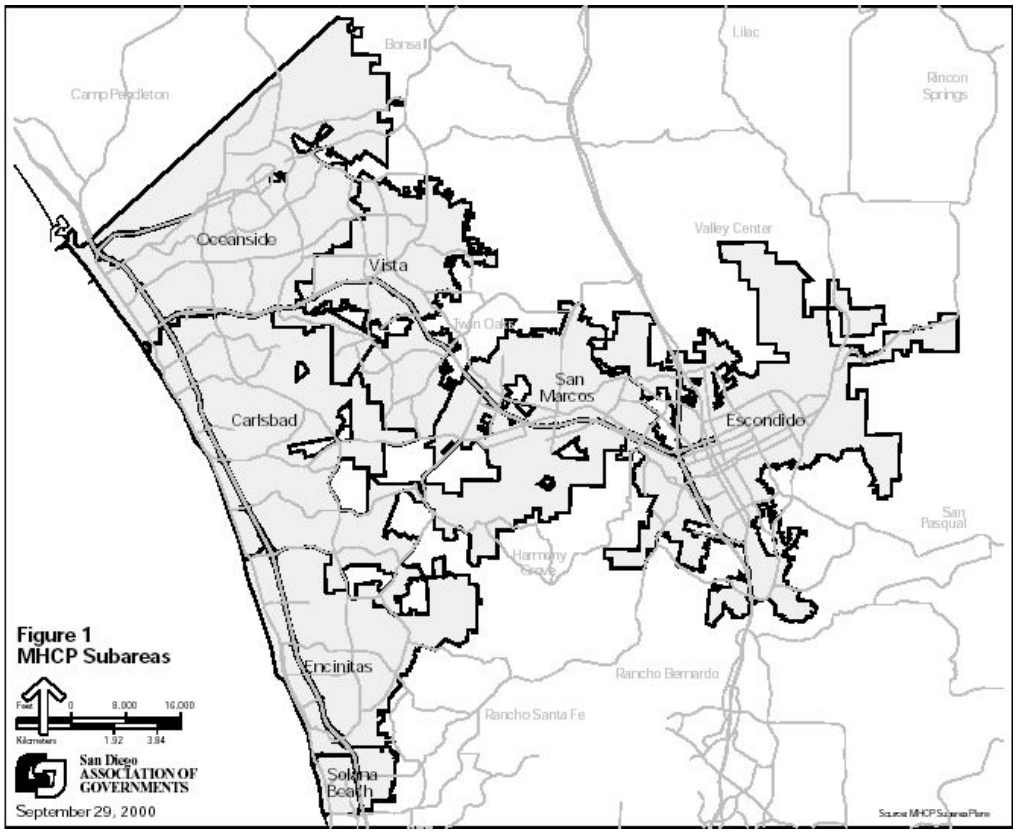
The MHCP is a comprehensive, multiple-jurisdictional planning program designed to develop an ecosystem preserve in northwestern San Diego County, including the ERTC / PEP project areas. Implementation of the regional preserve system is intended to protect viable populations of key sensitive plant and animal species and their habitats, while accommodating continued economic development and quality of life for residents of the north county region.

The current MHCP study area encompasses about 186 square miles (111,865 acres) and comprises seven incorporated cities in northwestern San Diego County (Carlsbad, Encinitas, Escondido, Oceanside, San Marcos, Solana Beach, and Vista; Biological Resources Figure 1). In implementing their respective portions of the MHCP plan, the various, citywide Subarea Plans describe the specific mechanisms

each city will institute for the MHCP. Collectively, the Subarea Plans, once approved, will contribute to the conservation of biological communities and species in the MHCP study area. In turn, the MHCP plan, in concert with other subregional plans, will contribute to continued ecosystem viability in southern coastal California.

The combination of the subregional MHCP plan and city Subarea Plans will serve as a multiple species Habitat Conservation Plan (HCP) pursuant to section 10(a)(1)(B) of the federal Endangered Species Act (ESA), as well as an NCCP plan under the NCCP Act and the California Endangered Species Act (CESA). Participating jurisdictions will submit these plans to the USFWS and CDFG in support of applications for permits and authorizations to incidentally take listed threatened or endangered species or other species of concern. “Take authorizations” issued by the wildlife agencies allow for otherwise lawful actions such as development that may incidentally take or harm individuals of a species or its habitat (generally outside of the preserve system) in exchange for conserving the species inside the preserve system. A jurisdiction that is issued a take authorization, referred to as a “take authorization holder,” may share the benefits of that authorization by using it to permit public or private projects that comply with the MHCP and the city’s Subarea Plan. The conservation and management responsibilities, assurances of implementation, and corresponding authorizations for all parties will be contained in an implementing agreement between each take authorization holder (city) and the wildlife agencies (USFWS and CDFG).

Biological Resources – Figure 1
Multiple Habitat Conservation Program Subareas

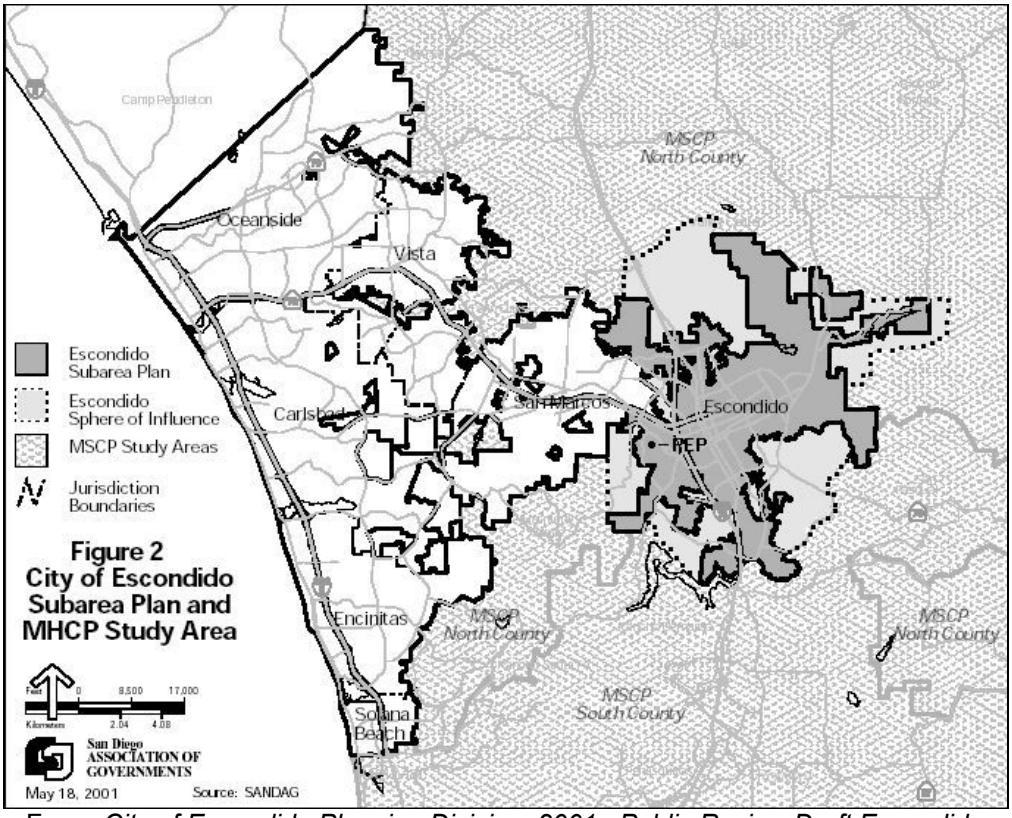


From: *San Diego Association of Governments and MHCP Advisory Committee, 2000. Public Review Draft MHCP Plan, Multiple Habitat Conservation Program: Volume I.*

Escondido Subarea Plan Implementing the Multiple Habitat Conservation Program

Escondido is one of seven cities in northwestern San Diego County that together constitute the MHCP subregion. The City has been involved in the subregional MHCP from its inception in 1991. The Escondido Subarea Plan (Subarea Plan; Biological Resources Figure 2) represents the City of Escondido's contribution to the MHCP and to regional NCCP conservation goals. It comprehensively addresses how the city of Escondido will conserve natural biotic communities and sensitive plant and wildlife species. The planning process for Escondido is an outgrowth of the evolving subregional plan and is completely integrated and consistent with the MHCP. The Subarea Plan is currently in draft form (City of Escondido, 2001a). Permitting of the Subarea Plan is not anticipated before mid- to late-2003 (City of Escondido, 2002b) and will therefore not likely be permitted in time for use by the applicant for this project.

Biological Resources – Figure 2
City of Escondido Subarea Plan and Multiple Habitat Conservation Program Study Area



From: *City of Escondido Planning Division, 2001. Public Review Draft Escondido Subarea Plan Implementing the Multiple Habitat Conservation Program (City Case File 95-25-GPIP).*

CULTURAL RESOURCES

FEDERAL

Federal Guidelines for Historic Preservation Projects (36 C.F.R. § 61): The US Secretary of the Interior has published a set of Standards and Guidelines for Archaeology and Historic Preservation. These are considered to be the appropriate professional methods and techniques for the preservation of archaeological and historic properties. 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.

Title 36, Code of Federal Regulations, Part 800 et seq, the implementing regulations of Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470, 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. The regulations implementing this act, which were revised in 1997, set forth procedures to be followed for determining eligibility of cultural resources, determining the effect of the undertaking on the historic properties, and how the effect will be taken into account. The eligibility criteria and the process described in these regulations are used by federal agencies. Very similar criteria and procedures are used by the state in identifying cultural resources eligible for listing in the California Register of Historical Resources.

STATE

Title 14, California Code of Regulations, section 4852 defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.

Public Resources Code, section 5000 establishes a California Register of Historic Places (CRHR), criteria for eligibility to the CRHR and defines eligible resources. It identifies any unauthorized removal or destruction of historic resources on sites located on public land as a misdemeanor. It also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. This section defines procedures for the notification of discovery of Native American artifacts or remains, and states that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.

The California Environmental Quality Act (Pub. Resources Code, §21000 et seq.); requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.

Public Resources Code, section 21083.2 states that the lead agency determines whether a project may have a significant effect on “unique” archaeological resources. If so, an EIR shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, the lead agency may require reasonable steps to preserve the resource in place. Otherwise, mitigation measures

shall be required as prescribed in this section. The section discusses excavation as mitigation, limits the applicant's cost of mitigation, sets time frames for excavation, defines "unique and non-unique archaeological resources," and provides for mitigation of unexpected resources. The California Energy Commission process is a CEQA equivalent process and Staff Assessments replace the CEQA environmental documents.

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.

The CEQA Guidelines, prescribe the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project's impact on a historical resource (Cal. Code Reg, Tit.14, § 15126.4(b)). This section also discusses documentation as a mitigation measure and discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.

Section 15064.5 of the CEQA Guidelines defines the term "historical resources," explains when a project may have a significant effect on historic resources, describes CEQA's applicability to archaeological sites, and specifies the relationship between "historical resources" and "unique archaeological resources."

Penal Code, section 622 1/2 states that anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.

Health and Safety Code, section 7050.5 states that if human remains are discovered during construction, the project owner is required to contact the county coroner.

LOCAL

City of Escondido

The City of Escondido General Plan Policies F1.1 through F1.5 promote the preservation of cultural resources. Article 40 of the City of Escondido Zoning Ordinance establishes a local register of historical places and a Historical Resources Commission. An historical survey of the city was completed in 1984 and is updated periodically. The survey resulted in an historical inventory of the city. Structures in the inventory can be considered for local register, local landmark or historic district status if they meet certain criteria and are approved by the Historical Resources Commission and the city council. Demolition permits for buildings listed in the local register (which includes local landmarks and historic districts) are granted by the Historical Resources Commission and the city council only if certain conditions are met (Palomar 2001a, p. 6-34; Palomar 2001b).

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

Lists of LORS applicable to each engineering discipline (civil, structural, mechanical and electrical) are described in the AFC (Palomar 2001a, Appendix D). Some of these LORS include California Building Code (CBC) and standards promulgated by the American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM) and American Welding Society (AWS).

GEOLOGY, MINERAL RESOURCES, AND PALEONTOLOGY

FEDERAL

There are no federal LORS for geologic hazards and resources or grading for the proposed project. The Federal Antiquities Act of 1906, in part, protects paleontologic resources from vandalism and unauthorized collection on federal land (16 United States Code 431 as amended). The National Environmental Policy Act of 1968 as amended, requires analysis of potential environmental impacts to important historic, cultural and natural aspects of our national heritage (United States Code, §S 4321 to 4327; 40, §S 1502.25).

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 (CBSC, 1998). 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 the Appendix to Chapter 33). The CBC supplements the UBC's grading and construction ordinances and regulations.

The California Environmental Quality Act 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 geologic hazards.
- Sections (X) (a) and (b) pose questions about the project's effect on mineral resources.

The "Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources: Standard Procedures" (SVP, 1995) is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. They were adopted in October 1995 by the Society of Vertebrate Paleontologists (SVP), a national organization.

HAZARDOUS MATERIALS MANAGEMENT

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.), contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III). The Clean Air Act (CAA) of 1990 (42 USC §7401 et seq. as amended) established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The CAA section on Risk Management Plans (42 USC §112(r)) 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 both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.

The safety requirements for natural gas pipeline construction vary according to the population density and land use that characterize the surrounding land. The pipeline classes are defined as follows (CFR part 192.5):

- Class 1: Pipelines in locations with ten or fewer buildings within 220 yards from the center line in any one-mile stretch that are intended for human occupancy.
- Class 2: Pipelines in locations with more than ten but fewer than 46 buildings within 220 yards from the centerline in any one-mile stretch, intended for human occupancy. This class also includes drainage ditches of public roads and railroad crossings.
- Class 3: Pipelines in locations with more than 46 buildings within 220 yards of the centerline in any one-mile stretch, intended for human occupancy, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12 month period. (The days and weeks need not be consecutive).

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 to 515, set forth requirements for design, construction and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society for Material Engineering (ASME) Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.

California Health and Safety Code, 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."

SDG&E will upgrade approximately 2,600 feet of pipeline at a location one-mile northeast of the site. Laws, ordinances, regulations and standards (LORS) that apply to this pipeline include state and federal regulations. The natural gas pipeline will be designed for Class 3 service and will meet California Public Utilities Commission General Order 112-E and 58-A standards, as well as various SDG&E standards. The natural gas pipeline must be constructed and operated in accordance with the Federal Department of Transportation (DOT) regulations, Title 49, Code of Federal Regulations (CFR), Parts 190, 191, and 192:

- Title 49, Code of Federal Regulations, Part 190 outlines the pipeline safety program procedures;
- Title 49, Code of Federal Regulations, Part 191, Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days; and
- Title 49, Code of Federal Regulations, Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, specifies minimum safety requirements for pipelines and includes material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use which characterize the surrounding land. This part contains regulations governing pipeline construction that must be followed for Class 2 and Class 3 pipelines.

LOCAL

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials in Articles 79 and 80. The latest revision to Article 80 was in 1997 (Uniform Fire Code, 1997) and includes minimum setback requirements for outdoor storage of ammonia. The Administering Agency for this authority is the City of Escondido Fire Department.

The Certified Unified Program Authority (CUPA) with responsibility to review RMPs and Hazardous Materials Business Plans is the San Diego County Environmental Health Services Department. The CUPA has delegation for administering federal accidental release programs under SARA Title III.

LAND USE

FEDERAL

There are no specific federal LORS associated with land use that apply to the project.

State

There are no specific state LORS associated with land use that apply to the project.

Local

City of Escondido General Plan

State law requires that each city and/or county prepare and adopt a comprehensive General Plan for the physical development of the city or county. The General Plan must be internally consistent, and it must contain implementation measures to ensure its compliance with all elements and policies.

There are seven mandated elements that must, by state law, be included in the General Plan: land use, circulation, housing, conservation, open space, noise and safety. The state also permits jurisdictions to adopt other elements, including but not limited to recreation, public services, scenic highways and historic preservation. California Government Code section 65302(a) mandates a land use element designating the proposed general distribution, general location, and extent of uses of the land. These state requirements are implemented through the Escondido General Plan and the Escondido Zoning Ordinance.

The City Council adopted the Escondido General Plan in June 1990 to guide the development and use of private and public lands within the community's boundaries. The Escondido General Plan Land Use Element designates the PEP site as Light Industrial. The Light Industrial land use designation provides for manufacturing, warehousing/distribution, assembling, and wholesaling (Escondido General Plan).

Goals and Objectives

The City has adopted a set of community goals and objectives as part of the General Plan. They provide the framework for establishing policies, standards, and guidelines for future growth in the City. The following Escondido General Plan goals are applicable to the PEP.

Goal 5: Encourage more high-quality industrial, retail, manufacturing, and service-oriented businesses that create and maintain a strong economic base and provide an environment for the full employment of a diverse set of skills.

A key objective of this goal, as it relates to the industrial sector, is to "value high technology, research and development, and various industrial uses as important integral parts of a sustainable economic base."

Goal 8: Preserve Escondido's natural and scenic resources

Relevant objectives of this goal are to "participate in efforts to attain state and federal air quality standards" and "to protect existing terrain, steep slopes, floodways, habitat areas and ridge lines, and to minimize visual impacts."

Goal 11: Provide a safe and healthy environment for Escondido residents

Relevant objectives include grading, drainage, and erosion control standards that "control surface runoff associated with new development while preserving natural resources," and "participate in local and regional programs to meet state and federal air quality standards."

Escondido Zoning Ordinance

While the General Plan designates the PEP site as Light Industrial, the site is zoned Specific Plan (SP) by the Escondido Zoning Code. Zoning Ordinance Article 18 Specific Plan (SP) Zone, section 33-393 specifies that permitted uses within the SP zone shall be fully defined through the adoption of a specific plan. General direction for permitted uses shall be established by the existing general plan designations. In addition, where the SP zone implements the "Specific Planning Area" (SPA) General Plan Overlay designation, permitted land uses shall be established in accordance with the policy direction provided in the Land Use Element text of the General Plan for that particular SPA. Zoning Ordinance Article 18 Specific Plan (SP) Zone, section 22-392 Development Regulations indicates that development standards for property zoned SP shall be established by a SP that shall be prepared and adopted pursuant to section 65450 of the Government Code. No property zoned SP can be developed without the adoption of a Specific Plan (Escondido Zoning Ordinance).

Escondido Research and Technology Center Specific Plan

The PEP site is also located within a Specific Plan (SP) land use and zoning designation, as identified by the Escondido General Plan and Zoning Ordinance. As stated in the Escondido General Plan Specific Planning Area Policy B7.1, Specific Planning Areas (SPAs) are intended for areas which require submittal of specific plans prior to development, as described in Government Code sections 65450 through 65507.

The PEP site was part of what was formerly designated by the General Plan as Specific Planning Area No. 8. Specific Planning Area No. 8, known as the Harmony Grove Specific Planning Area, or Quail Hills, was anticipated in the General Plan to be developed into "a high-quality industrial park, encouraging clean industrial uses to expand Escondido's industrial and employment base."

The Escondido Research and Technology Center Specific Plan (ERTCSP), adopted by the City of Escondido in November 2002, amended and superseded the 1988

Quail Hills Specific Plan. The ERTCSP provides for orderly and coordinated development of the overall 208-acre ERTC property consistent with Section 65451 of the California Government Code and Article 18 of the City of Escondido Zoning Ordinance. The ERTCSP is a comprehensive zoning document that regulates development of the specialized industrial and office uses which will be included within the proposed project area (ERTCSP 2001). The proposed PEP would be a component of the ERTC.

On November 25, 2002, the City Council of the City of Escondido adopted Resolution No. 2002-293(R), which included General and Specific Plan Amendments for the Escondido Research Technology Center (ERTC) and adopted Resolution No. 2002-307(R) certifying the Environmental Impact Report regarding the City's actions. The following actions were included under Resolution No. 2002-293(R):

1. General Plan amendment to change the Circulation Element of the General Plan to terminate Enterprise Street at the ERTC project boundary and adopt a Specific Plan of Alignment for Citracado Parkway that would modify Major Road standards within the project boundaries.
2. General Plan Amendments to change 22 acres of the 210 total acres from industrial (Specific Plan) to residential (Estate 2), and comprehensive revisions to the existing Specific Plan Area (SPA 8) Land Use Element Text.
3. A rezone of 22 acres of the 210 total acres of the project site from SP to RE-20 (Residential Estate, minimum 20,000 square feet).
4. A Vesting Tentative Subdivision Map on approximately 181 acres to create minimum one-acre lots, grading exemptions for maximum peripheral fill slopes of up to 110', peripheral cut slopes of up to 55', internal fill slopes of up to 60', internal cut slopes of up to 78', and slope inclinations of 1.5:1. Offsite improvements are proposed over the approximately 5.3 acre southern property owned by SDG&E.
5. A Development Agreement involving portions of the ERTC project (excluding the SDG&E parcels and the 2-acre radio transmission tower site) between the City and Developers. Key terms include a ten-year term, fee-waivers in return for other proposed payments and improvements, provision of reclaimed water, improvement responsibilities for roads and other utilities, a citywide electrical utility agreement, pursuit of local air quality offsets, grading prior to Final Subdivision Map, and automatic extensions of time for the Vesting Tentative Subdivision Map.
6. Potential relocation of the existing, on-site radio antenna to one of three possible locations (Planning areas 2, 3, and 5) and replacement of the existing power line towers with a lower profile design.
7. A 550 Megawatt, gas-fired, combined-cycle, electric generating facility (Palomar Energy Facility) is proposed as one of two options on 20 acres in the northeastern portion of the property.

8. Off-site improvements associated with the Palomar Energy Project, including the construction of a brine return line that would tie to a point of connection with the HARRF north of Escondido Creek, water and gas line upgrades, and off-site habitat mitigation. Traffic mitigation will consist of actual improvements as well as fair share contributions toward the future improvement of intersections and segments in the area.
9. A comprehensive revision that replaces the adopted Quail Hills Specific Plan involving approximately 188 acres.

NOISE AND VIBRATION

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 exposure levels 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 off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

STATE

California Government Code section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed in **NOISE Table 1**.

NOISE Table 1 - Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE - Ldn or CNEL (dB)													
	50		55		60		65		70		75		80	
Residential - Low Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Transient Lodging – Motel, Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

The State of California, Office of Noise Control, prepared a Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. The Model also contains a definition of a simple tone, or “pure tone,” in terms of one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. The Model Community Noise Control Ordinance further recommends

that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by five dBA.

Other State LORS include the California Environmental Quality Act (CEQA) and the 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. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, 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; or

d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

The Energy Commission staff, in applying item c) above to the analysis of this and other projects, has concluded that a potential for a significant noise impact exists where the noise of the project plus the background exceeds the background by five dBA L_{90} or more at the nearest sensitive receptor.

Staff considers it reasonable to assume that an increase in background noise levels up to 5 dBA in a residential setting is insignificant; an increase of more than 10 dBA is clearly significant. An increase between 5 and 10 dBA should be considered adverse, but may be either significant or insignificant, depending on the particular circumstances of a case.

Factors to be considered in determining the significance of an adverse impact as defined above include:

1. the resulting noise level. (A noise level of 40 dBA would be considered quiet in many locations. A noise limit of 40 dBA would be consistent with the recommendations of the California Model Community Noise Control Ordinance for rural environments, and with industrial noise regulations adopted by European jurisdictions. If the project would create an increase in ambient noise no greater than 10 dBA at nearby sensitive receptors, and the resulting noise level would be 40 dBA or less, the project noise level would likely be insignificant);

2. the duration and frequency of the noise;
3. the number of people affected;
4. the land use designation of the affected receptor sites and;
5. public concern or controversy as demonstrated at workshops or hearings, or by correspondence.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

1. the construction activity is temporary;
2. use of heavy equipment and noisy activities is limited to daytime hours; and
3. all industry-standard noise abatement measures are implemented for noise-producing equipment.

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 (**see NOISE Appendix A, Table A4**).

LOCAL

City of Escondido General Plan Community Protection and Safety Element

The Community Protection and Safety Element of the City of Escondido General Plan contains provisions and policies that are intended to minimize noise impacts to the community. Policy E1.2 of this Element states that the goal for outdoor noise levels in residential areas is 60 dB CNEL. Policy E1.4 states that the City shall enforce its noise ordinance to protect the noise environment in residential areas.

City of Escondido Municipal Code

The City of Escondido has adopted specific noise standards for stationary sources in Article XI, Sections 17-226 through 17-260 of the Municipal Code. The maximum permissible noise levels are described by **NOISE Table 2**.

NOISE Table 2 – City of Escondido Noise Standards

Zone	Time	Hourly Leq Limit, dBA
Residential	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
Multi-Residential	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
Commercial	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
Light Industrial	Anytime	70
General Industrial	Anytime	75

Each of the above standards is reduced by 10 dBA when applied to a steady audible sound such as a whine, screech, or hum, or to sound that contains a repetitive impulsive noise.

Sound levels may be measured at the property line of the receiving land use, or at any point within the boundary of the affected property.

Section 17-238 of the City of Escondido Municipal Code regulates noise from grading. Construction noise due to grading, compacting, drilling, rock crushing, bulldozing, clearing, digging, filling and blasting is exempt from the above noise standards between the hours of 7:00 a.m. to 6:00 p.m. on weekdays, and 10:00 a.m. to 5:00 p.m. on Saturdays. The equipment used for these activities may not be operated so as to exceed a one hour average sound level limit of 75 dBA at any time when measured at or within the property lines of a residential use.

Section 33-570(1) of the Zoning Regulations stipulates that no vibration which causes a public nuisance shall be discernable at the property line of the parcel in which the vibration-producing activity is located.

PUBLIC HEALTH

Federal

Clean Air Act section 112 (42 U.S. Code section 7412)

Section 112 requires new sources which emit more than ten tons per year of any specified hazardous air pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).

State

California Health and Safety Code sections 39650 et seq.

These sections mandate the California Air Resources Board (CARB) and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies. They also require that the new source review rule for each air pollution control district include regulations that require new or modified procedures for controlling the emission of toxic air contaminants.

California Health and Safety Code section 41700

This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

Local

San Diego Air Pollution Control District (SDAPCD) rule 1200(d)(i) requires safe exposure limits for Toxic Air Contaminants (TACs), use of Best Available Control Technology (BACT) and New Source Review (NSR).

RELIABILITY

Presently, the only law, ordinance, regulation or standard (LORS) that establishes either power plant reliability criteria or a procedure for attaining reliable operation is executive order D-23-01, which is a California Independent System Operator (CaISO) Generation Maintenance Program. *Maintenance Performance Standards and Criteria* identifies maintenance standards that generators are expected to perform to. These standards and assessment guidelines provide a benchmark against which Generating Asset Owners and CaISO can judge the adequacy of the maintenance programs being used at each generating facility.

The Energy Commission, however, 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)]. 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," focuses federal attention on the environment and human health conditions of minority communities and calls on agencies to achieve environmental justice as part of this mission. The 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 issue. The 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.

Civil Rights Act of 1964, Public Law 88-352, 78 Stat. Title VI of the Civil Rights Act prohibits discrimination on the basis of race, color, or national origin in all programs or activities receiving federal financial assistance.

STATE

California Government Code, Sections 65996 and 65997

Senate Bill 50 and other statutory amendments enacted in 1998 provide that, notwithstanding any other provisions of local or state law (including CEQA), state and local agencies may not require mitigation for the development of real property for effects on school enrollment except as provided by Government Code Section 65996(a). The relevant provisions restrict fees for the development of commercial and industrial space to approximately $0.31 per square foot of "chargeable covered and enclosed space" (Govt. Code 65995 (b)(2)).

California Environmental Quality Act Guidelines

In accordance with the California Environmental Quality Act Guidelines (§14 California Code of Regulations, Section 15131):

(a) Economic or social effects of a project shall not be treated as significant effects on the environment.

(b) Economic or social factors of a project may be used to determine the significance of physical changes caused by the project.

(c) Economic, social and particularly housing factors shall be considered by public agencies together with technological and environmental factors in deciding whether changes in a project are feasible to reduce and or avoid the significant effects on the environment.

LOCAL

City of Escondido

City of Escondido General Plan

The City of Escondido General Plan includes goals and policies that are meant to guide long term development within the community's boundaries and serve as a basis for decisions by elected and appointed officials. The following goals and policies are contained with the Community Goals and Objectives section of the Introduction of the Escondido General Plan.

Goal 5: Encourage more high quality industrial, retail, manufacturing and service oriented business that create and maintain a strong economic base and provide an environment for the full employment of a diverse set of skills (City of Escondido 1990).

Economic Policy B3.2: The City will encourage a variety of economic activities in Escondido that:

(a) diversify and balance the economic base and cushion the City's economy against a downturn in any one sector and against cyclical fluctuations;

(b) provide a broad spectrum of employment opportunities ranging from semi-skilled
to high technology positions;

(c) reduce the need for Escondido residents to commute out of the area;

(d) improve the City's fiscal stability;

(e) encourage all property development in office, commercial and industrial sectors to enhance property values;

(f) maintain workable and effective environmental regulations and standards; and

(g) provide support products and services for local businesses.

Escondido Research and Technology Center Specific Plan

The Escondido Research and Technology Center (ERTC) Specific Plan and a Final Environmental Impact Report were adopted by the City of Escondido in November 2002. It encompasses an area of approximately 208 acres of essentially vacant land located in western Escondido. The area is divided into ten planning areas, with planning area 1 allowing for developing either a light industrial park (Alternative A), or a power generating facility (Alternative B).

SOIL AND WATER RESOURCES

FEDERAL

Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. Section 1251 et seq.) was enacted with the intent of restoring and maintaining the chemical, physical, and biological integrity of the waters of the United States. The CWA requires states to set standards to protect, maintain, and restore water quality through the regulation of point source and certain non-point source discharges to surface water. Those discharges are regulated by the National Pollutant Discharge Elimination System (NPDES). In California, NPDES permitting authority is delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCBs).

Section 401 of the Clean Water Act requires that any activity that may result in a discharge into a water body must be certified by the Regional Water Quality Control Board so that the proposed activity will not violate state and federal water quality standards.

Section 403 of the Clean Water Act establishes responsibilities of Federal, State, and local government, industry and the public to implement National Pretreatment Standards to control pollutants which pass through or interfere with treatment processes in Publicly Owned Treatment Works or which may contaminate sewage sludge.

Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers (ACOE) to regulate the discharge of dredged or fill material to the waters of the U.S. and adjacent wetlands. The ACOE issues site-specific or general (Nationwide) permits for such discharges.

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. Those criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. Water quality criteria for the project area are contained in the Water Quality Control Plan for the San Diego Basin (1994 update to the *San Diego Region Basin Plan*). This plan sets numerical and/or narrative water quality standards controlling the discharge of wastes to the state's waters and land. Those standards are applied to the proposed project through the Waste Discharge Requirements permit.

California Water Code

Section 13552.6 of the California Water Code specifically identifies the use of potable domestic water for cooling towers, if suitable reclaimed water is available, as an unreasonable use of water. The availability of reclaimed water is determined by the SWRCB based on criteria listed in Section 13550. Those criteria include provisions that the quality and quantity of the reclaimed water are suitable for the use, the cost is reasonable, the use is not detrimental to public health, and will not impact downstream users or biological resources.

Section 13552.8 of the California Water Code states that any public agency may require the use of reclaimed water in cooling towers if reclaimed water is available, meets the requirements set forth in Section 13550, that there will be no adverse impacts to any existing water right, and that if public exposure to cooling tower mist is possible, appropriate mitigation or control is provided.

Title 22 of the California Code of Regulations

Under Title 22 of the California Code of Regulations, the California Department of Health Services (DHS) reviews and approves wastewater treatment systems to ensure they meet tertiary treatment standards allowing use of reclaimed water for industrial processes such as steam production and cooling water.

State pOLICIES

State Water Resources Control Board Resolution 75-58

The SWRCB has adopted policies that provide guidelines for water quality protection. The principal policy of the SWRCB that specifically addresses the siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling (adopted by the Board on June 19, 1975, as Resolution 75-58). This policy states that 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. This SWRCB policy requires that power plant cooling water should come from, in order of priority: 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. The policy also addresses cooling water discharge prohibitions such as land application.

LOCAL

City of Escondido

The City of Escondido, in accordance with Ordinance 95-8, requires that industrial dischargers obtain an Industrial User Permit, develop a Management Plan for toxic and prohibited organic chemicals, and complete a Baseline Monitoring Report. In addition, the power plant is subject to the wastewater pretreatment standards defined in 40 CFR Part 403 (general pretreatment standards) and Part 423 (categorical standard).

The City of Escondido requires Grading and Erosion Control (Chapter 33, Article 55) permits that include stormwater design standards and encroachment permits for construction of reclaimed water brine return, and natural gas pipelines.

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, sections 171 through 177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49, Code of Federal Regulations, sections 350 through 399, and Appendices A-G, Federal Motor Carrier Safety 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 rights-of-way. The California Health and Safety Code addresses the transportation of hazardous materials. Specific provisions include:

- California Vehicle Code, section 353 defines hazardous materials.
- California Vehicle Code, sections 31303 through 31309, regulates the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- California Vehicle Code, sections 31600 through 31620, regulates the transportation of explosive materials.
- California Vehicle Code, sections 32000 through 32053, regulates the licensing of carriers of hazardous materials and includes noticing requirements.
- California Vehicle Code, sections 32100 through 32109, establishes special requirements for the transportation of inhalation hazards and poisonous gases.
- California Vehicle Code, sections 34000 through 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, 34501.3, 34501.4, 34501.10, 34505.5-. 7, 34506, 34507.5 and 34510-11, regulates the safe operation of vehicles, including those which are used for the transportation of hazardous materials.
- California Health and Safety Code, sections 25160 et seq., addresses the safe transport of hazardous materials.
- California Vehicle Code, sections 2500 through 2505 authorizes 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 through 72, and California Vehicle Code sections 35780 et seq., require permits for the transportation of oversized loads on county roads.
- California Vehicle Code, section 35550 through 35559 imposes gross weight limits upon the highway by requiring that the wheels on any one axle of a vehicle shall not exceed 18,000 pounds, and the gross weight upon any one wheel, or wheels, supporting one end of an axle and resting upon the roadway, shall not exceed 9,500 pounds, except that the gross weight imposed upon the highway, by the wheels on any front steering axle of a motor vehicle, shall not exceed 12,500 pounds. The maximum allowable gross combination weight is 80,000 pounds.
- California Street and Highways Code, sections 660, 670, 1450, 1460 et seq., 1470, and 1480 regulates right-of-way encroachment and the granting of permits for encroachments on state and county roads.

In addition all construction within the public right-of-way must comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans, 1996).

Regional

Since the project site is located within San Diego County, San Diego County Association of Governments (SANDAG) standards and regulations are relevant. SANDAG has prepared a Year 2020 Regional Transportation Plan (RTP) that implements related federal regulations and establishes regional transportation goals, policies, objectives, and actions for various modes of transportation. The current RTP, adopted in 2000, is a long-range (20-year) plan that assesses the transportation impacts of proposed projects, establishes air quality conformity as required by federal regulations, and discusses intermodal and multimodal transportation activities.

SANDAG is required by federal law to develop and publish a Regional Transportation Improvement Program (RTIP) at least every two years. The RTIP is a short-range (four-year) program that incrementally implements the RTP. The RTIP consists of project lists from the State Transportation Improvement Program (STIP) for urbanized and non-urbanized areas, as well as other programs using state and/or federal funding. The current RTIP was adopted by SANDAG in July, 2002.

SANDAG is the designated Congestion Management Agency (CMA) for San Diego County under the 1990 Congestion Management Program (CMP). As the CMA, SANDAG must develop, adopt, and update the CMP for the region. SANDAG's

most current update of the CMP, completed in 1999, has been incorporated into the RTP. Implementation guidelines for the CMP have been developed jointly by the San Diego Traffic Engineer's Council (SANTEC) and the Institute of Transportation Engineers (ITE). The objective of the County's CMP is to ensure that enhanced capacity analysis is conducted on freeways and designated Regionally Significant Arterials (RSAs) in San Diego County, and that deficiency plans are developed to ensure that these facilities attain the minimum performance standard of Level of Service (LOS) D.

The Guidelines for Traffic Impact Studies in the San Diego Region (SANTEC/ITE, Final Draft, March 2, 2000) set LOS D as the minimum acceptable level of service for planning purposes. LOS E and F are considered unacceptable.

Local

The City of Escondido Circulation Plan and policies provide for the transportation needs of the community and subregion by implementing a circulation system, which provides a high level of mobility, efficiency, access, and safety for all modes and purposes of trips. These modes may include, but not be limited to, automobiles, trucks, buses, bicycles, pedestrian, and rail. The intent of this Circulation Plan is to insure that the siting and development of new facilities is coordinated with future population growth and provides a balanced mix of transportation resources to the community.

The City of Escondido Circulation Plan further specifies that the City shall provide adequate traffic safety measures on all new roadways and shall strive to provide adequate traffic safety measures on existing roadways subject to fiscal and environmental considerations. These measures may include, but not be limited to, appropriate levels of maintenance, proper street design, traffic control devices (signs, signals, striping), street lighting, and coordination with the school districts and other agencies.

The City's Circulation Plan calls for the reduction of the total number of vehicle trips through development and implementation of a Transportation Demand Management (TDM) program. This may include, but shall not be limited to, site-specific peak-hour traffic-management plans, requirements for ride sharing, encouragement of ride sharing in the public and private sector, provision for park-and-ride facilities adjacent to the regional transportation system, and support for transit subsidies.

The City of Escondido has adopted significance criteria for both signalized and unsignalized intersections. An impact is considered significant when the intersection level of service falls below mid-level LOS D (delay of 45.1 seconds or more for signalized intersections and 30.1 seconds or more for unsignalized intersections). If the intersection already operates at mid-LOS D or worse, a significant cumulative impact occurs if delay increases by more than two seconds for both signalized and unsignalized conditions. The objective of the Congestion Management Program is to ensure that enhanced capacity analysis is conducted on freeways and designated Regionally Significant Arterials (RSAs) in San Diego County, and that deficiency

plans are developed to ensure that these facilities attain the minimum performance standard of LOS D.

The City of Escondido does not have weight and load limits that apply to the city roadways in the study area. The local roadways affected by the Palomar Energy Project are subject to a weight limitation of 80,000 pounds per truck, per California Vehicle Code Section 35550, which is summarized in the State LORS section.

TRANSMISSION LINE SAFETY AND NUISANCE

The design-related laws, ordinances, regulations and standards (LORS) that are discussed below by subject area are those that govern the physical impacts of the overhead transmission lines in general and the proposed project line in particular. The Energy Commission assesses the potential for significance in terms of compliance with specific federal or state regulations or established industry standards and practices. There presently are no local laws or regulations specifically aimed at the physical structure or dimensions of electric power lines to limit the impacts noted above. However, many local jurisdictions require such lines to be located underground because of the potential for visual impacts on the landscape.

aviation safety

Any potential hazard to area aircraft would relate to the potential for collision in the navigable air space. The applicable federal LORS, as discussed below, are intended to ensure the distance and visibility necessary to prevent such collisions.

Federal

Title 14, Part 77 of the Code of Federal 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 proposed structure is located to avoid the aviation hazards of concern.

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.

These discussed LORS were applied to the SDG&E transmission line that the proposed project would tie into at the time the line was built.

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. Since electric fields are unable to penetrate most materials, including the soil, such interference and other electric field effects are not associated with underground

lines. The level of any 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 each proposed 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. These regulations were also applied at the time of construction to the existing SDG&E line that the proposed project line would tie into.

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 that 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 itself 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. SDG&E maintains a specific program in this regard for all its grid power lines.

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 into the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

Audible Noise

Industry Standards

As with radio-frequency noise, audible power line 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, especially in wet weather. There are no design-specific federal regulations to limit the audible noise

from transmission lines. As happens with radio noise, such noise is limited through design, construction, or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency maintainability and reliability. All modern overhead high-voltage lines (such as the one for this project) are designed to assure compliance. Since the noise level depends on the strength of the line electric field, the potential for perception can be assessed for each new line from estimates of the field strengths expected during operation. Such noise is usually generated during rainfall, but mainly from overhead lines of 345 kV or higher. It is, therefore, not generally expected at significant levels from those of less than 345 kV as proposed to be used for this project. 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

Nuisance shocks are electric shocks that result from 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 and are mitigated to reflect the differences in patterns of generation. There are no design-specific federal regulations to limit nuisance shocks in the transmission line environment. For the proposed project and all modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). Line owners such as SDG&E are usually responsible 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 along the route of each new line.

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 California Code of Regulation: “Fire Prevention Standards for Electric Utilities” specifies utility-related measures for fire prevention.

The requirements of these regulations are incorporated into the design of all SDG&E lines.

Hazardous Shocks

The hazardous shocks addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force within SDG&E and other utility service areas 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, California Code of Regulations, sections 2700 through 2974. "High Voltage Electric Safety Orders." These safety orders establish essential requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.

The requirements of these rules and orders were incorporated into the design of the proposed project line, as is standard SDG&E practice.

Industrial Standards

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within SDG&E and other utility service areas by 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 exposure

The possibility of deleterious health effects from electric and magnetic field (EMF) 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 describing exposure to them together as EMF exposure. The available evidence as evaluated by CPUC, other regulatory agencies, and staff, 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 recommend reduction of such fields as feasible without affecting safety, efficiency, reliability and maintainability.

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. The available evidence has not identified any potential health risk that justifies the retrofit of existing lines. The CPUC further required SDG&E and other electric utilities within its jurisdiction to prepare a specific guideline document listing the specific EMF-reducing measures that would be incorporated into the standard safety designs for all new or upgraded power lines and related facilities within their respective service areas. These reduction measures were derived from the same general approaches employed over the years within the industry to minimize the fields from all energized lines. The CPUC further established specific limits on the resources to be used in each case to reduce the intensity of the line fields in question. Such limiting requirements 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 CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013.

In keeping with this CPUC policy, staff requires a showing by each applicant that each new or modified overhead line would be designed to incorporate 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. Therefore, it is up to each applicant to ensure that such measures are applied in ways that prevent significant impacts on line operation and safety. The extent of such applications would be reflected by the ground-level field strengths as measured during operation. When estimated or measured for lines of similar voltage and current-carrying capacity, such field strength values can be used by staff and other regulatory agencies to assess the effectiveness of the applied reduction measures. These 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 support 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 by the CPUC to be designed to incorporate the EMF-reducing guidelines of the electric utility in the service area involved, its fields are required under this CPUC policy to be similar to fields from similar lines in that service area, given that such fields have not been established as posing a health hazard. If a new transmission had been proposed for this Palomar Energy Project, the applicable field-reducing guidelines would have been those of SDG&E. Incorporating such measures into the existing (standard) non field-related SDG&E safety designs would have constituted compliance with present CPUC requirements. With an existing SDG&E line, all such requirements have been met.

Industrial Standards

There are no health-based federal regulations or industry codes 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 health issue.

In the face of the present uncertainty, several states have opted for design-driven regulations, which, as with California's, are intended to ensure that fields from new lines are generally similar to those from existing lines of similar voltage and current-carrying capacity. It is for this reason that staff considers it appropriate for the existing 230 kV SDG&E line to be used without retrofit in connection with the proposed Palomar Project. 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, as do the CPUC and staff, 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 themselves as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate soil, building and other 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 overhead 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 around high-voltage power lines.

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 and underground lines. Compliance with these orders ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
- California Public Utilities Commission (CPUC) General Order 128 (GO-128), "Rules for Construction of Underground Electric Supply and Communications Systems," formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.
- The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
- The North American Reliability Council (NERC) and Western Systems Coordinating Council (WSCC) Planning Standards have been merged and now are referred to as the "NERC/WSCC Planning Standards." These standards provide the system performance standards used in assessing the reliability of the interconnected system. Certain aspects of the NERC/WSCC standards are either more stringent or more specific than the NERC standards. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WSCC system is based, to a large degree, on Section I.A of the standards, "NERC and WSCC Planning Standards with Table I and WSCC Disturbance-Performance Table" and on Section I.D, "NERC and WSCC Standards for Voltage support and Reactive Power." These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) to levels designed to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines in a right of way and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WSCC 2001).

- Cal-ISO Grid Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the Cal-ISO transmission grid facilities. The Cal-ISO Grid Planning Standards incorporate the WSCC and NERC Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to the combined WSCC and NERC Planning Standards for Transmission System Contingency Performance. However, the Cal-ISO Standards also provide some additional requirements that are not found in the WSCC or NERC Planning Standards. The Cal-ISO Standards apply to all participating transmission owners interconnecting to the Cal-ISO controlled grid. They also indirectly apply when there are any impacts to the Cal-ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the Cal-ISO (Cal-ISO 2002a).

VISUAL RESOURCES

The following discussion of federal, state, and local laws, ordinances, regulations, and standards is based on Section 5.10.3 of the Application for Certification (Palomar 2001a, pp. 5.10-21 and 22 and 6-25 and 26) and a review of the *Escondido Research and Technology Center Specific Plan* (City of Escondido 2002).

FEDERAL

The proposed project is located on private land. Therefore, the project is not subject to federal regulations pertaining to visual resources.

STATE

In the project vicinity, no roads or highways are either designated or eligible for State Scenic Highway status (Caltrans 2002) and no other State LORS apply.

LOCAL

The proposed project would be subject to LORS of the City of Escondido. Specifically, the project would be located within the jurisdiction of the Escondido Research and Technology Center Specific Plan (formerly the Quail Hills Specific Plan) which the Escondido City Council has recently adopted. Relevant local LORS and an assessment of the project's LORS consistency are presented in a later section of this analysis.

WASTE MANAGEMENT

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 that 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 U.S. Environmental Protection Agency (EPA) or authorized state agency.

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 Section 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 14, California Code of Regulations, Section 17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)

These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.

Title 22, California Code of Regulations, Section 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.

Title 22, California Code of Regulations, Section 67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)

These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.

LOCAL

The County of San Diego Department of Environmental Health is the local Certified Unified Program Authority (CUPA) administering and enforcing compliance with the California Integrated Waste Management Act for non-hazardous solid waste at the proposed power project.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970 Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act of 1970. This Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, sections 651 through 678. Implementing regulations are codified at Title 29 of the Code of Federal Regulations, under General Industry Standards sections 1910.1 to 1910.1500 which clearly define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the general industry safety and health standards now in force under this act represent a compilation of materials 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 purpose of the Occupational Safety and Health Act is to "assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651). The Federal Department of Labor promulgates and enforces safety and health standards that are applicable to all businesses affecting interstate commerce. The Department of Labor established the Occupational Safety and Health Administration (OSHA) in 1971 to discharge the responsibilities assigned by this act.

Verification:

Applicable Federal requirements include:

- 29 U.S. Code section 651 et seq. (Occupational Safety and Health Act of 1970);
- 29 CFR sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations); and
- 29 CFR sections 1952.170 to 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 §§1910.1 to 1910.1500).

STATE

California passed the Occupational Safety and Health Act of 1973 ("Cal/OSHA") as published in the California Labor Code section 6300. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with sections 337 to 560 and continuing with sections 1514 through 8568. The California Labor Code requires that the Cal/OSHA Standards Board adopt standards at least as effective as the federal standards (Labor Code § 142.3(a)) and thus all Cal/OSHA health and safety standards 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 sections 1910.1 to 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 is charged with responsibility for administering the Cal/OSHA plan. The Department of Industrial Relations is further split into six divisions to oversee, among other activities, 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 (Labor Code § 6408). Cal/OSHA's principal tool in ensuring that workers and the public are informed is the Hazard Communication standard first adopted in 1981 (8 CCR §5194). This regulation was promulgated in response to California's Hazardous Substances Information and Training Act of 1980. It was later revised to mirror the Federal Hazard Communication Standard (29 CFR §1910.1200), which established on the federal level an employee's "right to know" about chemical hazards in the workplace, but added the provision of applicability to public sector employers. A major component of this regulation is the required provision of Material Safety Data Sheets (MSDSs) to workers. MSDSs provide information on the identity, toxicity, and precautions to take when using or handling hazardous materials in the workplace.

Finally, 8 CCR section 3203 requires that employers establish and maintain a written Injury and Illness Prevent Program to identify workplace hazards and communicate them to its employees through a formal employee-training program.

Applicable State requirements include:

- 8 CCR section 339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act;
- 8 CCR section 337, et seq. - Cal/OSHA regulations;
- 24 CCR section 3, et seq. - incorporates the current addition of the Uniform Building Code;
- Health and Safety Code section 25500 et seq. - Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at the facility; and
- Health and Safety Code sections 25500 to 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 section 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.

NFPA standards are published in the California Uniform Fire Code (Cal. Code Regs., tit. 24, part 9). 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.

Similarly, the Uniform Fire Code (UFC) 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. The City of Escondido adopted the 1997 Uniform Fire Code, with California amendments. The City of Escondido Fire Department administers the UFC.

Applicable local (or locally enforced) requirements include:

- 1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9);
- California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.); and
- Uniform Fire Code, 1997.

Appendix B

Proof of Service List

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

IN THE MATTER OF:	**DOCKET NO. 01-AFC-24**
APPLICATION FOR CERTIFICATION FOR THE PALOMAR ENERGY PROJECT	**PROOF OF SERVICE** *(REVISED 3/18/03)*

I, NAME, declare that on **DATE**, I deposited copies of the attached **DOCUMENT TITLE** in the United States mail at *Sacramento, CA* 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. 01-AFC-24
1516 Ninth Street
Sacramento, CA 95814-5512

* * * *

Also send copies of all documents to:

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Revisions to POS List, i.e. updates, additions and/or deletions.

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I declare under penalty of perjury that the foregoing is true and correct

_____
[signature]

Revisions to POS List, i.e. updates, additions and/or deletions.

* * * *

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:

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***Revisions to POS List, i.e. updates, additions and/or deletions**.

Appendix C

Exhibit List

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

APPLICATION FOR CERTIFICATION OF THE PALOMAR ENERGY PROJECT BY PALOMAR ENERGY LLC	**DOCKET NO. 01-AFC-24** DATA ADEQUATE FEBRUARY 6, 2002

EXHIBIT LIST

EXHIBIT 1: Application for Certification for the Palomar Energy Project Volume I, and Volume II (Appendices), docketed on November 28, 2001, and Volume III (Supplement to AFC), docketed February 5, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2A: Palomar Energy's responses to CEC Staff data requests #1-117, docketed April 8, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2B: Palomar Energy's responses to CEC Staff data requests #29-35 (Historical Architectural Survey), docketed April 9, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2C: Palomar Energy's responses to CEC Staff data requests #65-69, docketed April 17, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2D: Palomar Energy's responses to CEC Staff data requests #14, 49-51, 53 -55, 81-85, 102, 107, docketed May 8, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2E: Palomar Energy's supplemental responses to CEC Staff data request #25, docketed June 19, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 2F: Palomar Energy's supplemental responses to CEC Staff data request #110, docketed July 23, 2002. Sponsored by Applicant and received into evidence on April___, 2003.

EXHIBIT 2G: Palomar Energy's supplemental responses to CEC Staff data request #16, docketed September 4, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 3A: Palomar Energy's responses to CEC Staff data requests #118 to 135, docketed June 3, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 3B: Palomar Energy's supplemental responses to CEC Staff data requests #120-122, docketed June 19, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 4A: Palomar Energy's responses to CEC Staff data requests #136a-146, docketed June 24, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 4B: Palomar Energy's supplemental responses to CEC Staff data request #145, docketed June 26, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 5A: Palomar Energy's objections to data requests filed by Bill Powers (Set Nos. One, Two and Three), docketed September 20, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 5B: Palomar Energy's responses to Bill Powers' data requests Set Nos. One and Two, docketed October 9, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 5C: Palomar Energy's responses to Bill Powers' data requests Set No. Three, docketed October 17, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 6: Palomar Energy's Confidential Designation, Cultural Resources Report, Appendix B, docketed November 28, 2001. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 7: Detailed Facilities Study and Appendices A.1 through J, docketed February 14, 2002. Sponsored by Applicant and received into evidence on April 8, 2003.

EXHIBIT 8: Historical Architectural Survey for the ERTC, docketed April 9, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 9: Detailed Facilities Study, Appendix I, docketed April 17, 2002. Sponsored by Applicant and received into evidence on April 8, 2003.

EXHIBIT 10: Palomar Energy submittal of U.S. Geological Survey report, docketed April 29, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 11: Palomar Energy's Technical Work Plan, docketed May 15, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 12: Letter from Palomar Energy to California Energy Commission, docketed May 21, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 13: Letter from California ISO to Sempra Energy Resources, docketed June14, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 14: Palomar Energy's Preliminary Assessment Shallow Subsurface 6-Acre Portion, docketed June 28, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 15: Memorandum of Understanding between the CEC, City of Escondido and Palomar Energy, docketed August 5, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 16: Palomar Energy's Response to Petition from Bill Powers for Committee Workshop on the Subject of Alternative Cooling Options, docketed October 2, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 17: Palomar Energy's PM_{10} CEQA Mitigation Plan, docketed October 15, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 18: Palomar Energy's Emissions Reductions Calculations, docketed November 6, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 19: San Diego Gas & Electric Analysis, docketed November 8, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 20: Palomar Energy's submittal concerning Advantages and Disadvantages of Wet and Drying Cooling Systems, docketed November 13, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 21: Resolutions of the City Council of the City of Escondido Approving the ERTC Specific Plan, and Certifying the ERTC Final EIR/Approving the ERTC Mitigation Monitoring Program, docketed December 2, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 22: City of Escondido's Final Environmental Impact Report for ERTC Specific Plan, docketed December 6, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 23: Palomar Energy's response to Bill Powers' December 2, 2002 submittal regarding Plant Cooling Systems, docketed December 23, 2002. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 24: City of Escondido ERTC Specific Plan Mitigation Monitoring and Reporting Program, docketed January 6, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 25: Palomar Energy's Letter Concerning Native American Monitors, docketed January 8, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 26: Letter from San Diego County Water Authority supporting Palomar Energy's use of recycled water, docketed January 8, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 27: Cal-ISO Report regarding Transmission System Reliability: Palomar Energy Project (PEP), docketed on January 24, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 28: U.S. Fish and Wildlife Service, ERTC Biological Opinion; California Department of Fish and Game, ERTC Streambed Alteration Agreement; collateral approvals by U.S. Army Corps of Engineers and Regional Water Quality Control Board, docketed March 7, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 29: Regional Water Quality Control Board, Receipt of Notice of Intent regarding Stormwater Discharge, docketed March 7, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 30: Letter from the San Diego Air Pollution Control District, dated March 5, 2003, to Susan Gefter, California Energy Commission, regarding the Palomar Energy Project; District Application No. 976846, docketed March 10, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 31: Applicant's Prehearing Conference Statement, docketed March 6, 2003. Sponsored by Applicant and received into evidence on April_____, 2003.

EXHIBIT 32: Cultural Resources Survey for the ERTC Specific Plan Area, revised March 2002, docketed June19, 2002. Sponsored by Applicant and received into evidence on April_____, 2003.

EXHIBIT 33: Escondido Research and Technology Center Specific Plan, docketed December 9, 2002. Sponsored by Applicant and received into evidence on April_____, 2003.

EXHIBIT 34: Letter from Alberto Abreu, Sempra Energy Resources, dated March 26, 2003, to Mike Lake, San Diego Air Pollution Control District regarding additional ERC's for Palomar Energy Project, docketed March 26, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 35: Applicant's pre-filed testimony, docketed March 26, 2003. Sponsored by Applicant and received into evidence on April ___, 2003.

EXHIBIT 36: Palomar Energy's Comments on CEC Preliminary Staff Assessment on Palomar Energy Project, docketed September 27, 2002. Sponsored by Applicant and received into evidence on April__, 2003.

EXHIBIT 37: Palomar Energy's CDs containing computer files relating to analyses presented in Palomar Energy's prefiled testimony, docketed April 2, 2003. Sponsored by Applicant and received into evidence on April___, 2003.

EXHIBIT 38: Palomar Energy's Rebuttal Testimony, docketed April 4, 2003. Sponsored by Applicant and received into evidence on April__, 2003.

Exhibit 50: Final Staff Assessment, dated January 25, 2003, which includes, by reference, the documents referred to therein, docketed on January 28, 2003. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 51: Addendum to Staff Assessment, dated March 7, 2003, docketed on March 7, 2003. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 51A Modifications to Exhibit 51 Conditions of Certification TRANS-6 and TRANS-8, docketed on April 10, 2003. Sponsored by Staff and received into evidence on April 8, 2003.

Exhibit 52: Final Determination of Compliance, dated December 6, 2002, for the Palomar Energy Center, docketed on December 6, 2002. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 53: Supplement to Final Determination of Compliance Concerning Prevention of Significant Deterioration (PSD) Requirements, dated February 27, 2003, docketed on February 27, 2003. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 54: February 27, 2003 letter from Gerardo C. Rios, Chief, Permits Office, Air Division, United States Environmental Protection Agency Region IX to Mike Lake, Sand Diego County Air Pollution Control District., docketed on February 27, 2003. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 55: February 27, 2003 letter from Haissam Y. Salloum, P.E., Department of Toxic Substances Control to Bob Eller, docketed on February 27, 2003. Sponsored by Staff and received into evidence on April ___, 2003.

Exhibit 56: Addendum #2 to Staff Assessment, dated March 24, 2003, docketed on March 24, 2003. Sponsored by Staff and received into evidence on April ___, 2003

EXHIBIT 70: Six-minute documentary of Crockett Cogen ultra-low noise fans in operation. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 71: Slides of height-optimized air-cooled condensers (ACC) and plume from plume abatement cooling tower. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 72: San Pasqual Valley Water Resources Management Plan, City of San Diego Water Department, 1997. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 73: Reclaimed Water Avocado Grove Demonstration Program, County Agricultural Extension, 1997. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 74: Comments on February 2002 CEC/EPRI Cooling Alternatives Report, Powers Engineering, March 2003. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 75: Cease and Desist Order No. 96-31 for City of San Diego. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 76: Order No. 98-10 NPDES No. CA0108944. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 77: Feb. 19, 2003 SWRCB review of SWRCB reclaimed water loans to City of Escondido. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 78: SWRCB Loan No. C-06-4156-110,-111,-112. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 79: SWRCB Loan No. C-06-4156-310, -311. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 80: Bureau of Reclamation webpage, Southern California Comprehensive Water Reclamation and Reuse Study, www.lc.usbr.gov/scao/sccwrrs2.htm. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 81: Bureau of Reclamation webpage, Escondido Regional Water Reclamation Program, www.lc.usbr.gov/scao/escondi2.htm. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 82: California Energy Commission, Water Suppy Issues Workshop Summary, June 5, 2001. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 83: Bureau of Reclamation, Federal Grant No. 1425-5-FG-30-00370 for Escondido Water Reclamation Project, May 1999. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 84: City of Escondido Wastewater, HARRF Improvements/Water Reclamation and Reuse Program, www.ci.escondido.ca.us/publicworks/util/wstwtr/improv.html. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 85: CEC, Energy Commission Decision – Sutter Power Plant Project, Docket No. 97-AFC-2, April 1999, pg. 268-269. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 86: Telephone call record, Paul Gagliardo, Manager, Water Research and Development, San Diego Water Department, February 2002. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 87: CEC, Presiding Member's Proposed Decision – East Altamont Energy Center, Docket No. 01-AFC-4, January 2003. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 88: Palomar Energy Project (01-AFC-24) Response to Bill Powers Dec. 2, 2002, Dec. 23, 2002. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 89: Border Power Plant Working Group, Palomar Energy Project (01-AFC-24) Response to Sempra Energy Nov. 12, 2002 Submittal, Dec. 2, 2002. Docketed on January 9, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 90: Palomar Energy Project (01-AFC-24) Information Concerning Cooling Systems, Nov. 12, 2002. Docketed on November 14, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 91: Bill Powers, Presentation on Alternative Cooling Options, Oct. 22, 2002 (PowerPoint). Docketed on October 24, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 92: Palomar Energy Project (01-AFC-24), Data Responses to Bill Powers, Oct. 9, 2002. Docketed on October 12, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 93: Border Power Plant Working Group, Palomar Energy Project, Docket No. 01-AFC-24, Committee Workshop on Alternative Cooling Options Prior to Completion of the FSA, Sept. 25, 2002. Docketed on September 26, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 94: Bill Powers, Petition for Committee Workshop on the Subject of Alternative Cooling Options, Aug. 28, 2002. Docketed on September 26, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 95: Powers Engineering, Docket No. 01-AFC-24, Powers Engineering Comments on July 17, 2002 Sempra Energy Evaluation of Dry Cooling as an Alternative to Evaporative Cooling for the Proposed Palomar Energy Project, Aug. 7, 2002. Note – *[includes text of Sempra Energy evaluation of dry cooling submitted to San Diego Air Pollution Control District on July 17, 2002 (via e-mail)].* Docketed on August 10, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 96: Powers Engineering, Docket No. 01-AFC-24, Request that the CEC Prepare Alternative Cooling Systems Evaluation for the Proposed Palomar Energy Project, Aug. 7, 2002. Docketed on August 10,

2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 97: Powers Engineering, Docket No. 01-AFC-24, Description of Alternative Uses for Reclaimed Water Currently Proposed as Cooling Water for Proposed Palomar Energy Project, Aug. 6, 2002. August 10, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 98: Powers Engineering, Review of April 16, 2002 Palomar Energy Letter to District Regarding April 5, 2002 District Request for Additional Information on Palomar Energy Project No. 976846, May 27, 2002. Docketed on May 30, 2002. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 99: Water Infrastructure Network, "Clean and Safe Water for the 21st Century." Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 100: Cooling Technology Institute, Guideline: Best Practices for Control of Legionella, February 2000. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 101: William R. Stockwell, et al, "The Ammonium Nitrate Particle Equivalent of NO_x Emissions for Wintertime Conditions in Central California's San Joaquin Valley," Atmospheric Environment, February 2000. Docketed on April 8, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 102: Border Power Plant Working Group, Palomar Energy Project, Docket No. 01-AFC-24, Comments for February 7, 2003 Workshop on Air Quality and Visual Resources Issues Raised in FSA, February 5, 2003. Docketed on February 10, 2003. Sponsored by Intervenor and received into evidence on April _____, 2003.

EXHIBIT 103:

EXHIBIT 104:

EXHIBIT 105:

EXHIBIT 106:

EXHIBIT 107:

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
ABM	Anti-Ballistic Missle
AC	alternating current air conditioning
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
ADT	Average Daily Traffic
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
AWS	American Welding Society

B

BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
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
BHP	British Horse Power
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
BTA	Best Technology Available
Btu	British thermal unit

C

CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CAL/OSHA	California Occupational Safety and Health Administration
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CBO	Chief Building Official
CCAA	California Clean Air Act
CCC	California Coastal Commission
CDF	California Department of Forestry

CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEC	California Energy Commission
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
CMDP	Court Mandated Demonstration Project
CNEL	Community Noise Equivalent Level
CNG	Compressed Natural Gas
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
DFS	Detailed Facilities Study
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
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
FDMP	Fugitive Dust Mitigation Plan
FDOC	Final Determination of Compliance
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
HEP	Habitat Enhancement Program
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
NCR	Non Compliance Report
NDT	Non-Distructive Testing
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
NOAA	National Oceanic & Atmospheric Administration
NOI	Notice of Intention
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 proportionate mortality
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
ppmvdc	parts per million by volume, corrected
ppt	parts per thousand
PMPD	Presiding Member's Proposed Decision
PRC	California Public Resources Code
PSA	Preliminary Staff Assessment
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
QAQR	Quarterly Air Quality Report
QF	Qualifying Facility

R

RACT	Reasonably Available Control Technology
RAS	Remedial Action Scheme
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
SIS	System Impact Study
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SLOAQMD	San Luis Obispo 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
SPS	Special Protection Scheme
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
TMDL	total minimum daily load
TOG	total organic gases
TOU	Time of Use Rates
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