CALIFORNIA
ENERGY
COMMISSION

LODI ENERGY CENTER

Application For Certification (08-AFC-10)
San Joaquin County

FINAL COMMISSION DECISION

APRIL 2010
(08-AFC-10)
CEC-800-2010-003-CMF

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CALIFORNIA ENERGY COMMISSION

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

KAREN DOUGLAS
Presiding Committee Member

JEFFREY BYRON
Associate Committee Member

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Hearing Officer

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Commissioner

ROBERT WEISENMILLER, Ph.D
Commissioner

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

APPLICATION FOR CERTIFICATION FOR THE ***LODI ENERGY CENTER*** **NORTHERN CALIFORNIA POWER AGENCY**	**DOCKET NO. 08-AFC-10** **ORDER NO. 10-0421-02**

COMMISSION ADOPTION ORDER

This Commission Order adopts the Commission Decision on the ***LODI ENERGY CENTER*.** It incorporates the Presiding Member's Proposed Decision (PMPD) in the above-captioned matter and the Committee Errata. The Commission Decision is based upon the evidentiary record of these proceedings and considers the comments received at the April 21, 2010, business meeting. The text of the attached Commission Decision contains a summary of the proceedings, the evidence presented, and the rationale for the findings reached and Conditions imposed.

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

FINDINGS

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

1. The ***LODI ENERGY CENTER*** will provide a degree of economic benefits and electricity reliability to the local area.

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

3. Implementation of the Conditions of Certification contained in the accompanying text will ensure protection of environmental quality and assure reasonably safe and reliable operation of the facility. The Conditions of Certification also assure that the project will neither result in, nor contribute substantially to, any significant direct, indirect, or cumulative adverse environmental impacts.

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

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

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

7. The evidence of record does not establish the existence of any environmentally superior alternative site.

8. The evidence of record establishes that an environmental justice screening analysis was conducted and that the project, as mitigated, will not have a disproportionate impact on low-income or minority populations.

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

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

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

ORDER

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

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

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

3. This Decision is adopted, issued, effective, and final on April 21, 2010.

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

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

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

7. This Decision licenses the project owner to commence construction on the project within five years of this Decision date. Subject to the provisions of California Code of Regulations, title 20, section 1720.3, this license expires by operation of law when the project's start-of-construction deadline passes with no construction.

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

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

10. We order that the Application for Certification docket file for this proceeding be closed effective the date of this Decision, with the exception that the docket file shall remain open for 30 additional days solely to receive material related to a petition for reconsideration of the Decision.

Dated: April 21, 2010, at Sacramento, California.

Original Signed By:

KAREN DOUGLAS
Chairman

- Absent -

JAMES D. BOYD
Vice Chair

Original Signed By:

JEFFREY D. BYRON
Commissioner

Original Signed By:

ANTHONY EGGERT
Commissioner

Original Signed By:

ROBERT B. WEISENMILLER
Commissioner

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INTRODUCTION

A. SUMMARY OF THE DECISION

This Decision contains the Commission's rationale in determining that the Lodi Energy Center (LEC) will, as mitigated, have no significant impacts on the environment and complies with all applicable laws, ordinances, regulations, and standards (LORS). The project may therefore be licensed. This Decision 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 LEC is designed, constructed, and operated in the manner necessary to protect public health and safety, promote the general welfare, and preserve environmental quality.

On September 10, 2008, the Northern California Power Agency (NCPA) submitted an Application for Certification (AFC) to the California Energy Commission to construct and operate an electrical generating plant in the City of Lodi, San Joaquin County, California. The LEC will be a natural gas-fired, combined-cycle nominal 296 megawatt (MW) power generation facility. The project will be located on 4.4 acres of land owned and incorporated by the City of Lodi, 6 miles west of the Lodi city center, near Interstate 5 approximately 1.7 miles south of State Route 12, approximately 2 miles north of the city of Stockton. The project site is currently undeveloped and used for equipment storage. (Ex. 300, p. 3-2)

The project is a combined-cycle generating plant consist of the following components: (1) One natural gas-fired Siemens STGS-5000F combustion turbine-generator (CTG), with an evaporative cooling system and dry low-NO_x combustors to control air emissions; (2) one 3-pressure heat recovery steam generator (HRSG), (3) a selective catalytic reduction (SCR) and carbon monoxide (CO) catalyst to further control NO_x and CO emissions, respectively; (4) one Siemens SST-900RH condensing steam turbine generator (STG); (5) one natural gas-fired auxiliary boiler; (6) one 7-cell draft evaporative cooling tower; and (7) associated support equipment. (Ex. 300, p. 3-2)

[1] The Reporter's Transcript of the evidentiary hearings is cited as "date of hearing RT page __." For example: 1/28/10 RT 77. The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in **Appendix B** of this Decision.

On the east side of the site is the City's White Slough Water Pollution Control Facility (WPCF) whose treatment and holding ponds are located to the north. An existing generating plant (49 MW Northern California Power Agency Combustion Turbine Project #2 known as the "STIG" plant) is located to the west with a 230-kV PG&E overhead electrical transmission line aligned further to the west. (*Id*.)

Cooling and process water for the LEC will be recycled water provided by the City of Lodi's WPCF. Cooling tower blow down water will be disposed of using a new Class I underground injection well, and as a result, no process wastewater will be discharged from the plant. A new, approximately 1100 foot 230-kV line will be constructed to transmit the plant output to the electrical grid via the existing 230-kV switchyard adjacent to the existing plant. Additionally, a new 2.7 mile-long gas line will be built parallel to the existing natural gas pipeline to provide fuel to the site. (Ex. 300, p. 3-3.)

The Energy Commission has exclusive jurisdiction to license this project and is considering the proposal under a twelve-month review process established by Public Resources Code, section 25540.6.

The capital costs for the LEC are approximately $298 million, with the total construction payroll estimated at $26.8 million. If approved, construction of the project will begin in early 2010 and will last for approximately 24-months. Pre-operational testing of the facility will begin in the fourth quarter with full-scale commercial operation commencing in early 2012. (Ex. 300, p. 3-3.)

The available workforce in the Stockton Metropolitan Statistical Area (MSA) will be adequate to fulfill LEC's construction labor requirements. (Ex. 300, 4.8-7.) Sixty percent of the construction workforce will come from within San Joaquin County, with the remaining workforce to be drawn from other nearby counties especially those in the San Francisco Bay Area or from out of state. (Ex. 1.)

There will be an average of approximately 168 daily construction workers, with a peak daily workforce of 305 during month 16 of construction. Operation of the LEC is expected to employ a total of five to seven full-time employees who are expected to maintain their existing residences within the study area labor force. Due to the large labor force located within the Stockton MSA, it is assumed that the new employees required for the LEC will be found locally. (Ex. 1, pp. 5.10-13 and 5.10-14.)

No significant adverse socioeconomics impacts will occur as result of the construction or operation of the LEC project. The evidence indicates that the LEC will not cause a significant adverse direct, indirect, or cumulative impact on population, employment, housing, public finance, local economies, or public services. The LEC will benefit the study area in terms of an increase in local expenditures and payrolls during construction and operation of the facility. These activities will have a positive effect on the local and regional economy. (Ex. 300, p. 4.8-12.)

B. SITE CERTIFICATION PROCESS

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

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

The Commission's process allows for and encourages public participation so that members of the public may become involved either informally or on a formal level as intervenor parties who have the opportunity to present evidence and cross-examine witnesses. Public participation is encouraged at every stage of the process.

The process begins when an Applicant submits an AFC. Commission staff reviews the data submitted as part of the AFC and makes a recommendation to the Commission on whether the AFC contains adequate information to begin the certification process. After the Commission determines an AFC contains sufficient analytic information, it appoints a Committee of two Commissioners to conduct the formal licensing process. This process includes public conferences

and evidentiary hearings, where the evidentiary record is developed and becomes the basis for the Presiding Member's Proposed Decision (PMPD). The PMPD determines a project's conformity with applicable laws, ordinances, regulations, and standards and provides recommendations to the full Commission.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed Project and obtaining necessary technical information. During this time, the Commission staff sponsors public workshops at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of the Project in its Staff Assessment (SA), which is made available for a 30-day public comment period.

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

The Committee's analysis and recommendations appear in the PMPD, which is available for a 30-day public comment period. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, the Revised PMPD triggers an additional public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process, members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal intervenors, function independently with equal legal status. An "ex parte" rule prohibits parties in the case, or other persons with an interest in the case, from communicating on substantive matters with commissioners, the committee, their staffs and advisors, or the assigned hearing officer unless these communications are made on the public record. The

Office of the Public Adviser is available to assist the public in participating in all aspects of the certification proceeding.

C. PROCEDURAL HISTORY

Public Resources Code, sections 25500 et seq. and Energy Commission regulations (Cal. Code Regs., tit. 20, § 1701, et seq.) mandate a public review process and specify the occurrence of certain procedural events in which the public may participate. The key procedural events that occurred in the present case are summarized below.

On September 10, 2008, the Northern California Power Agency (NCPA) submitted an Application for Certification (AFC) to the California Energy Commission to construct and operate an electrical generating plant in the City of Lodi, San Joaquin County, California. On November 20, 2008, the Energy Commission deemed the AFC data adequate (sufficient data to proceed) and assigned a Committee of two Commissioners to conduct proceedings.

The Energy Commission staff sent notification letters, copies of the AFC and Supplement, for the LEC to a comprehensive list of libraries and public agencies. A Notice of Receipt letter was also sent to businesses organizations and residences located within 1,000 feet of the project and 500 feet of the linear facilities. The Energy Commission staff's notification letter requested public and agency review, comment, and continued participation in the Energy Commission's certification process. The only parties to the proceedings included the Applicant and the Energy Commission staff (Staff). There were no intervenors.

On November 26, 2008, the Committee issued a Notice of "Informational Hearing and Site Visit". The Notice was mailed to local agencies and members of the community who were known to be interested in the project, including the owners of land adjacent to or in the vicinity of the project. In addition to property owners and persons on the general project mail-out list, notification was provided to local, state, and federal public interest and regulatory organizations with an expressed or anticipated interest in this project.

On January 15, 2009, the Committee conducted a Site Visit to tour the LEC Project site and then convened a public Informational Hearing at the Hutchins Street Square in the City of Lodi. At that event, the Committee, the parties, interested governmental agencies, and other public participants discussed issues

related to development of the LEC project, described the Commission's review process, and explained opportunities for public participation. On January 22, 2009, the Committee issued the Scheduling Order for the proceedings.

Staff conducted a Data Response and Issue Resolution workshop on February 23, 2009, in the city of Lodi and discussed the topics of air quality, cultural resources, land use, visual resources, and soils and water resources. Participating agencies included the Applicant and the city of Lodi. In addition to this workshop, coordination occurred with numerous other local, state and federal agencies that have an interest in the project including the city of Lodi, San Joaquin County of Governments (SCOG), San Joaquin Valley Air Pollution Control District, California Department of Toxic Substances Control, California Department of Transportation, District 10, and U.S. Fish and Wildlife Service (USFWS).

On November 19, 2009, the Committee held a Status Conference, in order to assist the Committee and participants in understanding the process and expectations.

The Staff Assessment (SA) was published on November 30, 2009. The Staff provided notification by letter and held a SA Workshop on December 14, 2009 in Sacramento.

On November 24, 2009, the Committee issued a Notice of Prehearing Conference and Evidentiary Hearing. The prehearing conference was held on January 5, 2010. Evidentiary hearings were held on January 5 and 28, 2010, both at the Energy Commission headquarters in Sacramento.

The Committee published the PMPD on March 10, 2010. The 30-day comment period on the PMPD expired on April 12, 2010. An Errata was then created and distributed to the parties and was adopted along with the PMPD at a full Commission Business Meeting held on April 21, 2010. The Final Commission Decision was published on April 28, 2010.

D. PUBLIC COMMENT

The record contains public comments from concerned individuals and organizations. Throughout these proceedings, as reflected in the transcribed record, the Committee provided an opportunity for public comment at each Committee-sponsored conference and hearing.

I. PROJECT DESCRIPTION AND PURPOSE

On September 10, 2008, Northern California Power Agency (NCPA) submitted an Application for Certification (AFC) to the California Energy Commission to construct and operate the Lodi Energy Center Project (LEC), a natural gas-fired, combined-cycle nominal 296-megawatt (MW) power generation facility in the city of Lodi, San Joaquin County, California. (Ex. 300, p. 3-1.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Location

The site for the LEC project is 4.4 acres of land in the city of Lodi, 6 miles west of the Lodi city center, located near Interstate-5 (I-5) approximately 1.7 miles south of State Route 12**.** On the east side of the site is the city of Lodi's White Slough Water Pollution Control Facility (WPCF). The WPCF's treatment and holding ponds are located to the north; an existing generating plant (49-MW NCPA Combustion Turbine Project (STIG) is located to the west with a 230-kV Pacific Gas and Electric overhead electrical transmission line aligned further to the west, and the San Joaquin County Mosquito and Vector Control facility is to the south. The project will also be located near the city of Stockton, which is approximately 2 miles south. The project site is currently undeveloped and used for equipment storage during upgrades to the WPCF. (Ex. 300, p. 3-1; Ex. 1, p. 2-1.)

2. Project Construction and Operation

If approved by the Energy Commission, NCPA will commence construction of the LEC in 2010. The project is expected to take about 24 months for construction and startup testing, and could begin commercial operation by first quarter of 2012, if there are no delays. The construction period will have a workforce of 168 and a peak workforce of 305 workers on-site. (Ex. 1, p. 2-32.)

Construction costs are estimated to be between $275 and $375 million. LEC's initial capital cost is estimated to be $298 million. It is estimated that 60 percent of the construction workforce will reside in San Joaquin County, and that approximately $16.08 million will stay in the local area during the construction period. (Ex. 300, pp. 3-3 to 3-4.)

Construction access will generally be from North Cord Road. In addition, the LEC proposes to construct a new temporary off-ramp from the southbound I-5 SR12

onramp approximately 100 feet long, which will provide heavy haul access from eastbound SR12. (Ex. 1, Fig. 5.12-4.) The temporary road will require an encroachment permit from the California Department of Transportation (Caltrans). Storage of construction materials and equipment will occur within the laydown areas. Construction worker parking will also occur within the areas. (Ex. 300, p. 3-4.)

3. Power Plant Equipment and Linear Facilities

The LEC project will consist of the following components: (1) One natural gas-fired Siemens STGS-5000F combustion turbine-generator (CTG), with an evaporative cooling system and dry low-NO_x combustors to control air emissions; (2) one 3-pressure heat recovery steam generator (HRSG), (3) a selective catalytic reduction (SCR) and carbon monoxide (CO) catalyst to further control NO_x and CO emissions, respectively; (4) one Siemens SST-900RH condensing steam turbine generator (STG); (5) one natural gas-fired auxiliary boiler; (6) one 7-cell draft evaporative cooling tower; and (7) associated support equipment. (Ex. 1, section 2-9.)

The LEC will be designed to use "Flex Plant 30" rapid startup technology, which is designed to allow earlier startup of the steam turbine by decoupling the gas turbine from the HRSG; essentially reducing startup emissions. The project is expected to have an overall annual availability of more than 95 percent. The CTG and associated equipment will include the use of best available control technology (BACT) to limit emissions of criteria pollutants and hazardous air pollutants. An SCR system using ammonia injection will help control NO_x (nitrogen oxide) and volatile organic compounds. BACT for PM_{10} (particulate matter) and SO_2 (sulfur oxide) will be the exclusive use of natural gas, and ammonia will also be limited to 10 parts per million. (Ex. 1, section 2-10.)

4. Transmission

The LEC facility's output will be transmitted to the power grid through the existing 230-kV, double-circuit line adjacent to NCPA's existing STIG plant. (Ex. 1, p. 2-17.)

5. Natural Gas Supply

In March, 2009, the Applicant submitted Supplement C to reflect that natural gas will be delivered to the project through a new off-site pipeline about 2.7 miles long running parallel to the 3-mile existing natural gas pipeline (#108) owned by Pacific Gas and Electric which services the existing STIG plant adjacent to the

LEC project site. (Ex. 30.) A portion of the pipeline (about 1.1 miles) has been revised between N. Thornton Road and N. Devries Road, and will increase the linear corridor by approximately 1,274 feet (0.24 mile). The route change is considered minor. (Exs. 1, p. 2-19; 300. pp. 3-2 to 3-3.)

6. Water Supply

The recycled water will be provided by a new pipeline that will be located immediately adjacent to the existing pipeline serving the STIG. Potable water for sanitary and domestic use will be provided by a new on-site potable water well. (Ex. 300, p. 3-3.)

On an annual average basis, the recycled water use for the LEC will be about 856 gallons per minute (gpm) or 1,380 acre-feet per/year (AFY). This assumes full-time operation at 8,760 hours per year. The city of Lodi has provided a will serve letter for the project stating that there will be a sufficient amount of recycled water available for the project. (Exs. 1, pp. 2-21 to 2-22; 300, p. 3-3.)

7. Wastewater Discharge

The LEC will produce no non-reclaimable process wastewater. It will dispose of process wastewater using a new Class I underground injection well (UIW), with the existing Class 1 UIW at the STIG Plant used for backup. During construction, reclaimed water from the project will be controlled in accordance with an engineered drainage system, an oil-water separator, and standard best management practices. This method will also apply to the LEC project's wastewater collection system, which will collect process wastewater runoff and storm water run-off from all of the plant equipment. (*Id*.)

8. Emission Control and Monitoring

Air emissions from the combustion of natural gas in the CTG will be controlled using state-of-the-art systems. To ensure that the systems perform correctly, continuous emissions monitoring for NO_x and CO will be performed. The **Air Quality** section of this Decision includes complete information on emission control and monitoring. (Ex. 1, p. 2-27.)

9. Facility Closure

The LEC will be designed for an operating life of 30 years, although the power plant could still be environmentally and economically viable beyond that point. At some point, 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. Facility closure will need to be consistent with laws, ordinances, regulations and standards in effect at the time of closure. LORS pertaining to facility closure are identified in the technical sections of this Decision and in Appendix A. (Ex. 300. p. 3-4.)

FINDINGS OF FACT

Based upon the evidentiary record, we find as follows:

1. Northern California Power Agency will own and operate the project, which will be located within the City of Lodi on 4.4 acres of land near I-5 and 1.7 miles south of state highway 12.

2. The project will have a nominal capacity rating of 296 MW[2].

3. The project involves construction of a new, approximately 1100 feet in length, transmission/generation tie-line to the existing 230 kV switchyard substation adjacent to the plant.

4. The project will use approximately 1380 acre-feet per year of recycled water for cooling needs, supplied by the City of Lodi's White Slough Water Pollution Control Facility. It will produce no non-reclaimable process wastewater, and will discharge nearly all of its wastewater into injection wells.

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

CONCLUSION OF LAW

1. We therefore conclude that the Lodi Energy Project is described at a level of detail sufficient to allow review in compliance with the provisions of both the Warren- Alquist Act and the California Environmental Quality Act.

[2] 296 MW is the nominal capacity of the project, as per the Commission's definition of plant capacity. However, the evidence establishes that project transmission interconnection to the grid is for 280 MW, as is reflected in the Transmission System Engineering section of this Decision. This is in accordance with the project's interconnection agreement.

II. PROJECT ALTERNATIVES

The California Environmental Quality Act (CEQA) Guidelines and the Energy Commission's regulations require an evaluation of the comparative merits of a range of feasible site and facility alternatives which represent the basic objectives of the proposed project but would avoid or substantially lessen potentially significant environmental impacts.[3] (Cal. Code Regs., tit. 14, §§ 15126.6 (c) and (e); *see also*, tit. 20, § 1765.)

The range of alternatives, including the "no project" alternative, is governed by the "rule of reason" and need not include those alternatives whose effects cannot be reasonably ascertained and whose implementation is remote and speculative. [Cal. Code Regs., tit. 14, § 15126.6(f).] Rather, the analysis is necessarily limited to alternatives that the "lead agency determines could feasibly attain most of the basic objectives of the project." (*Id*.)

Both the Applicant and Staff provided alternatives analyses describing the site selection process and project configuration in light of project objectives. The evidence is undisputed on these matters. (Exs. 1, 49; 1/5/10 RT: 43, 47.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The LEC site is approximately six miles southwest of the City of Lodi and two miles north of the City of Stockton, in San Joaquin County. The project site is adjacent to the City of Lodi's White Slough Water Pollution Control Facility (WPCF) to the east, treatment and holding ponds associated with WPCF to the north, the existing Northern California Power Agency Combustion Turbine Project #2 (STIG) to the west, and the San Joaquin Mosquito and Vector Control facility to the south. (Ex. 300, p. 6-2.)

[3] Public Resources Code section 25540.6(b) requires an Applicant for a power plant such as the LEC, which is otherwise exempt from the notice of intention process, to include information on the site selection criteria, alternative sites, and the reasons for choosing the proposed site. Section 1765 of the Commission's regulations further requires the parties to present evidence on alternative sites and facilities. Based on the totality of the record and as reflected in our findings for each of the technical topics, the mitigated LEC will not result in any significant adverse effects on the environment. Nevertheless, this alternatives analysis is necessary to ensure compliance with CEQA Guidelines and Commission regulations. (Cal. Code Regs., tit. 14, § 15126.6 and tit. 20, § 1765.)

The LEC site is within a 1,040-acre parcel owned by the City of Lodi and close enough in proximity to STIG that LEC will share some infrastructure with STIG and will tie into the existing STIG switchyard. LEC will obtain process water from the nearby WPCF. (Ex. 1, p. 6-1).

The project alternatives analyses considered each of the following factors:

- The project's basic objectives.
- Any potential significant environmental impacts of the project.
- Alternative locations or sites and whether the environmental impacts of the alternatives are the same, better, or worse than the proposed project.
- Technology alternatives to the project that would mitigate impacts.
- Impacts of not constructing the project to determine whether the "no project" alternative is superior to the proposed project. (Exs. 1, 300.)

1. Project Objectives

The evidentiary record establishes that the project's primary objectives include:

- Providing cost-effective and efficient electric generation capacity to Northern California Power Agency (NCPA) member utilities and other project participants.
- Providing the most efficient power supply available by using natural gas-fired combustion turbine technology capable of supporting the growing power needs of NCPA member utilities and other project participants.
- Locating the project on an industrial site, in close enough proximity to use the existing STIG infrastructures.
- Using state of the-art technology to provide the operational flexibility and rapid start and dispatch capability.
- Minimizing environmental and air quality impacts. (Exs. 1, p. 6-2; 300, pp.6-3 to 6-4.)

Based on the stated project objectives, the Applicant and NCPA selected the LEC site because it is:

- Located within a NCPA project participant's jurisdiction; i.e., the City of Lodi.
- Adjacent to or near high-pressure natural gas transmission lines.

- Adjacent to or near water supply for cooling purposes to maximize efficiency.
- Characterized by an industrial land use designation with consistent zoning.
- Determined to have readily available site control.
- Large enough to accommodate the site including construction laydown.
- Located more than 2,500 feet from the nearest residential area. (Exs. 1, p. 6-3; 300, pp. 6-4 through 6-5.)

2. Environmental Impacts of the Project

As discussed throughout this Decision, the LEC will not result in any significant adverse impacts and will comply with applicable laws, ordinances, regulations, and standards by implementing the measures proposed in the Application for Certification and the Conditions of Certification contained in this Decision. (See, e.g., Ex. 300, p. 6-12.)

3. Project Alternatives

Applicant and Staff evaluated two alternative sites and determined there would be no appreciable advantages to using either site over the proposed LEC site primarily because of the LEC's close proximity to existing infrastructure (near an existing high-pressure natural gas transmission line #108, 230 kV electrical transmission facilities), existing water supply for cooling from the WPCF, ability to share facility resources (staff, administrative buildings, warehouse, etc.), location of the existing STIG and ability to share resources, and certainty of a lease agreement with the City of Lodi. (Ex. 300, pp. 6-5 to 6-7, 6-12.)

Alternative Site 1 (East Turner) is a vacant 10-acre site located in the City of Lodi approximately 8 miles northeast of the LEC site. The site is surrounded to the north, west, and south by industrial facilities and to the east by a residential trailer park. Use of the site would require construction of the following linear facilities: (1) a 3,200-foot-long natural gas line that would tie into a PG&E gas line to the east of the site, (2) a 12-mile-long process water pipeline to tie into the WPCF, and (3) a 1,900-foot-long electrical transmission line to connect to an existing PG&E transmission line to the east, which would also require building a new substation. (Ex. 300, p. 6-5.)

Alternative Site 2 (Ripon) is a 9.8-acre undeveloped site located approximately 28 miles southeast of the LEC project site in the City of Ripon. Surrounding land uses include the Modesto Irrigation District and PG&E substation to the west, the Ripon Wastewater Treatment Plant (Ripon WWTP) is to the south, Highway 99 runs adjacent to the eastern border and several industrial facilities are to the north and south. Use of the site would require construction of the following linear facilities: (1) a 1,600 foot-long industrial water supply connection to tap into the current pipeline on South Avenue to the west, (2) a 3,000 foot-long gas line to access the 12-inch-diameter high pressure gas line located south of the Ripon WWTP, and (3) a 500-foot long electrical transmission line to connect to the existing MID substation. (Ex. 300, pp. 6-5 to 6-6.)

Alternatives Table 1 below compares key development components of the LEC site and alternative sites and shows that the LEC site meets the project's objectives.

Alternatives Table 1
LEC Project /Alternatives Sites

Development Components	LEC Site	Alternative 1 East Turner	Alternative 2 Ripon
Linear Connections	Natural gas = 14,122 feet* Water = Existing pipeline [1] Electrical = approximately 1100 feet	Natural gas = 3,200 feet Water = 12 miles Electrical = 1,900 feet	Natural gas = 3,000 feet Water = 1,600 feet[2] Electrical = 500 feet
Site Control (lease or ownership)	Site will be leased from city of Lodi	Unknown	Unknown
Nearest Residential	Approx. 4,400 feet away	Approx. 50 feet away ***	Approx. 650 feet away
Shared Facilities	Yes**	No	No
Zoning	Public Facilities	M-2, Heavy Industrial.	M-2, Heavy Industrial
Close Proximity to freeway	Yes	Yes	Yes
Water Resources for Power Plant Cooling	Would use tertiary-treated water from WPCF	Would use tertiary-treated water from WPCF	Would use non-potable industrial water system west of South Stockton Avenue

Note: Linear connections are in feet and miles and obtained from AFC.
* Based on the route alignment change as noted in Supplement C (NCPA, March 2009).

** Project site that would share staff and infrastructure (i.e., anhydrous ammonia system, administrative building, 230-kilovolt switchyard interconnection etc.) with STIG.

*** The East Turner site is located adjacent to a recreational vehicle/trailer park which could potentially make it more difficult to obtain licensing approval.

1 The recycled water will be provided by a new pipeline that will be located immediately adjacent to the existing pipeline serving the STIG.

2 The city of Ripon WPCF would provide recycled water.

4. Generation Technology Alternatives

LEC will be a natural gas-fired, combined-cycle nominal 296 megawatt (MW) generation facility. Both the Applicant and Staff evaluated the following alternative generation technologies that can use natural gas readily available from the existing transmission system:

1. Conventional boiler and steam turbines
2. Conventional simple-cycle combustion turbine
3. Kalina combined-cycle
4. Internal combustion engines. (Exs. 1, p. 6-14, 300, pp. 6-7 to 6-9.)

Alternatives Table 2 below compares these technologies to the LEC technology and shows that the LEC technology meets the project's objectives.

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Alternatives Table 2
Comparison of Generation Technology Alternatives and LEC

Technology Alternatives	Description	Pros	Cons
Boiler and Steam Turbine	Conventional boiler	Higher efficiency when utilizing oil or coal	Out-dated technology with low efficiency* and large space requirement
Conventional Simple-Cycle Combustion Turbine	Simple-cycle	Quick start-up capability; lower capital costs; suitable for peaking applications	Low efficiency that emits more air pollutants per kilowatt-hour
LEC	Combined-cycle (natural gas-fired /steam)	Meets project objectives (e.g., quick-start up capability, etc.)	Technology is widely used and requires mitigation
Kalina Combined-Cycle	Combined cycle (ammonia /water mixture in steam cycle)	Has potential to improve thermal efficiency	A developing technology that has not been widely used commercially
Internal Combustion Engines	Internal combustion	Uses very little water; uses a closed-loop coolant system with radiators and fans; quick-start capability*; are responsive load-following needs	Somewhat higher emissions than combustion turbine technology generally deployed at less than 150 MW (less than the LEC which is 296 MW)

Note: Fuel technologies were not considered for evaluation by the applicant because they do not meet the project's objectives.

5. Alternative Fuels and Technologies

Applicant presented evidence on alternative fuels, including: oil and natural gas, nuclear, hydroelectric, geothermal, biomass, solar, and wind energy. However, none of these alternatives is feasible on the LEC due to factors such as site size (wind, solar, biomass), limited or non availability (biomass, geothermal or hydroelectric), and/or environmental impacts (oil and gas or biomass). (Ex. 1, pp. 6-15 to 6-16.) Staff performed an independent analysis of renewable alternatives and similarly concluded that the use of natural gas advances the project's objectives. (Exs. 1, p. 6-16; 300, pp. 6-9 to 6- 11.)

To minimize NO_x emissions, the LEC combustion turbine generators will be equipped with dry low NO_x combustors and selective catalytic reduction using anhydrous ammonia as the reducing agent. (Ex. 1, p. 6-18). However the Applicant considered the following combustion turbine NO_x control alternatives: steam injection and water injection. The Applicant also considered EMx™ as a post-combustion NO_x control alternative. None of the alternative pollution control technologies was shown to be more effective than that proposed for the project. (Ex. 1, p. 6-16.) Applicant also considered aqueous ammonia and urea as reducing agent alternatives for use with the SCR system. Anhydrous ammonia was preferred primarily because the anhydrous ammonia tank will be shared between the LEC and STIG facility and because urea has no proven commercial viability. (Ex. 1, p. 6-16.)

6. No Project Alternative

CEQA requires an evaluation of the "no project" alternative "… to allow decisionmakers to compare the impacts of approving the proposed project with the impacts of not approving the proposed project." (14 Cal. Code Regs., § 15126.6(e)(1).) The "no project" analysis assumes: (a) that baseline environmental conditions would not change because the proposed project would not be installed; and (b) that the events or actions reasonably expected to occur in the foreseeable future would occur if the project were not approved. While no project-related impacts would be created under the "no project" scenario, all potential project-related impacts are mitigated to insignificant levels under the LEC proposal.

The evidentiary record indicates that the "no project" alternative is not superior to the proposed project because if the "no project" alternative is adopted, NCPA would not receive a license from the Energy Commission to build and operate the LEC and would consequently fail to meet its stated objectives. Moreover, the "no project" alternative would forego benefits of the project such as providing needed electric generation capacity to respond to the demand for electricity by NCPA project participants, meeting identified generation needs, and efficiently producing electricity to further statewide goals of limiting the adverse environmental effects of power generation. (Exs. 1, p. 6-2; 300, pp. 6-11 to 6-12.)

FINDINGS OF FACT

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

1. The record contains an acceptable analysis of a reasonable range of alternatives to the project as proposed.
2. The evidentiary record contains an adequate review of alternative project sites, linears, fuels, technologies, and the “no project” alternative.
3. Alternative fuels and technologies are not capable of meeting project objectives.
4. No site alternative is capable of meeting the stated project objectives.
5. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts since no unmitigable impacts have been established.
6. The “no project” alternative would not provide electrical system benefits.
7. The No Project alternative could result in reduced reliability for NCPA’s electrical supply.
8. If all Conditions of Certification contained in this Decision are implemented, construction and operation of the LEC will not create any significant direct, indirect, or cumulative adverse environmental impacts.

CONCLUSION OF LAW

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

III. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

The 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 Lodi Energy Center (LEC) is constructed and operated according to the Conditions of Certification. It essentially describes the respective duties and expectations of the Project Owner and the Staff Compliance Project Manager (CPM) in implementing the design, construction, and operation criteria set forth in this Decision.

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

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

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

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

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

FINDINGS OF FACT

The evidence establishes:

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

2. We adopt the following Compliance Plan as part of this Decision.

CONCLUSIONS OF LAW

1. The compliance and monitoring provisions incorporated as a part of this Decision satisfy the requirements of Public Resources Code section 25532.

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

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

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

PRE-CONSTRUCTION SITE MOBILIZATION

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

CONSTRUCTION

On-site work to install permanent equipment or structures for any facility.

Ground Disturbance

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

Grading, Boring, and Trenching

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

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

1. The installation of environmental monitoring equipment;

2. A soil or geological investigation;

3. A topographical survey;

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

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

START OF COMMERCIAL OPERATION

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

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

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

1. Ensuring that the design, construction, operation, and closure of the project facilities are in compliance with the terms and Conditions of the Energy Commission Decision;

2. Resolving complaints;

3. Processing post-certification changes to the Conditions of Certification, project description (petition to amend), and ownership or operational control (petition for change of ownership) (See instructions for filing petitions);

4. Documenting and tracking compliance filings; and

5. Ensuring that compliance files are maintained and accessible

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

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

PRE-CONSTRUCTION AND PRE-OPERATION COMPLIANCE MEETING

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

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

ENERGY COMMISSION RECORD

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

- 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 of certification changes and the resulting staff or Energy Commission action.

PROJECT OWNER RESPONSIBILITIES

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

COMPLIANCE CONDITIONS OF CERTIFICATION

Unrestricted Access (COMPLIANCE-1)

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

Compliance Record (COMPLIANCE-2)

The project owner shall maintain project files on-site or at an alternative site approved by the CPM for the life of the project, unless a lesser period of time is specified by the Conditions of Certification. The files shall contain copies of all

“as-built” drawings, documents submitted as verification for Conditions, and other project-related documents.

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

Compliance Verification Submittals (COMPLIANCE-3)

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

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

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

2. Appropriate letters from delegate agencies verifying compliance;

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

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

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

A cover letter from the project owner or authorized agent is required for all compliance submittals and correspondence pertaining to compliance matters. **The cover letter subject line shall identify the project by AFC number, the appropriate condition(s) of certification by condition number(s), and a brief description of the subject of the submittal**. The project owner shall also identify those submittals **not** required by a condition of certification with a statement such as: “This submittal is for information only and is not required by a specific condition of certification.” When submitting supplementary or corrected information, the project owner shall reference the date of the previous submittal and CEC submittal number.

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

All hardcopy submittals shall be addressed as follows:

Angelique Juarez-Garcia, Compliance Project Manager
(08-AFC-10C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

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

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

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

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

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

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

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

Compliance Reporting

There are two different compliance reports that the project owner must submit to assist the CPM in tracking activities and monitoring compliance with the terms

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

Compliance Matrix (COMPLIANCE-5)

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

1. The technical area;

2. The condition number;

3. A brief description of the verification action or submittal required by the condition;

4. The date the submittal is required (e.g., 60 days prior to construction, after final inspection, etc.);

5. The expected or actual submittal date;

6. The date a submittal or action was approved by the Chief Building Official (CBO), CPM, or delegate agency, if applicable;

7. The compliance status of each condition, e.g., “not started,” “in progress” or “completed” (include the date); and

8. If the condition was amended, the date of the amendment.

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

Monthly Compliance Report (COMPLIANCE-6)

The first Monthly Compliance Report is due one month following the Energy Commission business meeting date upon which the project was approved, unless otherwise agreed to by the CPM. The first Monthly Compliance Report shall include the AFC number and an initial list of dates for each of the events identified on the **Key Events List.** 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 an electronic searchable version of the Monthly Compliance Report within 10 working days after the end of each

reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:

1. A summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;

2. Documents required by specific Conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, as well as the Conditions they satisfy and submitted as attachments to the Monthly Compliance Report;

3. An initial, and thereafter updated, compliance matrix showing the status of all Conditions of Certification;

4. A list of Conditions that have been satisfied during the reporting period, and a description or reference to the actions that satisfied the condition;

5. A list of any submittal deadlines that were missed, accompanied by an explanation and an estimate of when the information will be provided;

6. A cumulative listing of any approved changes to Conditions of Certification;

7. A listing of any filings submitted to, or permits issued by, other governmental agencies during the month;

8. A projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with Conditions of Certification;

9. A listing of the month's additions to the on-site compliance file; and

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

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

Annual Compliance Report (COMPLIANCE-7)

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

1. An updated compliance matrix showing the status of all Conditions of Certification (fully satisfied Conditions do not need to be included in the matrix after they have been reported as completed);

2. A summary of the current project operating status and an explanation of any significant changes to facility operations during the year;

3. Documents required by specific Conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, with the condition it satisfies, and submitted as attachments to the Annual Compliance Report;

4. A cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;

5. An explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;

6. A listing of filings submitted to, or permits issued by, other governmental agencies during the year;

7. A projection of project compliance activities scheduled during the next year;

8. A listing of the year's additions to the on-site compliance file;

9. An evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see Compliance Conditions for Facility Closure addressed later in this section]; and

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

Confidential Information (COMPLIANCE-8)

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

Annual Energy Facility Compliance Fee (COMPLIANCE-9)

Pursuant to the provisions of Section 25806(b) of the Public Resources Code, the project owner is required to pay an annual compliance fee, which is adjusted annually. Current Compliance fee information is available on the Energy Commission's website http://www.energy.ca.gov/siting/filing_fees.html. You may

also contact the CPM for the current fee information. The initial payment is due on the date the Energy Commission adopts the final decision. All subsequent payments are due by July 1 of each year in which the facility retains its certification. The payment instrument shall be made payable to the California Energy Commission and mailed to: Accounting Office MS-02, California Energy Commission, 1516 9th St., Sacramento, CA 95814.

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

Prior to the start of construction, the project owner must send a letter to property owners living within one mile of the project notifying them of a telephone number to contact project representatives with questions, complaints or concerns. If the telephone is not staffed 24 hours per day, it shall include automatic answering with date and time stamp recording. All recorded complaints shall be responded to within 24 hours. The telephone number shall be posted at the project site and made easily visible to passersby during construction and operation. The telephone number shall be provided to the CPM who will post it on the Energy Commission's web page at:

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

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

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

FACILITY CLOSURE

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

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

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

COMPLIANCE CONDITIONS FOR FACILITY CLOSURE

Planned Closure (COMPLIANCE-11)

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

The plan shall:

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

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

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

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

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

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

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

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

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

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

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

The on-site contingency plan shall provide for taking immediate steps to secure the facility from trespassing or encroachment. In addition, for closures of more than 90 days, unless other arrangements are agreed to by the CPM, the plan shall provide for removal of hazardous materials and hazardous wastes, draining

of all chemicals from storage tanks and other equipment, and the safe shutdown of all equipment. (Also see specific Conditions of Certification for the technical areas of Hazardous Materials Management and Waste Management.)

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

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

If the CPM determines that an unplanned temporary closure is likely to be permanent, or for a duration of more than 12 months, a closure plan consistent with the requirements for a planned closure shall be developed and submitted to the CPM within 90 days of the CPM's determination (or other period of time agreed to by the CPM).

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

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

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

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

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

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

The project owner must file a petition with the Energy Commission pursuant to Title 20, California Code of Regulations, section 1769, in order to modify the project (including linear facilities) design, operation or performance requirements, and to transfer ownership or operational control of the facility. **It is the responsibility of the project owner to contact the CPM to determine if a proposed project change should be considered a project modification pursuant to section 1769.** For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the CPM, who will file it with the Energy Commission's Dockets Unit in accordance with Title 20, California Code of Regulations, section 1209. Implementation of a project modification without first securing Energy Commission, or Energy Commission staff, approval may result in enforcement action that could result in civil penalties in accordance with section 25534 of the Public Resources Code.

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

Amendment

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

Change of Ownership

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

Staff Approved Project Modification

After the project owner files a Petition to Amend pursuant to section 1769, as discussed above, the CPM will make a determination whether the petition can be processed as a staff approved project modification pursuant to section 1769 (a)(2). Modifications that do not result in deletions or changes to Conditions of Certification, that are compliant with laws, ordinances, regulations and standards and will not have significant environmental impacts, may be authorized by the CPM as a staff approved project modification. This process usually requires minimal time to complete, and it requires a 14-day public review of the Notice of Petition to Amend that includes staff's intention to approve the proposed project modification unless substantive objections are filed.

Verification CHANGE

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

CBO DELEGATION AND AGENCY COOPERATION

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

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

ENFORCEMENT

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

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the Conditions of Certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1237, but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by future law or regulations.

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

Informal Dispute Resolution Process

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

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

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

Request for Informal Investigation

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM

finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter. Within seven working days of the CPM's request, provide a written report to the CPM of the results of the investigation, including corrective measures proposed or undertaken. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to also provide an initial verbal report, within 48 hours.

Request for Informal Meeting

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

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

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

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

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

Formal Dispute Resolution Procedure-Complaints and Investigations

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

KEY EVENTS LIST

PROJECT: _____

DOCKET #: _____

COMPLIANCE PROJECT MANAGER: _____

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

COMPLIANCE TABLE 1
SUMMARY of COMPLIANCE CONDITIONS OF CERTIFICATION

Condition Number	Subject	Description
COMPLIANCE-1	Unrestricted Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COMPLIANCE-2	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COMPLIANCE-3	Compliance Verification Submittals	The project owner is responsible for the delivery and content of all verification submittals to the CPM, whether such condition was satisfied by work performed or the project owner or his agent.
COMPLIANCE-4	Pre-construction Matrix and Tasks Prior to Start of Construction	Construction shall not commence until the all of the following activities/submittals have been completed: • Property owners living within one mile of the project have been notified of a telephone number to contact for questions, complaints or concerns, • A pre-construction matrix has been submitted identifying only those Conditions that must be fulfilled before the start of construction, • All pre-construction Conditions have been complied with, • The CPM has issued a letter to the project owner authorizing construction.
COMPLIANCE-5	Compliance Matrix	The project owner shall submit a compliance matrix (in a spreadsheet format) with each monthly and annual compliance report which includes the status of all compliance Conditions of Certification.
COMPLIANCE-6	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Energy Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.
COMPLIANCE-7	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports instead of Monthly Compliance Reports.

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

ATTACHMENT A
COMPLAINT REPORT/RESOLUTION FORM

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

IV. ENGINEERING ASSESSMENT

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

A. FACILITY DESIGN

This review covers several technical disciplines including the civil, electrical, mechanical, and structural engineering elements related to project design and construction. The evidentiary presentations were uncontested. (1/5/2010 RT 32, 44, 47; Ex. 1; 10; 49; 300, § 5.1; 301.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Application for Certification (AFC) describes the preliminary facility design. In considering the adequacy of the plans, the Commission reviews whether the power plant and linear facilities are described with sufficient detail to assure the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The review also includes, as appropriate, the identification of special design features that are necessary to deal with unique site conditions which could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 300, pp. 5.1-1 to 5.1-2.)

Staff proposed several Conditions of Certification, which we have adopted, that establish a design review and construction inspection process to verify compliance with applicable standards and special requirements. (Ex. 300, p. 5.1-4.) The project will be designed and constructed in conformance with the latest edition of the California Building Standards Code (currently the 2007 CBSC) and other applicable codes and standards in effect at the time design approval and construction actually begin. (Ex. 300, 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 grading, flood protection, erosion control, site drainage, and site access in addition to the criteria for designing and constructing related linear facilities such as the natural gas and transmission interconnection facilities. (Ex. 300, pp. 5.1-2 to 5.1-3; see also, the **Geology and Paleontology**

section of this Decision.) The evidence establishes that the project will incorporate accepted industry standards. This includes design practices and construction methods for preparing and developing the site. (Ex. 300, p. 5.1-3.) Conditions **CIVIL-1** through **CIVIL-4** ensure that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production and facilities used for storage of hazardous or toxic materials, as well as those capable of becoming potential health and safety hazards if not constructed properly. (Ex. 200, p. 5.1-3.) **Table 1**, contained in Condition **GEN-2,** lists the major structures and equipment included in the initial engineering design for the project. Conditions **GEN-3** through **GEN-8** require that qualified individuals oversee and inspect construction of the facility. Similarly, Conditions **MECH-1** through **MECH-3** address compliance of the project's mechanical systems with appropriate standards, and a quality assurance/quality control program assures that the project will be designed, procured, fabricated, and installed as described. Condition **ELEC-1** provides assurance that design and construction of major electrical features will comply with applicable LORS. Compliance with design requirements will be verified through specific inspections and audits. (Ex. 300, p. 5.1-4.)

The power plant site is located in Seismic Risk Zone 4. (Ex. 300, p. 5.4-5.) The 2007 CBC requires specific "dynamic" lateral force procedures for certain structures to determine their seismic design criteria; others may be designed using a "static" analysis procedure. To ensure that project structures are analyzed appropriately, Condition **STRUC-1** requires the project owner to submit its proposed lateral force procedures to the Chief Building Official[4] (CBO) for review and approval prior to the start of construction. (Ex. 300, p. 5.1-3.)

The evidentiary record also addresses project closure, which may range from "mothballing" the facility to removing all equipment and restoring the site. (Ex. 300, pp. 5.1-4 to 5.1-5.) To ensure that decommissioning of the facility will conform to applicable LORS and be completed in a manner that protects the

[4] The Energy Commission is the CBO for facilities we certify. We may delegate CBO authority to local building officials and/or independent consultants to carry out design review and construction inspections. When CBO duties are delegated, we require a Memorandum of Understanding with the delegate entity to outline respective roles, responsibilities, and qualifications of involved individuals such as those described in Conditions of Certification **GEN-1** through **GEN-8**. (Ex. 300, p. 5.1-4.) The Conditions further require that every appropriate element of project construction be first approved by the CBO and that qualified personnel perform or oversee inspections.

environment and public health and safety, the project owner is required to submit a decommissioning plan which will identify: decommissioning activities; applicable LORS in effect when decommissioning occurs; activities necessary to restore the site, if appropriate; and decommissioning alternatives. (*Id.*) The general closure provisions of the Compliance Monitoring and Closure Plan describe related requirements. *See* the **Compliance and Closure** section in this Decision.

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

FINDINGS OF FACT

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

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

CONCLUSION OF LAW

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

CONDITIONS OF CERTIFICATION

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

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

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

Verification: Within 30 days following receipt of the certificate of occupancy, the project owner shall submit to the CPM a statement of verification, signed by the responsible design engineer, attesting that all designs, construction, installation, and inspection requirements of the applicable LORS and the Energy Commission's Decision have been met in the area of facility design. The project owner shall provide the CPM a copy of the certificate of occupancy within 30 days of receipt from the CBO.

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

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

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

Facility Design Table 1
Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	1
CT Enclosure Structure, Foundation and Connections	1
CT Generator Foundation and Connections	1
Exhaust Stack Structure, Foundation and Connections	1
CT Exhaust Duct Structure, Foundation and Connections	1
CT Step-up Transformer Foundation and Connections	1
Unit Auxiliary Transformer Skid Foundation and Connections	2
CT Inlet Air Filter House Structure, Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure	1
HRSG Foundation and Connections	1
HRSG High Pressure Tubing	1 lot
Water Treatment Building Structure, Foundation and Connections	1
Cooling Tower Chemical Building Structure, Foundation and Connections	1
Demineralized Water Tank Structure, Foundation and Connections	1
CEMS Building Structure, Foundation and Connections	2
STIG Plant Cooling Tower Structure, Foundation and Connections	1

Equipment/System	Quantity (Plant)
Water Treatment/Chemical Treatment PDC	1
Boiler Feed Pumps Structure Foundation and Connections	1
Boiler Blowdown Tank Structure, Foundation and Connections	1
Generator Circuit Breaker Foundation and Connections	2
Service Water Tank Structure, Foundation and Connections	1
Steam Turbine (ST) Foundation and Connections	1
ST Generator Foundation and Connections	1
ST Step-Up Transformer Foundation and Connections	1
ST PDC Structure, Foundation and Connections	1
CT PDC Structure, Foundation and Connections	1
Excitation Transformer Foundation and Connections	1
Cooling Tower Pump Structure Foundation and Connections	1
Waste Water Storage Tank Structure, Foundation and Connections	1
Fuel Gas Compressors with Foundation and Connections	3
Cooling Tower Structure, Foundation and Connections	1
Drainage Systems	1 Lot
High Pressure and Large Diameter Piping and Pipe Racks	1 Lot
HVAC Systems	1 Lot
Temperature Control and Ventilation Systems	1 Lot
Building Energy Conservation Systems	1 Lot
Switchyard, Buses and Towers	1 Lot
Electrical Duct Banks	1 Lot
Prefabricated Assemblies	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan checks, and construction inspections based upon a reasonable fee schedule negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 2007 CBC, adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be otherwise agreed upon by the project owner and the CBO.

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

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

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

The RE shall:

1. Monitor progress of construction work requiring CBO design review and inspection to ensure compliance with LORS;
2. Ensure that construction of all facilities subject to CBO design review and inspection conforms in every material respect to applicable LORS, these Conditions of Certification, approved plans, and specifications;
3. Prepare documents to initiate changes in approved drawings and specifications when either directed by the project owner or as required by the conditions of the project;
4. Be responsible for providing project inspectors and testing agencies with complete and up-to-date sets of stamped drawings, plans, specifications, and any other required documents;
5. Be responsible for the timely submittal of construction progress reports to the CBO from the project inspectors, the contractor, and

other engineers who have been delegated responsibility for portions of the project; and

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

The resident engineer (or his delegate) must be located at the project site, or be available at the project site within a reasonable period of time, during any hours in which construction takes place.

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

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

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

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

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California-registered engineers to the project: a civil engineer; a soils, geotechnical, or civil engineer experienced and knowledgeable in the practice of soils engineering; and an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California-registered engineers to the project: a design engineer who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; a mechanical engineer; and an electrical engineer. (California Business and Professions Code 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 addressed in the Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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

The project owner shall submit to the CBO, for review and approval, the names, qualifications, and registration numbers of all responsible engineers assigned to the project.

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

A. The civil engineer shall:

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

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

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

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

   1. Review all the engineering geology reports;

   2. Prepare the foundation investigations, geotechnical, or soils reports containing field exploration reports, laboratory tests, and engineering analysis detailing the nature and extent of the soils that could be susceptible to liquefaction, rapid settlement, or collapse when saturated under load;

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

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

This engineer shall be authorized to halt earthwork and to require changes if site conditions are unsafe or do not conform to the predicted conditions used as the basis for design of earthwork or foundations.

C. The engineering geologist shall:

1. Review all the engineering geology reports and prepare a final soils grading report; and
2. Be present, as required, during site grading and earthwork to provide consultation and monitor compliance with the requirements set forth in the 2007 CBC (depending on the site conditions, this may be the responsibility of either the soils engineer, the engineering geologist, or both).

D. The design engineer shall:

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

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

F. The electrical engineer shall:

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

Verification: At least 30 days (or project owner and CBO approved alternative time frame) prior to the start of rough grading, the project owner shall submit to the CBO, for review and approval, resumes and registration numbers of the

responsible civil engineer, soils (geotechnical) engineer, and engineering geologist assigned to the project.

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

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

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

GEN-6 Prior to the start of an activity requiring special inspection, including prefabricated assemblies, the project owner shall assign to the project qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 2007 CBC. All transmission facilities (lines, switchyards, switching stations, and substations) are addressed in Conditions of Certification in the **Transmission System Engineering** section of this Decision.

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

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Inspect the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction then, if uncorrected, to the CBO and the CPM for corrective action; and
4. Submit a final signed report to the RE, CBO, and CPM stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans, specifications, and other provisions of the applicable edition of the CBC.

Verification: At least 15 days (or project owner and CBO approved alternative time frame) prior to the start of an activity requiring special inspection,

the project owner shall submit to the CBO for review and approval, with a copy to the CPM, the name(s) and qualifications of the certified weld inspector(s) or other certified special inspector(s) assigned to the project to perform one or more of the duties set forth above. The project owner shall also submit to the CPM a copy of the CBO's approval of the qualifications of all special inspectors in the next monthly compliance report.

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

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend required corrective actions. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next monthly compliance report. If any corrective action is disapproved, the project owner shall advise the CPM, within five days, of the reason for disapproval and the revised corrective action necessary 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 that the CBO inspect the completed structure and review the submitted documents. The project owner shall notify the CPM after obtaining the CBO's final approval. The project owner shall retain one set of approved engineering plans, specifications, and calculations (including all approved changes) at the project site or at another accessible location during the operating life of the project. Electronic copies of the approved plans, specifications, calculations, and marked-up as-builts shall be provided to the CBO for retention by the CPM.

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

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

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils, geotechnical, or foundation investigations reports required by the 2007 CBC.

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

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

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

CIVIL-3 The project owner shall perform inspections in accordance with the 2007 CBC. All plant site grading operations for which a grading permit is required shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be reported immediately to the resident engineer, the CBO, and the CPM. The project owner shall prepare a written report, with copies

to the CBO and the CPM, detailing all discrepancies, non-compliance items, and the proposed corrective action.

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

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

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

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

1. Major project structures;
2. Major foundations, equipment supports, and anchorage; and
3. Large field-fabricated tanks.

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

The project owner shall:

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

2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports, and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (for example, highest loads or lowest allowable stresses shall govern). All plans, calculations, and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations, and specifications;
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations, and other required documents of the designated major structures prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation;
4. Ensure that the final plans, calculations, and specifications clearly reflect the inclusion of approved criteria, assumptions, and methods used to develop the design. The final designs, plans, calculations, and specifications shall be signed and stamped by the responsible design engineer; and
5. Submit to the CBO the responsible design engineer's signed statement that the final design plans conform to applicable LORS.

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

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

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

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

results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and

5. Reports covering other structural activities requiring special inspections shall be in accordance with the 2007 CBC.

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. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within five days of resolution of the NCR, the project owner shall submit a copy of the corrective action to the CBO and the CPM.

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

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

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

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

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

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

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

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

- American National Standards Institute (ANSI) B31.1 (Power Piping Code);
- ANSI B31.2 (Fuel Gas Piping Code);
- ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);
- ANSI B31.8 (Gas Transmission and Distribution Piping Code);
- 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
- City of Lodi and San Joaquin County codes.

The CBO may deputize inspectors to carry out the functions of the code enforcement agency.

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

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

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

The project owner shall:

1. Ensure that all boilers and fired and unfired pressure vessels are designed, fabricated, and installed in accordance with the appropriate section of the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code or other applicable code. Vendor certification, with identification of applicable code, shall be submitted for prefabricated vessels and tanks; and
2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications, and calculations conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

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

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

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

The project owner shall design and install all HVAC and refrigeration systems within buildings and related structures in accordance with the CBC and other applicable codes. Upon completion of any increment of construction, the project owner shall request the CBO's inspection and approval of that construction.

The final plans, specifications, and calculations shall include approved criteria, assumptions, and methods used to develop the design. In addition, the responsible mechanical engineer shall sign and stamp all plans, drawings, and calculations and submit a signed statement to the CBO that the proposed final design plans, specifications, and calculations conform with the applicable LORS.

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

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

A. Final plant design plans shall include:

1. One-line diagrams for the 13.8-kV, 4.16-kV, and 480 V systems; and
2. System grounding drawings.

B. Final plant calculations must establish:

1. Short-circuit ratings of plant equipment;
2. Ampacity of feeder cables;
3. Voltage drop in feeder cables;
4. System grounding requirements;
5. Coordination study calculations for fuses, circuit breakers, and protective relay settings for the 13.8-kV, 4.16-kV, and 480 V systems;

6. System grounding requirements; and
7. Lighting energy calculations.

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

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

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

B. POWER PLANT EFFICIENCY

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

The evidence on this matter is uncontested and examines the project's: energy requirements and energy use efficiency; effects on local and regional energy supplies and resources; requirements for additional energy supply capacity; and compliance with applicable energy standards. In addition, the evidence addresses whether there are feasible alternatives which would reduce any wasteful, inefficient, or unnecessary energy consumption attributable to the project. (1/5/2010 RT 31, 44, 47; Exs. 1; 49; 300, § 5.3.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project involves building and operating a 296 MW combined cycle power plant. The plant will employ Siemens' "Flex Plant 30" technology. This consists of: one natural gas-fired Siemens STG6-5000F combustion gas turbine generator with an evaporative inlet air cooling system and dry low NOx combustors to control air emissions; one 3-pressure heat recovery steam generator (HRSG); a selective catalytic reduction (SCR) unit and a CO catalyst to further control air emissions; one Siemens SST-900 RH condensing steam turbine generator (STG); one natural gas-fired auxiliary boiler; and one 7-cell mechanical draft evaporative cooling tower. The LEC will be adjacent to NCPA's existing 49 MW STIG plant. (Ex. 300, pp. 5.3-1 to 5.3-2.)

The project will burn natural gas at a maximum rate of approximately 2,131 million Btu (British Thermal Units) per hour, lower heating value (LHV), during peak load operation. Under expected conditions, it will generate electricity at a base load efficiency of approximately 56 precent, LHV. (Ex. 300, p. 5.3-2.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by the selection of equipment used to generate power. Combined cycle technology results in the fast-start capability of a simple cycle gas turbine coupled with enhanced efficiency. The LEC Project will generate electricity from one gas turbine generator and one steam turbine operating on heat energy recovered

from the gas turbine's exhaust. By recovering this heat which would otherwise be lost up the exhaust stack, the efficiency of a combined cycle power plant is increased considerably from that of either a gas turbine or a steam turbine operating alone. (Ex. 300, p. 5.3-3.) The evidence establishes that the LEC Project's configuration is well-suited to the large, steady loads met by a base load power plant intended to supply energy efficiently for long periods of time. (Ex. 300, p. 5.3-4.)

Modern gas turbines embody the most fuel-efficient generating technology currently available. The turbines can be grouped into three categories: conventional; advanced; and next generation. The record contains an analysis of the equipment proposed for the project. It indicates that the Siemens F class chosen is an advanced turbine, and one of the most modern and efficient machines available. Alternatives to this turbine offer no significant improvements in actual operating efficiency. (Ex. 300, pp. 5.3-4 to 5.3-5.) The evidence also shows that the use of an evaporative cooler for gas turbine inlet air cooling is appropriate since the alternative – the mechanical chiller – offers no real efficiency benefit. (Ex. 300, p. 5.3-5.)

The fuel will be delivered via a new 2.5 mile long, 12-inch diameter natural gas line which will interconnect with an existing Pacific Gas and Electric (PG&E) line. The evidence conclusively establishes that PG&E's present fuel supply capacity is sufficient to meet the demands of the LEC Project. (Ex. 300, pp. 5.3-2 to 5.3.-3.) Moreover, the evidence shows that only natural gas burning technologies are feasible for this project. Other technologies such as solar, biomass, waste-to-energy, hydroelectric, wind, and geothermal were all considered but cannot meet project objectives, are simply not feasible, or are commercially unavailable. (Ex. 300, p. 5.3-4.)

In conclusion, the uncontradicted evidence shows that the LEC Project will increase NCPA's power supply as well as its dispatch and rapid start capabilities, and displace operation of older, less efficient power plants. It will provide these benefits in the most fuel efficient manner practicable, without creating adverse effects on energy supplies or resources. The project will not require additional sources of energy supply or consume energy in a wasteful or inefficient manner. (Ex. 300, pp. 5.3-5 to 5.3-6.)

FINDINGS OF FACT

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

1. The LEC Project will provide approximately 296 MW of base load electrical power, operate in combined cycle mode, and utilize one Siemens STG6-5000F gas turbine generator.

2. Under average annual ambient conditions, the project will generate electricity at an overall fuel efficiency of approximately 56 percent, LHV.

3. The project's combined cycle configuration is well suited to the large steady loads met by a base load plant in order to efficiently supply energy for long periods of time.

4. Use of the Siemens STG6-5000F is appropriate for the LEC Project.

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

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

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

8. The project will increase NCPA's power supply, as well as enhance its dispatch and rapid start capabilities.

CONCLUSION OF LAW

The LEC Project will not create adverse effects upon energy supplies or resources, require additional sources of energy supply, or consume energy in a wasteful or inefficient manner. No Federal, State, or local laws, ordinances, regulations, or standards apply to the efficiency of this project.

No Conditions of Certification are required for this topic area.

C. POWER PLANT RELIABILITY

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

The responsibility for maintaining system reliability falls largely to control area operators such as the Northern California Power Authority (NCPA) or the California Independent System Operator (CAISO) that purchase, dispatch, and sell electric power throughout the State. (Ex. 300, p. 5.4-1.) Protocols to ensure sufficient electrical system reliability are still being developed. For example, "must run" power purchase agreements and "participating generator" agreements are two mechanisms that contribute to an adequate supply of reliable power. The CAISO requires that power plants selling ancillary services, as well as those holding reliability must run contracts, fulfill certain requirements, including:

- Filing periodic reports on plant reliability;
- Reporting all outages and their causes; and
- Scheduling all planned maintenance outages with the CAISO

According to the evidence, summarized below, these criteria have been developed on the assumption that individual power plants in the current competitive market will continue to exhibit historical reliability levels. (Ex. 300, p. 5.4-2.) However, it is possible that, if numerous power plants operated at reliability levels sufficiently lower than historical levels, this assumption would prove invalid. Therefore, to ensure adequate system reliability, we examine whether individual power plants will be built and operated to the traditional level of reliability reflected in the power generation industry because, where a power plant compares favorably to industry norms, it is not likely to degrade the overall reliability of the electric system it serves. (Ex. 300, p. 5.4-2.) The evidence presented on this topic was uncontested (1/5/2010 RT 39, 44, 47; Exs. 1; 35; 49; 300, § 5.4.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

Applicant intends that the Lodi Energy Center (LEC) provide operating flexibility and rapid start capability, i.e. the ability to quickly start up and provide efficient part load and base load power. It expects an annual availability factor[5] of 93 to

[5] This is the percentage of time that the power plant is available to generate power.

98 percent for the project. Both planned and unplanned outages subtract from a plant's availability. For practical purposes, a reliable power plant is one that is available when called upon to operate. The evidence shows that delivering acceptable reliability entails: 1) adequate levels of equipment availability; 2) plant maintainability with scheduled maintenance outages; 3) fuel and water availability; and 4) resistance to natural hazards. (Ex. 300, pp. 5.4-2 to 5.4-3.)

The record, summarized below, reflects Commission staff's evaluation of the proposed project against typical industry norms as a benchmark for assessing plant reliability.

1. Equipment Availability

Equipment availability will be ensured by use of appropriate quality assurance/quality control (QA/QC) programs during design, procurement, construction, and operation of the plant and by providing adequate maintenance and repair of the equipment and systems. The project owner will use a QA/QC program typical in the power industry. Equipment will be purchased from qualified suppliers and the project owner will perform receipt inspections, test components, and administer independent testing contracts. To ensure these measures are taken, we have incorporated appropriate Conditions of Certification in the **Facility Design** section of this Decision. (Ex. 300, p. 5.4-3.)

2. Plant Maintainability

The LEC will operate in base load service. It must thus be capable of being maintained while operating. A typical approach for achieving this is to provide redundant pieces of the equipment most likely to require service or repair.

The evidence shows that the project incorporates an appropriate redundancy of function. All plant ancillary systems are designed with adequate redundancy to ensure their continued operation if equipment fails. For example, the plant's distributed control system will be built with typical redundancy, and emergency direct current and alternating current power systems will be supplied by redundant batteries, chargers, and inverters. Examples of other redundant systems for the balance of plant equipment include:

- Two 100 percent fuel gas compressors;
- Two 100 percent capacity feed water pumps;
- Two 100 percent capacity condensate pumps;

- Two 100 percent capacity circulating water pumps;
- Two 100 percent capacity air compressors; and
- A 7-cell evaporative cooling tower. (Ex. 300, pp. 5.4-3 to 5.4-4.)
-

The project owner will establish a maintenance program typical of the power generation industry and based on recommendations from the various equipment manufacturers. This will encompass both preventive and predictive maintenance techniques. Maintenance outages will likely be planned for periods of low electricity demand. The evidence establishes that these measures will ensure acceptable reliability. (Ex. 300, p. 5.4-4.)

3. Fuel and Water Availability

For any power plant the long-term availability of fuel, and water for cooling or process use, is necessary to ensure reliability. The LEC Project will burn natural gas supplied by PG&E from its system. This fuel will be supplied by a new 2.5 mile long natural gas pipeline that connects to PG&Es existing line 108. The evidence establishes that this line offers access to adequate supplies of gas to meet the project's needs and that PG&E has provided a "will-serve" letter confirming its willingness to supply the project. (*Id*.)

The project will use an evaporative cooling tower to cool the steam turbine's condenser. Recycled water will be delivered from the adjacent City of Lodi's White Slough Water Pollution Control Facility for process and cooling water uses. A will-serve letter from the City of Lodi verifies that adequate recycled water for the project will be available. An on-site well will provide potable water. The evidence shows that the project's water supply will be adequately reliable. (*Id*.)

4. Natural Hazards

The site lies in Seismic Risk Zone 4. The project will be designed and constructed to the Seismic Zone 4 standards of the latest appropriate LORS. By implementing these seismic design criteria, this project will likely perform at least as well as, and perhaps better than, existing plants in the electric power system. We have adopted Conditions of Certification in the **Facility Design** section to ensure this occurs. Although the site is within the 100-year floodplain, the evidence similarly shows that compliance with these Conditions will adequately preserve the project's functional reliability. (Ex. 300, p. 5.4-5.)

5. Comparison to Industry Norms

The North American Electric Reliability Corporation (NERC) maintains industry statistics for availability factors and other related reliability data. NERC currently reports summary generating unit statistics for the years 2002 through 2006 which demonstrate an availability factor of about 86.5 percent for combined cycle units of all megawatt sizes. The LEC's gas turbine has been on the market for many years and is expected to exhibit typically high availability, outperforming many of the older existing turbines. We are thus persuaded by the evidence that the project will likely reach its predicted annual availability factor of 93 to 98 percent. (Ex. 300, pp. 5.4-5 to 5.4-6.)

Finally, the evidence shows that the LEC Project will enhance power supply reliability and provide operating flexibility in the NCPA service area. The evidence characterizes these factors as "noteworthy projects benefits." (Ex. 200, p. 5.4-6.)

FINDINGS OF FACT

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

1. No federal, state, or local/county LORS apply to the reliability of the Lodi Energy Center Project.

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

3. The North American Electric Reliability Corporation (NERC) reports that, for the years 2002 through 2006, combined cycle units of all sizes (in megawatts) exhibited an availability factor of about 86.5 percent.

4. An availability factor of 93 to 98 percent is achievable by the LEC Project.

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

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

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

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

9. The project will incorporate an appropriate redundancy of function for its equipment.

10. The project will enhance power supply reliability and provide operating flexibility and rapid start capability in the NCPA service area.

CONCLUSION OF LAW

1. We therefore conclude that the LEC Project will meet industry norms and not degrade the overall reliability of the electrical system. There are no LORS that establish either power plant reliability criteria or procedures for attaining reliable operation. No Conditions of Certification are required for this topic area.

D. TRANSMISSION SYSTEM ENGINEERING

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

The California Independent System Operator (CAISO) is responsible for ensuring electric system reliability for participating entities, and determines both the standards necessary to achieve system reliability and whether a proposed project conforms to those standards. The Commission works in conjunction with the CAISO in assessing a project.

Staff's analysis evaluates the power plant switchyard, outlet line, termination and downstream facilities identified by the Applicant, to determine whether the project will comply with applicable laws during the design review, construction, operation, and potential closure of the project. No evidence disputes these matters. (1/5/10 RT 38-39; Exs. 1; 10; 35; 49.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed LEC project would be a combined-cycle power generating facility located in the City of Lodi, San Joaquin County, California. The Applicant has proposed to interconnect the LEC project to the existing NCPA Lodi Switching Station. The proposed commercial operation would be by first quarter 2012. The project would consist of a natural gas-fired combustion turbine-generator (CTG) and a steam turbine generator (STG). The CTG would generate approximately 200.8 megawatt (MW), and the STG would generate approximately 100.9 MW. With an auxiliary load of 6 MW, the nominal output of the LEC would be approximately 296 MW. (Exs. 1**,** §§ 1.1, 2.0; 200, p. 5.5-4.)

PG&E is responsible for ensuring electric system reliability on its transmission system with the addition of proposed transmission modifications, and determines both the standards necessary to ensure reliability and whether the proposed transmission modifications conform to existing standards. CAISO provides analysis in its Facilities Study, and its approval for the facilities and changes

required in its system for addition of the proposed transmission modifications. (Ex. 300, pp. 5.5-2, 5.5-5.)

LEC proposes to interconnect to the CAISO Controlled Grid. CAISO performed the Facilities Study (FS) at the request of the project owner, to identify transmission system impacts caused by the LEC project on PG&E's 230 kV and 115 kV transmission systems. The FS was based on adding a generation plant with a net output of 280 MW to the CAISO controlled grid. The FS included Power Flow Analysis, Short Circuit Analysis, System Protection and Substation Evaluation, Reactive Power Deficiency Analysis, and Dynamic Stability analyses. The base cases included all planned generating facilities in PG&E's service territory, whose on-line schedules are either concurrent with or precede the proposed project. Detailed study assumptions are described in the FS (*see* Ex. 35.) Power Flow studies were conducted both with and without the LEC project connection to the PG&E grid, at the NCPA Lodi Switching Station using full loop base cases modeling 2012 summer peak and summer off-peak conditions. The Power Flow study assessed the project's impact on the thermal loading of the transmission lines and equipment using the 2012 summer peak full loop and summer off-peak full base cases. Dynamic Stability analyses were conducted using the 2012 summer peak full loop base cases to determine whether the project would create instability in the system following certain selected outages. The Short Circuit study was conducted with and without the project to determine if its interconnection could overstress the existing substation facilities (Ex. 300, p. 5.5-6).

1. Switching Station Upgrades

The existing NCPA Lodi Switching Station would be modified to accommodate the addition of the LEC project. A new bay including a 230 kV circuit breaker rated at 2,000 Amps and two disconnect switches each rated at 1,200 Amps would be added to the existing NCPA Lodi Switching Station. (Exs. 1, § 2.1.7; 300, p. 5.5-4.)

A single 230 kV transmission line would interconnect the LEC to the NCPA Lodi Switching Station. This new overhead line would be approximately 1100 feet and would be supported by monopole, single circuit structure. Power would be transmitted to the grid via PG&E Gold Hill – Lodi Stig 230 kV and Lodi STIG – Eight Mile Road 230 kV transmission lines. (Ex. 1, §§ 2.1.7.1, 3.2, Figure 3.2-2.)

Compliance with Condition of Certification **TSE-5** will ensure these facilities comply with LORS.

2. Study Results

The evidence details various studies which were performed to assess the project's impacts upon the transmission system and to analyze the CAISO grid with and without LEC.

a. Power Flow Study

The Power Flow Study identified pre-project overload criteria violations under the 2012 summer peak and summer off-peak conditions. The study concludes that the addition of the LEC would cause a number of pre-existing normal and/or emergency overloads to increase. However, the addition of the project did not result in new overloads. Pre-project overloads would be mitigated by either PG&E or generators with higher positions in the CAISO generator interconnection queue. Section 7 of the FS (Ex. 35) summarizes the system conditions and mitigation measures required for interconnecting the project to the PG&E transmission grid. (Ex. 300, p. 5.5-7.)

The Power Flow Study indicated that the addition of the LEC would not cause any new overloads under normal operating conditions. The Warnerville-Wilson 230 kV line has an existing overload of 109 percent. The addition of the LEC would exacerbate this overload. Pre-project overloads would be mitigated by either PG&E or generators with higher positions in the California ISO generator interconnection queue. No mitigation is required for the LEC. (Ex. 300, p. 5.5-6.)

The Placer – Gold Hill #2 115 kV line is overloaded to 100 percent before the addition of the LEC. Addition of the LEC will increase the overload to 101 percent under N-1 contingency condition. The CAISO has approved the PG&E T444 transmission upgrade project. The 16 mile-long 115 kV double circuit line will be reconductored with 477 kcmil ACSS conductor. This PG&E transmission upgrade project will mitigate both of pre-project overload and increased overload caused by addition of the LEC. No mitigation is required for the LEC. (Ex. 300, p. 5.5-6.)

All other line overloads exist before the addition of the LEC. These pre-project overloads would be mitigated by either PG&E or generators with higher positions in the California ISO generator interconnection queue. No mitigation is required for the LEC. (Ex. 300, pp. 5.5-6 through 5.5-7.)

b. Short Circuit Study and Substation Evaluation

A Short Circuit Study and Substation Evaluation was conducted to determine the degree to which the addition of the LEC project increases fault duties at PG&E's substations, adjacent utility substations, and other 500 kV, 230 kV, 115 kV, and 60 kV busses within the study area. The Short Circuit Study and Substation Evaluation show that addition of the LEC would not cause overstressed breakers or other equipment. The existing breakers are adequate enough to withstand any post project incremental fault currents identified in the Short Circuit study. (Ex. 300, p. 5.5-7.)

c. Reactive Power Deficiency Analysis

The Reactive Power Deficiency analysis determined that the addition of the LEC would not contribute to any reactive power margin violations at PG&E buses following selected N-1 and N-2 contingencies. (*Id.*)

d. Dynamic Stability Study Results

The Dynamic Stability Study for the LEC project was conducted using 2012 summer peak full loop base case to determine if the project would create any adverse impact on the stable operation of the transmission grid in the event of selected N-1 and N-2 outages. The results indicate there are no adverse impacts on the stable operation of the transmission system following these selected disturbances, as shown in the FS for integration of the project. (*Id.*)

3. Compliance with LORS

The Facilities Study indicates that the project interconnection would comply with all NERC/WECC planning standards and CAISO reliability criteria. The Applicant will design, build, and operate the proposed 230 kV overhead transmission line. Proposed modifications to the NCPA Lodi Switching Station would be performed by NCPA. With implementation of the proposed Conditions of Certification, the project will meet the requirements and standards of all applicable LORS. (*Id.*)

FINDINGS OF FACT

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

1. The LEC will not cause any new transmission line overloads under normal or contingency conditions but will exacerbate pre-project overloads under both normal and contingency conditions.
2. Both a PG&E transmission upgrade project and generators with higher positions in the CAISO generator interconnection queue will mitigate the identified overloads; therefore, there will be no adverse impacts to the transmission system from the LEC project's integration.
3. The existing breakers are adequate to withstand the post project incremental fault currents described in the Short Circuit Study.
4. The proposed interconnecting facilities between the new generators and the NCPA Lodi Switching Station, including the step-up transformer, the 230 kV overhead transmission line, and terminations are adequate, and planned in accordance with good utility practices.
5. LEC will cause overloads to the transmission grid under specified conditions, but such impacts are mitigated to less-than-significant with implementation of the Conditions of Certification.
6. The LEC switchyard and interconnection facilities will be adequate and reliable.
7. The power plant switchyard, outlet lines, and termination are in accordance with good utility practices and are acceptable.
8. Adding local generation such as LEC will provide positive impacts because it would meet the increasing load demand in San Joaquin County and the City of Lodi, provide additional reactive power and voltage support, enhance reliability and may reduce system losses in the PG&E local network.
9. The Conditions of Certification are adequate to ensure that LEC does not adversely impact the transmission grid.

CONCLUSIONS OF LAW

1. The proposed LEC project outlet transmission lines and terminations are acceptable and would comply with all applicable LORS. The project

interconnection to the grid would not require additional downstream transmission facilities (other than those proposed by the Applicant) that require CEQA review.

2. We therefore conclude that with the implementation of the various mitigation measures specified in this Decision, the proposed transmission interconnection for the project will not contribute to significant adverse direct, indirect, or cumulative impacts.

3. The Conditions of Certification below ensure that the transmission-related aspects of LEC will be designed, constructed, and operated in conformance with the applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

TSE-1 The project owner shall provide the Compliance Project Manager (CPM) and the Chief Building Official (CBO) with 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 both a description and a list of proposed submittal packages for design, calculations, and specifications for major structures and equipment. To facilitate audits by Energy Commission staff, the project owner shall provide designated packages to the CPM when requested.

Verification: At least 60 days (or fewer, if mutually agreed upon by the project owner and the CBO) before the start of construction, the project owner shall submit the schedule, a master drawing list, and a master specifications list to both the CBO and 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 both 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 Before the start of construction, the project owner shall assign to the project an electrical engineer and at least one of each of the following:

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 and fully competent and proficient in the design of power plant structures and equipment supports; or
D. A mechanical engineer (business and professions code sections 6704 et seq. Require state registration to practice as either a civil engineer or a 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, or 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 as required by 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 earth work and require changes; if site conditions are unsafe or do not conform with the predicted conditions used as the basis for design of earth work 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 fewer if mutually agreed to by the project owner and the CBO) before the start of rough grading, the project owner shall submit to the CBO for review and approval, the names, qualifications, and

registration numbers of all the responsible engineers assigned to the project. The project owner shall notify the CPM of the CBO's approvals of the engineers within five days of the approval.

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

TSE-3 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend corrective action (2001 California Building Code, 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 become a controlled document and shall be submitted to the CBO for review and approval and refer to this condition of certification.

Verification: The project owner shall submit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for the disapproval, along with the revised corrective action required to obtain the CBO's approval.

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

A. Receipt Or Delay Of Major Electrical Equipment;

B. Testing Or Energization Of Major Electrical Equipment; And

C. The Number Of Electrical Drawings Approved, Submitted For Approval, And Still To Be Submitted.

Verification: At least 30 days (or fewer if mutually agreed to by the project owner and the CBO) before 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, and outlet line and termination, including a copy of the signed

and stamped statement from the responsible electrical engineer verifying compliance with all applicable LORS, and send the CPM a copy of the transmittal letter in the next monthly compliance report.

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

A. The LEC project will be interconnected to the NCPA Lodi Switching Station via a single 230 kV transmission line, approximately 1100 feet long, with 1272 kcmil ACSR, Bittern conductor or conductor with a higher rating.

B. The existing NCPA Lodi Switching Station will require a new 230 kV, 2000 Amps breaker, two 1200 Amps disconnect switches, and associated protective relays to facilitate interconnection of the project.

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

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

E. 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.

F. The project conductors shall be sized to accommodate the full output of the project.

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

H. The project owner shall provide to the CPM:

1) The updated final Detailed Facility Study (DFS), if any, including a description of facility upgrades, operational mitigation measures, and/or special protection system sequencing and timing if applicable;

2) Executed project owner and California ISO facility interconnection agreement.

I. A request for minor changes to the facilities described in this condition may be allowed if the project owner informs the CBO and CPM and receives approval for the proposed change. A detailed description of the proposed change and complete engineering, environmental, and economic rationale for the change shall accompany the request. Construction involving changed equipment or substation configurations shall not begin without prior written approval of the changes by the CBO and the CPM.

Verification: At least 60 days before the start of construction of transmission facilities (or fewer days if mutually agreed upon by the project owner and CBO), the project owner shall submit to the CBO for approval:

Design drawings, specifications, and calculations conforming with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, CA ISO standards, National Electric Code (NEC) and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems, and major switchyard equipment;

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" and a statement signed and sealed by the registered engineer in responsible charge, or other acceptable alternative verification, that the transmission element(s) will conform with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC), and related industry standards;

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

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

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

TSE-6 The project owner shall provide the following notice to the California ISO prior to synchronizing the facility with the California electric transmission system:

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

B. At least one business day prior to synchronizing the facility with the grid for testing, provide telephone notification to the California ISO's outage coordination department.

Verification: The project owner shall provide copies of the California ISO letter to the CPM when it is sent to the California ISO one week before initial synchronization with the grid. The project owner shall contact the California ISO's outage coordination department (Monday through Friday, between the hours of 7:00 a.m. and 3:30 p.m. at (916) 351-2300) at least one business day prior to synchronizing the facility with the grid for testing. A report of that conversation with the California ISO shall be provided electronically to the CPM one day before synchronizing the facility with the California electric transmission system for the first time.

TSE-7 The project owner shall be responsible for inspection of the transmission facilities during and after project construction, and for any subsequent CPM- and CBO-approved changes, to ensure conformance with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards. In cases of non-conformance, the project owner shall inform the CPM and CBO, in writing and within 10 days of the discovery of such non-conformance, and the actions that will be taken to correct it.

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

1. "As built" engineering description(s) and one-line drawings of the electrical portion of the facilities signed and sealed by the registered electrical engineer in charge. A statement verifying conformity with CPUC General Order 95 or National Electric Safety Code (NESC); Title 8 of the California Code and Regulations (Title 8); Articles 35, 36 and 37 of the *High Voltage Electric Safety Orders*, California ISO standards, National Electric Code (NEC) and related industry standards;

2. An "as built" engineering description of the mechanical, structural, and civil portion of the transmission facilities signed and sealed by the registered engineer in charge or an acceptable alternative verification. "As built" drawings of the electrical, mechanical, structural, and civil portion of the transmission facilities shall be maintained at the power plant and made

available, if requested, for CPM audit, as set forth in the compliance monitoring plan;

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

The Lodi Energy Center's (LEC) transmission line must be constructed and operated in a manner that protects environmental quality, assures public health and safety, and complies with applicable law. This portion of the Decision assesses the potential for the transmission line to create the various impacts mentioned below, as well as whether mitigation measures are required to reduce any adverse effects to insignificant levels. The evidence submitted by Applicant and Staff was uncontested. (1/5/2010 RT 30, 44, 47; Exs. 1; 10; 49; 300, § 4.11.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The LEC Project includes building and operating a new on-site, approximately 1100 feet 230-kV overhead transmission line. This line will be located on NCPA property with no nearby residences. It will connect the project to the existing switchyard at the STIG Plant. Since the tie-line will be operated in the PG&E service area, its design, erection, and maintenance will conform to standard PG&E practices. This, in turn, assures compliance with applicable LORS. (Ex. 300, pp. 4.11-1, 4.11-4.)

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

- *Aviation Safety*

Any potential hazard to area aircraft relates to the potential for collision in the navigable airspace and the need to file a "Notice of Proposed Construction or Alteration" with the Federal Aviation Administration (FAA). The project site is not located near a major commercial aviation center. The nearest public airports are the Kingdon Airpark (1.4 miles away) and the Lodi Airpark (3.6 miles away). The evidence shows that the Applicant has, as required, filed a "Notice of Proposed Construction or Alteration" with the FAA since the transmission line is potentially within the restricted airspace of the Kingdon Airpark. The evidence further shows, however, that the 73-foot height of the line's support structures is well below the 200-foot height threshold of concern for the FAA. Thus, the project is unlikely to pose a hazard to users of the Kingdon Airpark. The LEC is beyond

the restricted airspace of the next nearest facility, the Lodi Airpark. (Ex. 300, p. 4.11-5.)

- *Interference with Radio-Frequency Communication*

This potential impact arises from corona discharge and is primarily a concern for lines larger than 345-kV. The project's 230-kV line will be built and maintained according to standard PG&E practices aimed at minimizing any interference. Moreover, there are no nearby residential receptors. If interference should occur, however, Condition of Certification **TLSN-2** requires the project owner to mitigate these effects as feasible. (Ex. 300, pp. 4.11-5 to 4.11-6.)

- *Audible Noise*

This is typically perceived as a characteristic crackling, hissing, or frying sound or hum, especially in wet weather. The noise level depends upon the strength of the line's electric field, and is a concern mainly from lines of 345-kV or higher. It can be limited through design, construction, and maintenance practices. The project line (230-kV) will embody a low corona design to minimize field strengths. It is not expected that the line will add significantly to the current background noise levels.[6] (Ex. 300, p. 4.11-6.)

- *Hazardous Shocks*

These could result from direct or indirect contact between an individual and the energized line. Compliance with the CPUC's GO-95, as required in Condition of Certification **TLSN-1**, will ensure that adequate measures are implemented to minimize this potential impact. (Ex. 300, p. 4.11-7.)

- *Nuisance Shocks*

Nuisance shocks are typically caused by direct contact with metal objects electrically charged by fields from the energized line. They are effectively minimized through grounding procedures for all metallic objects within the right-of-way as specified in Condition of Certification **TLSN-5**. (*Id.*)

[6] Overall project noise levels are discussed in the **Noise** section of this Decision.

- *Fire Hazards*

Fire can be caused by sparks from the line's conductors or by direct contact between the line and nearby trees or other combustible objects. PG&E's standard fire prevention and suppression measures, and compliance with the clearance-related aspects of GO-95 as required in Condition of Certification **TLSN-4**, ensure that appropriate fire prevention measures are implemented. Furthermore, there are no large trees in the area the line traverses; this reduces contact-related fire hazards. (*Id*.)

- *Exposure to Electric and Magnetic Fields*

Electric and magnetic fields (EMF) occur whenever electricity flows. The possibility of deleterious health effects from exposure to EMF has raised public health concerns about living and working near high-voltage lines. Due to the present scientific uncertainty regarding potential health effects from EMF exposure, CPUC policy requires reduction of such fields in the design, construction, and maintenance of new or modified lines, if feasible, without affecting the safety, efficiency, reliability, and maintainability of the transmission grid. (Ex. 300, p. 4.11-8.)

The CPUC requires each new transmission line in California to be designed according to the EMF-reducing guidelines of the electric utility in the service area involved. EMF fields produced by new lines must be similar to the fields of comparable lines in that service area. To comply with CPUC requirements for EMF management, PG&E's specific field strength-reducing measures will be incorporated into the project line's design and include:

- Increasing the distance between the conductors and the ground to an optimal level;
- Reducing the spacing between the conductors to an optimal level;
- Minimizing the current in the line; and
- Arranging current flow to maximize the cancellation effects from the interacting of conductor fields. (Ex. 300, pp. 4.11-9 to 4.11-10.)
-

Condition of Certification **TLSN-3** requires that actual field strengths be measured, according to accepted procedures, to insure that the field intensities are similar to those of other PG&E lines. These measurements will reflect both

the effectiveness of the field reduction techniques used and the LEC's potential contribution to area EMF levels. (Ex. 300, p. 4.11-10.)

Since there are no residences in the vicinity of the project's line, and since the line is located on NCPA property, there will not be the long-term human residential EMF exposures primarily responsible for the health concern of recent years. The only project-related EMF exposures of potential significance are the short-term exposures of plant workers, regulatory inspectors, maintenance personnel, visitors, or individuals in the immediate vicinity of the line. These types of exposures are well understood as not being significantly related to an adverse health effect. (Ex. 300, p. 4.11-9.)

Overall, the evidence shows that the project will be designed, constructed, operated, and maintained in compliance with applicable LORS. Implementation of the Conditions of Certification will ensure that any impacts are reduced to less than significant levels. (Ex. 300, p. 4.11-11.)

FINDINGS OF FACT

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

1. The Lodi Energy Center Project includes the construction and operation of a new on-site 230-kV switchyard and an on-site, approximately 1100 feet long overhead 230-kV transmission line.
2. The evidentiary record includes analyses of potential impacts from the project's transmission line involving aircraft collisions, interference with radio frequency communication, audible noise, hazardous shocks, nuisance shocks, fire danger, and EMF exposure.
3. There are no residences along the route of the project's new transmission line.
4. The available scientific evidence does not establish that EMF fields pose a significant health hazard to humans.
5. The electric and magnetic fields generated by the project's transmission line will be managed to the extent the CPUC considers appropriate, based on available health effects information.
6. The project's transmission line will comply with existing LORS for public health and safety.

7. The project's transmission line will incorporate standard EMF-reducing measures established by the CPUC and used by PG&E.

8. The project owner will provide field intensity measurements before and after line energization to assess EMF contributions from the project-related current flow.

9. The new transmission line will not result in significant adverse environmental impacts to public health and safety or cause significant direct, indirect, or cumulative impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

CONCLUSIONS OF LAW

Implementation of the Conditions of Certification, below, will ensure that the LEC Project's outlet line complies with all applicable laws, ordinances, regulations, and standards relating to **Transmission Line Safety and Nuisance** as identified in the pertinent portion of **Appendix A** of this Decision.

The LEC Project's new transmission outlet line will not have a significant impact on the environment because of transmission line safety and nuisance factors.

CONDITIONS OF CERTIFICATION

TLSN-1 The project owner shall construct the proposed transmission line according to the requirements of the California Public Utility Commission's GO-95, GO-52, GO-131-D, Title 8, and Group 2, High Voltage Electrical Safety Orders, Sections 2700 through 2974 of the California Code of Regulations, and Pacific Gas and Electric's EMF-reduction guidelines.

Verification: At least 30 days before starting construction of the transmission line or related structures and facilities, the project owner shall submit to the Compliance Project Manager (CPM) a letter signed by a California registered electrical engineer affirming that the lines will be constructed according to the requirements stated in the Condition.

TLSN-2 The project owner shall ensure that every reasonable effort is made to identify and correct, on a case-specific basis, any complaints of interference with radio or television signals from operation of the project-related lines and associated switchyards.

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

TLSN-3 The project owner shall use a qualified individual to measure the strengths of the electric and magnetic fields from the line at the points of maximum intensity along the line's route. The measurements shall be made before and after energization according to the American National Standard Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) standard procedures. These measurements shall be completed no later than six months after the start of operations.

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

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

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

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

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

V. PUBLIC HEALTH AND SAFETY

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

A. GREENHOUSE GAS (GHG) EMISSIONS

1. Introduction and Summary

The generation of electricity using fossil fuels, such as the natural gas that LEC will consume, produces both "criteria pollutants" and greenhouse gas (GHG) emissions. Criteria pollutants are emissions that are known to adversely affect public health and for which regulatory agencies have established legal "criteria," which limit both the amount of the pollutants that may be emitted as well as the concentrations of the pollutants in the air. LEC's criteria pollutant emissions, and the project's compliance with applicable air quality laws, are discussed in the **Air Quality** section of this Decision. (Ex. 303, p. 4.1-1.)

This part of the Decision assesses the GHG emissions that are likely to result from the construction and the operation of the LEC facility.

The greenhouse gases are primarily carbon dioxide (CO_2), with much smaller amounts of nitrous oxide (N_2O), methane (CH_4), sulfur hexafluoride (SF_6), hydrofluorocarbons (HFC), and perflurocarbons (PFC). Even though the other GHGs have a greater impact on climate change on a per-unit basis, GHGs are converted into carbon dioxide equivalent (CO_2E) metric tonnes (MT) for ease of comparison. (Ex. 303, p. 4.1-80.)

Adding GHG to the atmosphere increases the insulating power of the air and thereby traps more heat at and near the earth's surface. Prevailing scientific opinion considers GHG emissions to be the cause of significant changes in climate over the past several decades, and that such emissions "if not sufficiently curtailed, are likely to contribute further to continued increases in global temperatures." (Ex. 303, p. 4.1-77.) The California Legislature has declared that "[g]lobal warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California" (Health & Safety Code, § 38501).

Since the impact of the GHG emissions from a power plant's operation has global, rather than local, effects, those impacts should be assessed not only by analysis of the plant's emissions, but also in the context of the operation of the entire electricity system of which the plant is an integrated part. Furthermore, the impact of the GHG emissions from a power plant's operation should be analyzed in the context of applicable GHG laws and policies, such as AB 32.

In this part of the Decision we consider:

- Whether LEC's GHG construction emissions will have significant impacts;
- Whether LEC's operation will be consistent with the state's GHG policies and will help achieve the state's GHG goals, by (1) causing a decrease in overall electricity system GHG emissions; and (2) supporting the addition of renewable generation into the system, which will further reduce system GHG emissions.

2. Policy and Regulatory Framework

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

a. AB 32

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

Along with all other regulatory agencies in California, the Energy Commission recognizes that meeting the AB 32 goals is vital to the state's economic and environmental health. While AB 32 goals have yet to be translated into regulations that limit GHG emissions from generating facilities, the scoping plan

adopted by CARB relies heavily on cost-effective energy efficiency and demand response, renewable energy, and other priority resources to achieve significant reductions of emissions in the electricity sector by 2020. Even more dramatic reductions in electricity sector emissions would likely be required to meet California's 2050 greenhouse gas reduction goal. Facilities under our jurisdiction, such as LEC, must be consistent with these policies.[7]

b. Renewable Portfolio Standard

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

c. Emissions Performance Standard

Senate Bill (SB) 1368 of 2006, and regulations adopted by the Energy Commission and the Public Utilities Commission pursuant to the bill, prohibit utilities from entering into long-term commitments with any base load facilities that exceed an Emission Performance Standard (EPS) of 0.500 metric tonnes of CO_2 per megawatt-hour (this is the equivalent of 1100 pounds CO_2/MWh). (Pub. Util. Code, § 8340 et seq.; Cal. Code Regs., tit. 20, § 2900 et seq.; CPUC D0701039.) Currently, the EPS is the only LORS that has the effect of limiting power plant GHG emissions.

d. Loading Order

In 2003 the Energy Commission and the CPUC agreed on a "loading order" for meeting electricity needs. The first energy resources that should be utilized are energy efficiency and demand response (at the maximum level that is feasible and cost-effective), followed by renewables and distributed generation, combined heat and power (also known as cogeneration), and finally efficient fossil fuel resources and infrastructure development.[8] CARB's AB 32 Scoping Plan reflects

[7] Of course, LEC and all other stationary sources will need to comply with any applicable GHG LORS that take effect in the future.

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

these policy preferences. (California Air Resources Board, Climate Change Scoping Plan, December 2008.)

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

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

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

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

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

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

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

3. GHG Emissions during Construction of the Facility

Power plant construction involves vehicles and other equipment that emit GHG. Construction of LEC will take 24 months. LEC's construction GHG emissions are estimated be 40,654 metric tons of CO_2-equivalent GHG during the 24-month construction period. (Ex. 303, p. 4.1-81.)

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

For example, the most recent guidance from CARB staff recommends a "best practices" threshold for construction emissions. [CARB, Preliminary Draft Staff Proposal, Recommended Approaches for Setting Interim Significance Thresholds for Greenhouse Gases under the California Environmental Quality Act (Oct. 24, 2008), p. 9]. Such an approach is also recommended on an interim basis, or proposed, by major local air districts.

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

In order to limit vehicle emissions of both criteria pollutants and GHG during construction, LEC will use (1) operational measures, such as limiting vehicle idling time and shutting down equipment when not in use; (2) regular preventive maintenance to prevent emission increases due to vehicular engine problems; and (3) use of low-emitting diesel engines meeting federal emissions standards for construction equipment, whenever available. (Ex. 303, p. 4.1-83.)

Control measures that we have adopted elsewhere in this Decision to address criteria pollutant emissions will further minimize greenhouse gas emissions to the extent feasible. Also, the requirement that the project owner use newer construction equipment will increase fuel efficiency and minimize tailpipe emissions (see, e.g. Condition of Certification **AQ-SC5**).

We find that the measures described above to directly and indirectly limit the emission of GHGs during the construction of the LEC Project are in accordance with current best practices. We also note that the GHG emissions anticipated from construction are minimal compared with anticipated operational emissions (potential annual GHG emissions from operation are nearly 23 times the total quantity of GHG emissions projected to be emitted during construction). We therefore find that the GHG emissions from short-term construction activities will not result in a significant adverse impact. (Ex. 303, pp. 4.1-80 to 4.1-82.)

4. GHG Emissions During Operation of the Facility

a. Anticipated Emissions

The primary sources of GHG emissions during the project's operation will be the new natural gas-fired combustion turbine generator (CTG) in a combined-cycle configuration with a heat recovery steam generator (HRSG) that does not use duct firing. There will also be a small amount of GHG emissions from the auxiliary boiler, and cooling tower. (Ex. 303, p. 4.1-16.) The project would be permitted, on an annual basis, to emit over 936,000 metric tonnes of CO_2-equivalent per year if operated at its maximum permitted level. (Ex. 303, p. 4.1-82.)

The LEC combined cycle plant, at 0.36 $MTCO_2$/MWh, will easily meet the limits of SB 1368 and the Greenhouse Gas Emission Performance Standard of 0.500 $MTCO_2$/MWh.

b. Determining Significance: the Necessity of a System Approach

As we have previously noted, GHG emissions have global, rather than local, impacts. While it may be true that in general, when an agency conducts a CEQA analysis of a proposed project, it does not need to analyze how the operation of the proposed project is going to affect the entire system of projects in a large multistate region, analysis of the impacts of GHG emissions from power plants requires consideration of the project's impacts on the entire electricity system.

California's electricity system – which is actually part of a system serving the entire western region of the U.S., Canada, and Mexico – is large and complex. Hundreds of power plants, thousands of miles of transmission and distribution lines, and millions of points of electricity demand operate in an interconnected, integrated, and simultaneous fashion. Because the system is integrated, and because electricity is produced and consumed instantaneously, and will continue to be until large-scale electricity storage technologies are available, any change in demand and, most important for this analysis, any change in output from any generation source, is likely to affect the output from all generators (*Committee Guidance on Fulfilling California Environmental Quality Act Responsibilities for Greenhouse Gas Impacts in Power Plant Siting Applications,* CEC-700-2009-004, pp. 20 to 22) [9] (Hereinafter referred to as "Committee CEQA Guidance").

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

The California Independent System Operator (California ISO) is responsible for operating the system so that it provides power reliably and at the lowest cost. Thus the California ISO dispatches generating facilities generally in order of cheapest to operate (i.e., typically the most efficient) to most expensive (i.e., typically the least efficient). (*Id*., p. 20.) Because operating cost is correlated with heat rate (the amount of fuel that it takes to generate a unit of electricity), and, in turn, heat rate is directly correlated with emissions (including GHG emissions), when a power plant runs, it usually will take the place of another facility with higher emissions that otherwise would have operated. Due to the integrated nature of the electrical grid, the operational plant and the displaced plant may be hundreds of miles apart (Committee CEQA Guidance, p. 20). Because one plant's operation could affect GHG emissions hundreds of miles away, the necessity of assessing their operational GHG emissions on a system-wide basis becomes clear.

c. LEC's Consistency with State and Energy Commission Policies on GHG Reduction

We now must determine whether or not LEC will comply with Energy Commission policies on GHG reduction as set forth in section 2 e, above.

(1) Reduction of the Overall System Heat Rate Through Displacement of More-Costly, Less-Efficient, and Higher-Emitting Power Plants

LEC will have a heat rate of approximately 6,824 Btu/kWh. Compared to other new and existing units in San Joaquin County and Stanislaus County, the LEC will be more efficient, and emit fewer GHG emissions during any hour of operation. Local generating units with the best (lowest) heat rate or lowest GHG performance factor generally operate more than other units with higher heat rates (Ex. 303, pp. 4.1-86 to 4.1-87.)

(2) Facilitating Integration of Renewable Energy Resources by Providing Flexible Capacity and Ancillary Services

Most new renewable generation in California will be wind and solar generated power. (Ex. 303, p. 4.1-85.) Unfortunately, the wind does not blow, nor does the sun shine, around the clock. As a result, in order to rely on such intermittent sources of power, utilities must have available other generating resources or significant storage that can fill the gap when renewable generation decreases (*Id*., citing California ISO, Integration of Renewable Resources, November 2007). Until utility-scale storage of energy generated by renewables becomes feasible

and cost-effective, the availability of nonrenewable generation to fill in the gaps in renewable generation will have to increase in order for the state to meet the 20 percent renewable portfolio standard. At this time, gas-fired plants are better able to provide intermittent generation support, grid operations support, extreme load and system emergencies support, and general energy support, as well as to meet local capacity requirements because they can be called upon whenever they are needed—they are "dispatchable." (Committee CEQA Guidance, p. 24; Ex. 303, p. 4.1-86.)

LEC will provide flexible, dispatchable and fast ramping[10] power that would not obstruct penetration of renewable energy because of its position in the loading order. In general, combined cycle combustion turbines can ramp up quickly, but the combined cycle facility overall output is limited to about 15 MW per minute by the steam turbine and HRSG. (Ex. 303, p. 4.1-85.)

LEC will not, however, provide fast starting capabilities when the HRSG and steam turbine are cold.[11] Intermittent renewable sources of energy will be accommodated by LEC varying its energy output as needed to integrate the renewable sources, but the lack of fast-start capabilities under all conditions make it likely that LEC may not be able to play a role in some system operating scenarios. (Ex. 303, p. 4.1-86.)

(3) Reduction of System-Wide GHG Emissions and Support of AB 32 Goals and Policies through Replacement of Generation from Out-of-State Coal Powerplants and Less Efficient in-State Power Plants

Coal-fired plants and other high-GHG resources are effectively prohibited from entering into new contracts for California deliveries as a result of the Emissions Performance Standard adopted in 2007 pursuant to SB 1368. Between now and 2020, more than 18,000 GWh of high-GHG energy procured by California utilities under existing contracts will have to be replaced. As these contracts expire, new and existing generation resources will replace the lost energy and capacity. Some will come from renewable generation; some will come from new and existing natural gas fired generation. (Ex. 303, p. 4.1-87.)

[10] The California ISO categorizes *fast-ramping* as a generator capable of going from lowest power to highest in under 20 minutes, or greater than 10 MW per minute.

[11] In general, fast starts are defined as being less than two hours.

The State Water Resources Control Board has proposed significant curtailment or retirements of dozens of coastal power plants that use environmentally-threatening once-through cooling systems and which, in 2008, collectively produced around 58,000 GWh. Most of these units are old and already operate at low capacity factors, perhaps reflecting their inefficiency and declining competitiveness in both the loading order and in the current electricity market. Although the timing would be uncertain, LEC will likely out-compete these aging plants, thereby displacing the energy they provide, and accelerating their retirements. (Ex. 303, p. 4.1-88.)

5. Cumulative Impacts on Greenhouse Gases

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or . . . compound or increase other environmental impacts." (CEQA Guidelines § 15355.) "A cumulative impact consists of an impact that is created as a result of a combination of the project evaluated in the EIR together with other projects causing related impacts." (CEQA Guidelines § 15130[a][1].) Such impacts may be relatively minor and incremental, yet still be significant because of the existing environmental background, particularly when one considers other closely related past, present, and reasonably foreseeable future projects. (Ex. 303, p. 4.1-90.)

GHG assessment is by its very nature a cumulative impact assessment. LEC will emit greenhouse gases and, therefore, we have analyzed its potential cumulative impact in the context of its effect on the electricity system, resulting GHG emissions from the system, and existing GHG regulatory requirements and GHG energy policies. The evidence supports our finding that LEC will not cause or contribute to a significant adverse cumulative impact on GHG.

FINDINGS OF FACT

1. The GHG emissions from the LEC Project construction are likely to be 40,654 $MTCO_2$ equivalent ("$MTCO_2E$") during the 24-month construction period.

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

3. LEC will use best practices to control its construction-related GHG emissions.

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

5. State government has a responsibility to ensure a reliable electricity supply, consistent with environmental, economic, and health and safety goals.

6. California utilities are obligated to meet whatever demand exists from any and all customers.

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

8. The maximum annual CO_2 emissions from LEC's operation will be 936,000 $MTCO_2$, which constitutes an emissions performance factor of 0.36 $MTCO_2$ / MWh.

9. The SB 1368 EPS is the only LORS applicable to LEC's GHG emissions.

10. AB 32 requires CARB to adopt regulations that will reduce statewide GHG emissions, by the year 2020, to the 1990 level. Executive Order S-3-05 requires a further reduction, by the year 2050, to 80 percent below the 1990 level.

11. The California Renewable Portfolio Standard (RPS) requires the state's electric utilities obtain at least 20 percent of the power supplies from renewable sources by the year 2020, and recent gubernatorial Executive Orders increase the requirement to 33 percent.

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

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

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

15. LEC will have a heat rate of approximately 6,824 Btu/kWh.

16. LEC will be more efficient, and emit fewer GHG emissions during any hour of operation than any other new and existing units in San Joaquin County and Stanislaus County.

17. LEC will displace generation from less-efficient (i.e., higher-heat-rate and therefore higher-GHG-emitting) power plants.

18. LEC will probably replace power from coal-fired power plants that will be unable to contract with California utilities under the SB 1368 EPS, and power plants that must be retired because they currently use once-through cooling.

19. LEC operation will reduce overall GHG emissions from the electricity system.

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

21. Intermittent generation needs support from dispatchable generation, such as LEC, in order to be integrated effectively into the electricity system.

22. LEC operation will support the addition of renewable generation into the electricity system, which will further reduce system GHG emissions.

23. The addition of some efficient, dispatchable, natural-gas-fired generation will be necessary to integrate renewables into California's electricity system and meet the state's renewable portfolio and GHG goals, but the need for it is limited and will decrease as technology advances make round-the-clock availability of renewables generation feasible.

CONCLUSIONS OF LAW

1. The GHG emissions from a power plant's operation should be assessed in the context of the operation of the entire electricity system of which the plant is an integrated part.

2. LEC's construction-related GHG emissions will not cause a significant adverse environmental impact.

3. LEC's operational GHG emissions will not cause a significant adverse environmental impact.

4. LEC's GHG emissions will meet or exceed the SB 1368 EPS.

5. LEC's operation will help California utilities meet their renewable portfolio obligations.

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

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

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

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

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

B. AIR QUALITY

This section examines the potential adverse impacts of criteria air pollutant emissions resulting from project construction and operation. In consultation with the local air pollution control district, the Commission determines whether the project will likely conform with applicable LORS, whether it will likely result in significant air quality impacts, including violations of ambient air quality standards, and whether the project's mitigation measures will likely reduce potential impacts to insignificant levels.

Applicant and Staff reached agreement on all relevant issues, including the Conditions of Certification with the exception of Condition of Certification **AQ-SC9** regarding limits on ammonia slip. The evidence contained in the record is otherwise undisputed. (Exs. 1; 2; 5; 6; 10; 11; 12; 17; 18; 19; 20; 22; 25; 30; 34; 36; 41; 45; 46; 47; 48; 50; 51; 300; 303; 01/28/10 RT: 1-35.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

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 (O3), nitrogen dioxide (NO_2), lead (Pb), particulate matter less than 10 microns in diameter (PM10) and particulate matter less than 2.5 microns in diameter (PM2.5). 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 PM10 and PM2.5, which are primarily NO_X, sulfur oxides (SO_X), and ammonia (NH_3). Sulfur oxides (SO_X) react in the atmosphere to form particulate matter and are major contributors to acid rain. (Ex. 303, p. 4.1-1.)

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 below in **AIR QUALITY Table 1** of this Decision. (Ex. 303, pp. 4.1-6.)

AIR QUALITY Table 1
State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standard	Federal Standard
Ozone (O_3)	1 Hour	0.09 ppm (180 µg/m^3)	None
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)
Respirable Particulate Matter (PM10)	24 Hour	50 µg/m^3	150 µg/m^3
	Annual	20 µg/m^3	None
Fine Particulate Matter (PM2.5)	24 Hour	None	35 µg/m^3
	Annual	12 µg/m^3	15 µg/m^3
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)
	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m^3)	None
	Annual	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m^3)	None
	3 Hour	None	0.5 ppm (1300 µg/m^3)
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)
	Annual	None	0.03 ppm (80 µg/m^3)

(Ex. 303, p. 4.1-6.)

In general, an area is designated as “attainment” if the concentration of a particular air contaminant does not exceed the standard. Likewise, an area is designated as "non-attainment” for an air contaminant if that contaminant standard is violated. Where not enough ambient data are available to support designation as either attainment or non-attainment, the area can be designated as unclassified. An area could be attainment for one air contaminant while non-attainment for another, or attainment for the federal standard and non-attainment for the state standard for the same air contaminant. (Ex. 303, p. 4.1-7.)

The Lodi Energy Center (LEC) Project is located within the San Joaquin Valley and under the jurisdiction of the San Joaquin Valley Air Pollution Control District (District). Violations of Federal and State Ambient Air Quality Standards for O_3, particulate matter, and CO have occurred historically throughout the region. Since the early 1970s, substantial progress has been made toward controlling these pollutants. Although air quality improvements have occurred, violations of

standards for particulate matter and ozone persist. (Ex. 303, pp. 4.1-1 and 4.1-7.)

Air Quality Table 2
Attainment Status of San Joaquin Valley Air Pollution Control District

Pollutants	Federal Classification	State Classification
Ozone (1-hr)	No Federal Standard	**Nonattainment (Severe)**
Ozone (8-hr)	**Nonattainment (Serious)** [a]	**Nonattainment**
PM10	Attainment [b]	**Nonattainment**
PM2.5	**Nonattainment**	**Nonattainment**
CO	Attainment	Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

Source: SJVAPCD 2008 (http://www.valleyair.org/aqinfo/attainment.htm).
Notes:
[a] In April 2007, the SJVAPCD Governing Board proposed to re-classify the region as "extreme" nonattainment, and the U.S. EPA is reviewing the request.
[b] In November 2008, EPA redesignated the San Joaquin Valley to attainment for the PM10 National Ambient Air Quality Standard (NAAQS) and approved the PM10 Maintenance Plan.
(Ex. 303, p. 4.1-7.)

The local and recent ambient air quality data show existing violations of ambient air quality standards for ozone, PM10, and PM2.5. The analysis in evidence uses the highest local (Stockton) background ambient air concentrations as the baseline in the analysis of potential ambient air quality impacts for the LEC project. Data from the nearest site in Stockton is used for CO and NO_2, and the Bethel Island site is used for SO_2. The highest concentrations are shown in **Air Quality Table 3**. (Ex. 303, p. 4.1-11.)

Air Quality Table 3
LEC, Highest Local Background Concentrations
Used in Staff Assessment (µg/m^3)

POLLUTANT	Averaging Time	Background	Limiting Standard	Percent of Standard
PM10	24 hour	**104.5**	50	**209**
	Annual	**33.4**	20	**167**
PM2.5	24 hour	**81.2**	35	**232**
	Annual	**14.4**	12	**120**
CO	1 hour	5,500	23,000	24
	8 hour	2,640	10,000	26
NO_2	1 hour	147	339	43
	Annual	34	57	60
SO_2	1 hour	46.9	655	7
	24 hour	18.3	105	17
	Annual	5.2	80	7

(Ex. 303, p. 4.1-12.)

The LEC combined cycle power plant would include the following stationary sources of emissions. A stationary natural-gas fired combustion turbine generator (CTG), Siemens "Flex Plant 30" with rapid startup technology, nominal power generation rate of 200.8 MW at a heat input capacity of 2,142 MMBtu/hr, in a combined-cycle configuration with a heat recovery steam generator (HRSG) that does not use duct firing; one condensing steam turbine generator (STG) rated at 95 MW (nominal); one 36.5 MMBtu/hr capacity natural gas-fired auxiliary boiler with ultra low NOx burners for maintaining heat in the steam generator and steam turbine; one new 7-cell cooling tower; and, an administration building, including the control room, office space, maintenance shop, warehouse, and communication systems shared by the LEC and the Northern California Power Agency (NCPA) Combustion Turbine Project #2 (STIG) plant. NCPA would be a common owner and operator of the existing STIG plant and the LEC plant, therefore some existing facilities would be shared between the two plants. Specifically, the facilities will share the anhydrous ammonia system, including both the 12,000-gallon storage tank and unloading facilities; the 230-kilovolt (kV) switchyard and interconnect; the fire systems, including fire water storage tanks and diesel-fired emergency fire pump engine; domestic water systems, including eye wash stations and emergency showers;

and the existing Class I underground injection well (to be used for backup only). (Ex. 303, pp. 4.1-12 to 4.1-13.)

The existing STIG plant CTG and fire pump engine currently operate on an as-needed basis, with an annual capacity factor of about 20 percent (1,800 hours annually) for each recent year. **Air Quality Table 4** summarizes the allowable (permitted) emissions for the existing STIG plant and the average actual emissions including 2006, 2007, and the first nine months of 2008. (Ex. 303, p. 4.1-13.)

Air Quality Table 4
Existing NCPA STIG Plant, Allowable Emissions and Actual Emissions (lb/yr)

Source	NOx	VOC	PM10/ PM2.5	CO	SOx
Existing Allowable Emissions	**20.4**	**25.9**	**8.8**	**58.8**	**5.7**
Existing STIG Plant 2006	3.7	3.4	1.4	3.8	0.2
Existing STIG Plant 2007	3.5	4.3	1.8	4.7	0.2
Existing STIG Plant 2008 (Q1 to Q3)	3.3	4.0	1.7	4.6	0.2

(Ex. 303, p. 4.1-13.)

1. Construction Emissions

Construction of LEC is expected to take about 24 months. On-site construction activities include site preparation, foundation work, installation of major equipment, and construction/installation of major structures. During the construction period, air emissions would be generated from the exhaust of off-road/non-road construction equipment and on-road vehicles and fugitive dust from activity on unpaved surfaces and material handling. Construction activities would typically occur between 6 a.m. and 11 p.m., Monday through Saturday. Additional hours may be necessary to make up schedule deficiencies, or to complete critical construction activities such as pouring concrete at night during hot weather, working around time-critical shutdowns and constraints. The Applicant expects to use U.S. EPA Tier 3 certified engines for on-site (off-road) construction equipment larger than 100 horsepower and Tier 2 certified engines for equipment under 100 hp. During some construction period and during the initial commissioning phase of the project, some activities would continue 24 hours per day, 7 days per week. The project would also include a new 2.5 mile

long natural gas pipeline and a connection to an existing recycled water pipeline. These linear facilities would be constructed in a 2-month window prior to or concurrent with the construction of the project. (Ex. 303, p. 4.1-14.)

Fugitive dust emissions would result from:

- Dust entrained during preparation and grading/excavation at the construction site and along linear facilities;
- Dust entrained during on-site travel on paved and unpaved surfaces;
- Dust entrained during aggregate and soil loading and unloading operations; and
- Wind erosion of soil at areas disturbed during construction activities.

Combustion emissions during construction would result from:

- Exhaust from the diesel construction equipment used for site preparation, grading, excavation, trenching, and construction of on-site structures;
- Exhaust from water trucks used to control construction dust emissions;
- Exhaust from portable welding machines;
- Exhaust from pickup trucks and diesel trucks used to transport workers and materials around the construction site;
- Exhaust from diesel trucks used to deliver concrete, fuel and construction supplies to the construction site; and
- Exhaust from automobiles used by workers to commute to the construction site.

Estimates for the highest daily emissions and total annual emissions over the 24-month construction period are shown in **Air Quality Table 5**.

Air Quality Table 5
LEC, Estimated Maximum Construction Emissions

Construction Activity	NOx	VOC	PM10	PM2.5	CO	SOx
On-site Construction Equipment (lb/day)	80.6	7.7	4.5	4.5	51.4	0.1
On-site Fugitive Dust (lb/day)	---	---	21.0	4.9	---	---
Off-site (On-road) Worker Travel, Truck Deliveries, Dust (lb/day)	179.5	24.9	8.5	8.5	187.2	0.25
Off-site Linear Facility Equipment and Fugitive Dust (lb/day)	96.8	8.5	10.8	4.8	48.7	0.10
Maximum Daily Construction Emissions (lb/day)	**356.9**	**41.1**	**44.8**	**22.7**	**287.3**	**0.45**
On-site Construction Equipment (tpy)	7.2	0.7	0.4	0.4	4.6	0.01
On-site Fugitive Dust (tpy)	---	---	1.6	0.3	---	---
Off-site (On-road) Worker Travel & Truck Deliveries (tpy)	2.3	1.7	0.2	0.2	17.7	0.02
Off-site Linear Facility Equipment and Fugitive Dust (tpy)	2.1	0.2	0.2	0.1	1.0	<0.01
Peak Annual Construction Emissions (tpy)	**11.6**	**2.6**	**2.4**	**1.0**	**23.3**	**0.03**

Worst-case totals assume simultaneous maximum emissions during linear facility construction.
Note: Different activities have maximum emissions at different time during the construction period; therefore, total maximum daily, monthly, and annual emissions might be different from the summation of emissions from individual activities.
(Ex. 303, p. 4.1-15).

The Applicant-proposed measures for reducing engine emissions during construction of LEC including:

- Operational measures, such as limiting time spent with the engine idling by shutting down equipment when not in use;
- Regular preventive maintenance to prevent emission increases due to engine problems;
- Use of low sulfur and low aromatic fuel meeting California standards for motor vehicle diesel fuel; and
- Use of low-emitting gas and diesel engines meeting state and federal emissions standards for construction equipment, including, but not limited

to, catalytic converter systems and diesel particulate filter systems. (Ex. 303, p. 4.1-22).

The Applicant-proposed control strategies for fugitive dust emissions during construction of LEC include:

- Use either water application or chemical dust suppressant application to control dust emissions from on-site unpaved road travel and unpaved parking areas;
- Use vacuum sweeping and/or water flushing of paved road surfaces to remove buildup of loose material to control dust emissions from travel on the paved access road (including adjacent public streets impacted by construction activities) and paved parking areas;
- Cover all trucks hauling soil, sand, and other loose materials or require all trucks to maintain at least two feet of freeboard;
- Limit traffic speeds on all unpaved site areas to 15 mph;
- Install sandbags or other erosion control measures to prevent silt runoff to roadways;
- Replant vegetation in disturbed areas as quickly as possible;
- Use wheel washers or wash off tires of all trucks exiting construction site; and
- Mitigate fugitive dust emissions from wind erosion of areas disturbed from construction activities (including storage piles) by application of either water or chemical dust suppressant. (Ex. 303, pp. 4.1-22 to 4.1-23.)

The Applicant proposes to reduce construction-related emissions of particulate matter, particulate matter precursors, and ozone precursors by implementing measures consistent with local air district recommendations, soil erosion control requirements, and nuisance prohibitions. (Ex. 303, p. 4.1-22.)

Additional measures will reduce construction-phase impacts to a less than significant level by further reducing construction emissions of particulate matter and combustion contaminants. The evidence indicates that the short-term and variable nature of construction activities warrants a qualitative approach to mitigation. Construction emissions and the effectiveness of mitigation varies widely depending on variable levels of activity, the specific work taking place, the specific equipment, soil conditions, weather conditions, and other factors, making precise quantification difficult. Despite this variability, there are a

number of feasible control measures that can be implemented to significantly reduce construction emissions. The parties agree on the requirement of extensive use of heavy diesel-powered construction equipment with ARB-certified low emission diesel engines. In addition, prior to beginning construction the project owner will provide an Air Quality Construction Mitigation Plan (AQCMP) that specifically identifies mitigation measures to be employed by NCPA to limit air quality impacts during construction. Conditions of Certification **AQ-SC1** through **AQ-SC5** implement these requirements. These Conditions are consistent with both the NCPA's proposed mitigation and the Conditions of Certification adopted in similar prior licensing cases. Compliance with these Conditions would substantially eliminate the potential for significant air quality impacts during construction of the LEC Project. (Ex. 303, p. 4.1-23.)

Initial Commissioning Emissions

New electrical generation facilities must go through initial commissioning phases before becoming commercially available to generate electricity. During this period, initial firing causes greater emissions than those that occur during normal operations because of the need to tune the combustor, conduct numerous startups and shutdowns, operate under low loads, and conduct testing before emission control systems are functioning or fine-tuned for optimum performance. (Ex. 303, p. 4.1-15.)

The Applicant identifies the series of commissioning tests and expects that up to 292 hours of operation over approximately 28 days would be needed accomplish the various commissioning activities. The total initial commissioning emissions are presented in **Air Quality Table 6.** (Ex. 303, p. 4.1-16.)

Air Quality Table 6
LEC, Maximum Initial Commissioning Emissions (hourly and daily)

Commissioning Source	NOx	VOC	PM10/ PM2.5	CO	SOx
CTG/HRSG (lb/hr)	400.0	16.0	9.0	2,000	6.1
CTG/HRSG (lb/day)	4,000	192	108	20,000	73.1

(Ex. 303, p. 4.1-16.)

Operation Emissions

Particulate matter emissions from routine operation would cause a significant impact because they will contribute to existing violations of PM10 and PM2.5 ambient air quality standards. The predicted maximum concentrations of non-reactive pollutants are summarized in **Air Quality Table 7**. (Ex. 303, p. 4.1-24.)

Air Quality Table 7
LEC, Routine Operation Maximum Impacts (µg/m^3)

Pollutant	Averaging Time	Modeled Impact	Background	Total Impact	Limiting Standard	Percent of Standard
PM10	24 hour	3.7	**104.5**	**108.2**	50	**216**
	Annual	0.6	**33.4**	**34.0**	20	**170**
PM2.5	24 hour	3.7	**81.2**	**84.9**	35	**243**
	Annual	0.6	**14.4**	**15.0**	12	**125**
CO	1 hour	337.3	5,500	5,837.3	23,000	25
	8 hour	110.2	2,640	2,750.2	10,000	28
NO_2	1 hour [a]	28.5	147	175.5	339	52
	Annual	0.6	34	34.6	57	61
SO_2	1 hour	3.8	46.9	50.7	655	8
	24 hour	1.4	18.3	19.7	105	19
	Annual	0.2	5.2	5.4	80	7

(Ex. 303, p. 4.1-24)

The project's gaseous emissions of NO_x, SO_x, VOC, and ammonia are precursor pollutants that can contribute to the formation of secondary pollutants, ozone, PM10, and PM2.5. Gas-to-particulate conversion in ambient air involves complex chemical and physical processes that depend on many factors, including local humidity, pollutant travel time, and the presence of other compounds. Currently, there are no agency-recommended models or procedures for estimating ozone or particulate nitrate or sulfate formation from a single project or source. However, because of the known relationships of NO_x and VOC to ozone and of NO_x, SO_x, and ammonia emissions to secondary PM10 and PM2.5 formation, it can be said that unmitigated emissions of these pollutants would contribute to higher ozone and PM10/PM2.5 levels in the region. Significant impacts of ozone and PM10/PM2.5 precursors would be mitigated with SJVAPCD offsets (**AQ-SC7**). (Ex. 303, pp. 4.1-24 to 4.1-25.)

Ammonia is a particulate precursor but not a criteria pollutant. Reactive with sulfur and nitrogen compounds, ammonia is especially abundant in the San Joaquin Valley from natural sources, agricultural sources, and as a byproduct of

tailpipe controls on motor vehicles. Ammonia particulate forms more readily with sulfates than with nitrates, and particulate formation in the San Joaquin Valley has been found to be limited by the availability of SO_x and NO_x in ambient air, rather than the availability of ammonia. Offsetting SO_x and NO_x emissions would both avoid significant secondary PM10/PM2.5 impacts and reduce secondary pollutant impacts to a less than significant level. (Ex. 303, p. 4.1-25.)

Ammonia is injected into the flue gas stream as part of the SCR system that controls NO_x emissions. In the presence of the catalyst, the ammonia and NO_x react to form harmless elemental nitrogen and water vapor. However, not all of the ammonia reacts with the flue gases to reduce NO_x; a portion of the ammonia passes through the SCR and is emitted unaltered from the stacks. These ammonia emissions are known as ammonia slip. (Ex. 303, p. 4.1-19.)

The Applicant submitted evidence in support of a limit of ammonia slip emissions from the combined-cycle turbine system to 10 ppmvd, while the Energy Commission staff submitted evidence in support of a limit of ammonia slip emissions of 5 ppmvd (see Condition of Certification **AQ-SC9**). (Ex. 303, pp. 4.1-19, 4.1-25; 01/28/10 RT: 11-35.)

Applicant established that the 10 ppmvd ammonia slip limit is recommended by the SJAPCD in their Final Determination of Compliance (FDOC) (Ex. 50). At the evidentiary hearing, Applicant also submitted Exhibit 51 which is Chapter 3 of the 2008 San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) PM2.5 Plan, entitled, "What is Needed to Demonstrate Attainment." That document makes plain that ammonia is very abundant in the district but concludes that "ammonium nitrate formation is ultimately controlled by NO_x emission rates and the other species, including VOCs and background ozone, which control the rate of NO_x oxidation in winter, rather than by ammonia emissions." (Ex. 52, p. 3-10.) Applicant argued that there is no isolated ammonia impact per se to mitigate. (1/28/10 RT: 18-19.)

Applicant acknowledged that the Avenal and Palomar projects used the 5 ppmvd limit but pointed out that the issues were not adjudicated. Applicant cited the Walnut, East Altamont, Los Esteros and Cosumnes projects as examples where the Energy Commission heard evidence and decided that the 10 ppmvd limit was sufficient. (1/28/10 RT: 17-19.) Applicant's expert testified that the imposition of Condition of Certification **AQ-SC9** would cost the Applicant 2.5 to 3 million dollars over the life of the project. (1/28/10 RT: 19.)

Staff's expert testified that since ammonia is a precursor to PM2.5 it is considered significant unless mitigated. Staff argued that cases like Palomar and Avenal may not have been adjudicated before the Committees but involved hard-fought and negotiated Conditions of Certification regarding the ammonia slip limits. Staff's expert differentiated his approach from that of SJVAPCD by his reliance upon CEQA: "Our threshold of significance and our methodology for CEQA impacts is to reduce or offset all precursor pollutants, period…we all agree that ammonia is a precursor pollutant. Precursor pollutants shall be mitigated." (1/28/10 RT: 21-33.)

We agree with Staff that ammonia slip must be mitigated and the Applicant does not argue the contrary. The question is whether the mitigation is adequate at 10 ppmvd or needs further reduction to 5 ppmvd. There is no evidence in the record that explains why the10 ppmvd limit is insufficient or why the additional reduction is necessary. The evidence established that ammonia does not form particulate pollution without the introduction of nitrogen or sulfur so that in the absence of nitrogen or sulfur, a small increase in ammonia in an already ammonia rich environment would not add to particulate pollution. Staff has not offered evidence of a significant benefit from reducing the ammonia slip levels, nor evidence of a significant impact from not reducing it [*see* Cal. Code Regs., tit. 20 § 1748(e)]. On the other hand, the Applicant has proven that the proposed reduction would cost the project owner millions of dollars without providing a significant societal benefit. (1/28/10 RT: 19.)

Given the record before us, we are satisfied that the mitigation proposed by the SJVAPCD is adequate, and, therefore, we will not impose Condition **AQ-SC9**.
We hasten to point out that none of the other power plant projects cited by the Applicant are precedent. This Decision is also not precedent unless and until the Commission designates it so. Therefore, if Staff were to make a factual showing to support the need for increased mitigation of ammonia slip on any future power plant, that committee's decision must rely on the preponderance of the evidence in its own record without regard to other power plant siting decisions.

The evidence shows that impacts during fumigation conditions, impacts from commissioning-phase operations, and visibility impacts were evaluated and that there would either be no significant impact or that any impacts would be reduced below the level of significance by the mitigation measures we are adopting in this Decision. (Ex. 303, pp. 4.1-25 to 4.1-26.)

The Applicant has proposed emission control devices for the project. Those, along with the use of the latest clean-burning equipment and emission reduction credits (ERCs) would reduce the air quality impacts below the level of significance. (Ex. 303, p. 4.1-26.)

The combustion turbines would limit NOx formed during combustion using dry low-NO_X (DLN) combustors. To further reduce the emissions from the combustion turbines before they are exhausted into the atmosphere, flue gas controls, primarily catalyst systems, will be installed in the HRSG. The Applicant proposes two catalyst systems for each combustion turbine: the SCR system to reduce NO_X; and the oxidation catalyst system to reduce CO and VOC. The exclusive use of pipeline-quality natural gas, a relatively clean-burning fuel, would further limit the formation of VOC, PM10, and SO_2 emissions. The project would also achieve additional reduction in emissions by sharing facilities such as the fire protection system with the existing STIG. (Ex. 303, pp. 4.1-26 to 4.1-27.)

In addition to emission control strategies included in the project design, SJVAPCD Rule 2201 requires LEC to provide emission reduction credits to offset the new emissions of NO_x, VOC, PM10, and SOx. **Air Quality Table 8** summarizes the SJVAPCD Rule 2201 offset requirements for the LEC Project, with off-sets assumed to originate from shutdowns at sources located more than 15 miles away (distance offset ratio of 1.5-to-1). The SJVAPCD conducted a case-by-case analysis of requirements and distance ratios depending on the specific ERCs held by the Applicant. (Ex. 303, p. 4.1-27.)

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Air Quality Table 8

LEC, SJVAPCD Offset Determination and Requirements (lb/yr)

Source, as Allowed by SJVAPCD	NOx	VOC	PM10	CO	SOx
CTG/HRSG	151,415	33,003	78,840	192,650	53,436
Auxiliary Boiler	1,240	616	1,108	5,350	416
Cooling Tower	0	0	8,176	0	0
LEC Potential to Emit	**152,655**	**33,619**	**88,124**	**198,000**	**53,852**
Offset Requirements					
Existing NCPA STIG Potential Emissions	40,977	51,837	17,524	117,553	11,571
SJVAPCD Offset Threshold	20,000	20,000	29,200	200,000	54,750
Offsets Required by SJVAPCD for LEC [a, b]	152,655	33,619	76,448	---	10,673
Offsets Required by SJVAPCD at LEC [c]	**228,983**	**50,429**	**114,672**	**---**	**16,010**

Note:
a. Emission offsets are not required for CO if the Applicant demonstrates to the satisfaction of the Air Pollution Control Officer (APCO) that the ambient air quality standards are not violated in the areas to be affected, and such emissions will be consistent with Reasonable Further Progress, and will not cause or contribute to a violation of the standards.
b. SJVAPCD's offsetting rules exempt sources that have potential emissions below the offset threshold, allowing a credit for PM10 and SOx from the existing STIG in this case. This reduces the amount of offsets required for PM10 and SOx caused by LEC.
c. Includes a distance ratio factor of 1.5 for ERCs that would originate from sources over 15 miles away.
(Ex. 303, p. 4.1-27.)

The evidence shows that the Applicant holds sufficient NO_X and VOC ERCs that it will use to fully satisfy the District's NO_X and VOC offset requirements. These offsets will also satisfy the CEQA mitigation requirements for ozone impacts. (Ex. 303, pp. 4.1-28 to 4.1-29.)

The evidence also shows that the Applicant holds SO_X and PM10 ERCs sufficient to fully satisfy the District offset requirements for PM10. This will be accomplished through the use of interpollutant trading ratios established by the District. Since SOx is accepted as one of the major precursors of PM10 and PM 2.5 through reaction with ammonia, reductions in SOx can reduce particulate formation. The SJVAPCD conducted a district-wide analysis in March 2009 and concluded that a one-to-one interpollutant ratio would be protective of managing regional PM10/PM2.5 impacts and progress towards attainment. However, the District's use of a one-to-one interpollutant ratio for Rule 2201 compliance leads to fewer SOx reductions for particulate matter than ratios used by SJVAPCD in some past cases. Due to the distance ratio of 1.5, LEC would provide PM10/PM2.5 precursor ERCs at an offset ratio of greater than one-to-one for the emissions over the SJVAPCD offset threshold. Condition of Certification (**AQ-SC7**) and the District's offset requirements ensure that LEC would meet or exceed that minimum offsetting goal for all ozone and particulate matter impacts. (Ex. 303, p. 4.1-30.)

We therefore find that the proposed emission offset package, along with the emissions controls described above, would mitigate all project air quality impacts to a less than significant level. We adopt Conditions of Certification **AQ-SC6** through **AQ-SC8** to incorporate future changes to the air quality permits and to ensure ongoing compliance during commissioning and routine operation through quarterly reports. (Ex. 303, p. 4.1-31.)

Cumulative Impacts and Mitigation

"Cumulative impacts" are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts." (CEQA Guidelines, § 15355.) Such impacts can be relatively minor yet still be significant when combined with other closely related past, present, and known or reasonably foreseeable future projects. (Ex. 303, p. 4.1-31.)

Criteria pollutants have impacts that are usually cumulative by their nature. Even if a project would not, by itself, cause a violation of a federal or state criteria pollutant standard, it may contribute to violations of criteria pollutant standards because of pre-existing elevated background conditions. Air districts attempt to reduce background criteria pollutant levels by adopting attainment plans, which are multi-faceted programmatic approaches to attainment. Attainment plans typically include new source review requirements that provide

offsets and use Best Available Control Technology (BACT), combined with more stringent emissions controls on existing sources. (Ex. 303, p. 4.1-31.)

The LEC Project is subject to SJVAPCD rules and regulations that specify performance standards, offset requirements, and emission control requirements for stationary sources. The regulations also include requirements for obtaining Authority to Construct (ATC) permits and subsequent operating permits. (Ex. 303, p. 4.1-32.)

The SJVAPCD made a determination of how the project would comply with the offset requirements and other District rules, and that the LEC project would comply with recently adopted plans and the changing regulatory environment (Ex. 50). Because the project would control ozone precursor emissions and use ERCs to fully offset ozone precursors as required by existing rules and regulations, the project will not likely conflict with the District's 2007 Ozone Plan or regional ozone attainment goals. (Ex. 303, p. 4.1-32.)

The District's 2007 PM10 Maintenance Plan illustrates how the SJVAPCD has implemented aggressive PM10 controls in the region, including Reasonably Available Control Measures (RACM) for large existing sources of PM10 and fugitive dust. The 2007 PM10 Maintenance Plan includes a request for reclassification to "attainment" for the federal PM10 standard, and it provides for continued attainment for 10 years from the designation. In November 2008, the U.S. EPA redesignated the SJVAPCD to attainment for the federal PM10 standard. (Ex. 303, p. 4.1-32.)

The 2008 PM2.5 Plan (Ex. 51) was adopted by the SJVAPCD Governing Board on April 30, 2008 and it includes measures for attaining the 1997 and 2006 federal PM2.5 standards. The 2008 PM2.5 Plan shows that emission reductions of NO_x, directly emitted PM2.5, and SO_2 are needed to demonstrate attainment of the PM2.5 NAAQS in the San Joaquin Valley. (Ex. 303, p. 4.1-32.)

The SJVAPCD 2007 PM10 Maintenance Plan indicates that the minimum ratio would be one-to-one with higher interpollutant ratios if appropriate under Rule 2201. The one-to-one ratio was developed by the SJVAPCD based on modeling conducted in support of the 2008 PM2.5 Plan. Although there is no formal federal endorsement of the District's interpollutant trading approach, the record establishes that the LEC Project would not likely conflict with regional particulate matter attainment goals. The SJVAPCD shows that LEC is likely to comply with the particulate matter plans by meeting its permit requirements and

complying with the existing applicable rules and regulations. (Ex. 303, p. 4.1-33.)

Cumulative Impacts

The project and other reasonably foreseeable projects could cause impacts that would be locally combined if present and future projects would introduce stationary sources that are not included in the "background" conditions. Reasonably foreseeable future projects are those that are either currently under construction or in the process of being approved by a local air district or municipality. Projects with stationary sources located up to six miles from the project site usually need to be considered by the analysis. The SJVAPCD reported six facilities, but only three projects would involve modifications resulting in potentially increased emissions of more than 10 pounds per day of any contaminant other than VOC. The SJVAPCD identified the following facilities and stationary sources:

- **Existing NCPA STIG.** The existing STIG, adjacent to the LEC, would not experience any foreseeable change as a result of the LEC nor is any change to the existing STIG proposed. The existing stationary sources related to the STIG were included in the parties' analysis of cumulative impacts.
- **Facility #N-19.** Proposed natural gas-fired boiler (9900 Lower Sacramento Road, Stockton) is exempt from permitting requirements and would not involve more than 10 pounds per day of nonattainment pollutants or precursors. This source is not included in the cumulative analysis because it would result in exempt emissions of CO that would not be likely to cause or contribute to nonattainment.
- **Facility #N-5695.** Proposed dairy digester gas-fired internal combustion engine (401 W. Armstrong Road, Lodi). This source is not included in the cumulative analysis because it would replace two existing engines at the facility, resulting in no net emission increase.
- **Facility #N-7763.** Proposed diesel-fueled emergency standby internal combustion engine (8407 Kelley Drive, Stockton). This source is not included in the cumulative analysis because it would only operate intermittently, under emergency conditions, and fewer than 50 hours per year for testing purposes. (Ex. 303, p. 4.1-34.)

The record indicates that particulate matter emissions from LEC would be cumulatively considerable because they would contribute to existing violations of the PM10 and PM2.5 ambient air quality standards. Secondary impacts would also be cumulatively considerable for PM10, PM2.5, and ozone because emissions of particulate matter precursors (including SO_x) and ozone precursors (NO_x and VOC) would contribute to existing violations of the PM10, PM2.5, and ozone standards. To address the contribution caused by LEC to cumulative particulate matter and ozone impacts, the mitigation contained in the Conditions of Certification, which includes the conditions contained in the FDOC, would offset all nonattainment pollutants and their precursors at a minimum ratio of one-to-one. (Ex. 303, p. 4.1-35.)

Compliance with LORS

The FDOC was issued by the SJVAPCD in final form on January 22, 2010. (Ex. 50.) The Determination of Compliance would represent the federal New Source Review (NSR) permit. Compliance with all District Rules and Regulations was demonstrated to the District's satisfaction in the FDOC, and the FDOC conditions are presented in the Conditions of Certification below. (Ex. 303, p. 4.1-35.)

40 CFR 52.21, Prevention of Significant Deterioration

The District released Final Determination of Compliance for the Siemens equipment that establishes limits to avoid applicability of a Prevention of Significant Deterioration (PSD) permit. Condition of Certification **AQ-SC6** ensures that LEC will amend the Energy Commission license as necessary to incorporate changes triggered by District or U.S. EPA action related to PSD. (Ex. 303, p. 4.1-36.)

40 CFR 60, NSPS Subpart KKKK

The CTG and HRSG proposed for LEC will likely comply with the applicable emission limits by achieving a NOx emission rate of 2.0 ppmvd over any one-hour period except during startup and shutdown periods and during combustor tuning, although periods of tuning would only be allowed during commissioning. (Ex. 303, p. 4.1-36.)

State

LEC has demonstrated that the project would comply with Section 41700 of the California State Health and Safety Code, which restricts emissions that would cause nuisance or injury. Compliance with the District's and the Energy Commission staff's Conditions of Certification would enable Staff's affirmative finding. (Ex. 303, p. 4.1-36.)

Local

The District issued the FDOC stating that the proposed project is expected to comply with all applicable District rules and regulations. The District rules and regulations specify the emissions control and offset requirements for the new sources associated with the LEC. The SJVAPCD determined that the project would use BACT, and the ERCs approved and certified by the District would fully offset project nonattainment pollutant (including precursors) emissions so that they would be consistent with District rules and regulations. (Ex. 303, p. 4.1-36.)

Rule 2201, New Source Review and BACT

The FDOC requires the Applicant and District to establish startup time limits for the new Siemens CTG after demonstrating what is achieved in practice. The record indicates that LEC will achieve 2.0 ppm CO. (Ex. 303, p. 4.1-37.)

SJVAPCD Rule 4703

We adopt Conditions of Certification **AQ-18** and **AQ-19** to ensure compliance with the District's emissions limits.

FINDINGS OF FACT

Based on the evidence, we find as follows:

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

2. The LEC would include a stationary natural-gas fired CTG (Siemens "Flex Plant 30) with rapid startup technology, in a combined-cycle configuration with a HRSG that does not use duct firing; along with an STG and a

36.5 MMBtu/hr capacity natural gas-fired auxiliary boiler with ultra low NO_x burners for maintaining heat in the steam generator and steam turbine.

3. The LEC's CTG is nominally rated at 200.8 MW at a heat input capacity of 2,142 MMBtu/hr, in a combined-cycle configuration with the HRSG's condensing steam turbine generator (STG) nominally rated at 95 MW.

4. The LEC and STIG will share the 12,000-gallon storage tank and unloading facilities for anhydrous ammonia; the 230-kilovolt (kV) switchyard and interconnect; the fire systems, including fire water storage tanks and diesel-fired emergency fire pump engine which will contribute to emissions reductions for the LEC Project.

5. Construction of the LEC is expected to take about 24 months.

6. The project's construction-related impacts are temporary and short-term in nature.

7. The project's construction-related impacts are mitigated to below a level of significance by measures identified in the Conditions of Certification **AQ-SC1** through **AQ-SC5**.

8. The District is classified as non-attainment for the state 1-hour and federal 8-hour ozone standards, the state PM10 standards and the state and federal PM2.5 standards. The District meets applicable standards for all other criteria pollutants.

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

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

11. The limit set by the SJVAPCD is adequate mitigation for ammonia slip.

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

13. The proposed emission offset package contained in Condition of Certification **AQ-SC7**, along with the proposed emissions controls, will mitigate all project air quality impacts to a less than significant level.

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

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

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

CONCLUSIONS OF LAW

1. The mitigation measures imposed are sufficient to ensure that the LEC Project will conform with all applicable laws, ordinances, regulations, and standards relating to air quality.

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

CONDITIONS OF CERTIFICATION

AQ-SC1 Air Quality Construction Mitigation Manager (AQCMM): The project owner shall designate and retain an on-site AQCMM who shall be responsible for directing and documenting compliance with Conditions **AQ-SC3, AQ-SC4** and **AQ-SC5** for the entire project site and linear facility construction. The on-site AQCMM may delegate responsibilities to one or more AQCMM delegates. The AQCMM and AQCMM delegates shall have full access to all areas of construction on the project site and linear facilities, and shall have the authority to stop any or all construction activities as warranted by applicable construction mitigation Conditions. The AQCMM and AQCMM delegates may have other responsibilities in addition to those described in this Condition. The AQCMM shall not be terminated without written consent of the construction project manager (CPM).

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

AQ-SC2 Air Quality Construction Mitigation Plan (AQCMP): The project owner shall provide, for approval, an AQCMP that details the steps to be taken and the reporting requirements necessary to ensure compliance with Conditions of Certification **AQ-SC3, AQ-SC4** and **AQ-SC5**.

Verification: At least 60 days prior to the start of any ground disturbance, the project owner shall submit the AQCMP to the CPM for approval. The CPM will

notify the project owner of any necessary modifications to the plan within 30 days from the date of receipt. The AQCMP must be approved by the CPM before the start of ground disturbance.

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

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

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

C. Visible speed limit signs shall be posted at the construction site entrances.

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

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

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

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

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

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

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

is visible on the public roadways.

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

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

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

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

AQ-SC4 Dust Plume Response Requirement: The AQCMM or an AQCMM delegate shall monitor all construction activities for visible dust plumes. Observations of visible dust plumes with the potential to be transported off the project site, 200 feet beyond the centerline of the construction of linear facilities, or within 100 feet upwind of any regularly occupied structures not owned by the project owner indicate that existing mitigation measures are not providing effective mitigation. The AQCMM or delegate shall then implement the following procedures for additional mitigation measures in the event that such visible dust plumes are observed.

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

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

Step 3: The AQCMM or delegate shall direct a temporary shutdown of the activity causing the emissions if Step 2 specified above fails to result in effective mitigation within one hour of the original determination. The activity shall not restart until the AQCMM or delegate is satisfied that appropriate additional mitigation or other site

conditions have changed so that visual dust plumes will not result upon restarting the shutdown source. The owner/operator may appeal to the CPM any directive from the AQCMM or delegate to shut down an activity, provided that the shutdown shall go into effect within one hour of the original determination, unless overruled by the CPM before that time.

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

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

A. All diesel-fueled engines used in the construction of the facility shall have clearly visible tags issued by the on-site AQCMM showing that the engine meets the Conditions set forth herein.

B. All construction diesel engines with a rating of 50 hp or higher shall meet, at a minimum, the Tier 3 California Emission Standards for Off-Road Compression-Ignition Engines, as specified in California Code of Regulations, Title 13, section 2423(b)(1), unless a good faith effort that is certified by the on-site AQCMM demonstrates that such engine is not available for a particular item of equipment. This good faith effort shall be documented with signed written correspondence by the appropriate construction contractors along with documented correspondence with at least two construction equipment rental firms. In the event that a Tier 3 engine is not available for any off-road equipment larger than 50 hp, that equipment shall be equipped with a Tier 2 engine or an engine that is equipped with retrofit controls to reduce exhaust emissions of nitrogen oxides (NOx) and diesel particulate matter (DPM) to no more than Tier 2 levels unless certified by engine manufacturers or the on-site AQCMM that the use of such devices is not practical for specific engine types. For purposes of this Condition, the use of such devices is “not practical” for the following, as well as other, reasons.

1. There is no available retrofit control device that has been verified by either the California Air Resources Board or U.S. Environmental Protection Agency to control the engine in question to Tier 2 equivalent emission levels and either a Tier 1 engine or the highest level of available control is being used; or

2. The construction equipment is intended to be on site for five days or less.

3. The CPM may grant relief from this requirement if the AQCMM can demonstrate a good faith effort to comply with this requirement and that compliance is not possible;
4. Equipment owned by specialty subcontractors may be granted an exemption, for single equipment items on a case-by-case basis, if it can be demonstrated that extreme financial hardship would occur if the specialty subcontractor had to rent replacement equipment, or if it can be demonstrated that a specialized equipment item is not available by rental.

C. The use of a retrofit control device may be terminated immediately, provided that the CPM is informed within 10 working days of the termination and the AQCMM demonstrates that one of the following conditions exists:

1. The use of the control device is excessively reducing the normal availability of the construction equipment due to increased down time for maintenance, and/or reduced power output due to an excessive increase in back pressure.
2. The control device is causing or is reasonably expected to cause significant engine damage.
3. The control device is causing or is reasonably expected to cause a significant risk to workers or the public.
4. Any other seriously detrimental cause which has the approval of the CPM prior to implementation of the termination.

D. All heavy earth-moving equipment and heavy duty construction-related trucks with engines meeting the requirements of (b) above shall be properly maintained and the engines tuned to the engine manufacturer's specifications.

E. All diesel heavy construction equipment shall not idle for more than five minutes, to the extent practical.

F. Construction equipment will employ electric motors when feasible.

Verification: The project owner shall include in the MCR: (1) a summary of all actions taken to maintain compliance with this Condition; (2) a list of all heavy equipment used on site during that month, including the owner of that equipment and a letter from each owner indicating that the equipment has been properly maintained; and (3) any other documentation deemed necessary by the CPM and AQCMM to verify compliance with this Condition. Such information may be provided via electronic format or disk at the project owner's discretion.

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

to any permit proposed by the District or U.S. EPA, and any revised permit issued by the District or U.S. EPA, for the project.

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

AQ-SC7 The project owner shall provide emission reductions in the form of offsets or emission reduction credits (ERCs) in the quantities of at least 152,655 lb NOx, 33,619 lb VOC, 88,124 lb PM10, and 53,852 lb SOx emissions. The project owner shall demonstrate that the reductions are provided in the form required by the District.

The project owner shall surrender the ERCs from among those that are listed in the District Final Determination of Compliance Conditions (SJVAPCD2010a) or a modified list, as allowed by this condition. If additional ERCs are submitted, the project owner shall submit an updated table including the additional ERCs to the CPM. The project owner shall request CPM approval for any substitutions, modifications, or additions to the listed credits.

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, and that the requested change(s) will not cause the project to result in a significant environmental impact. The District must also confirm that each requested change is consistent with applicable federal and state laws and regulations.

Verification: The project owner shall submit to the CPM records showing that the project's offset requirements have been met prior to initiating construction. If the CPM approves a substitution or modification to the list of ERCs, the CPM shall file a statement of the approval with the project owner and Commission docket. The CPM shall maintain an updated list of approved ERCs for the project.

AQ-SC8 The project owner shall submit to the CPM quarterly operation reports that include operational and emissions information as necessary to demonstrate compliance with the Conditions of Certification. The quarterly operation report shall specifically note or highlight incidences of noncompliance.

Verification: The project owner shall submit quarterly operation reports to the CPM and APCO no later than 30 days following the end of each calendar quarter. This information shall be maintained on site for a minimum of five years and shall be provided to the CPM and District personnel upon request.

AQ-SC9 ***Deleted.***

DISTRICT CONDITIONS

The SJVACPD released a "draft" Final Determination of Compliance in November 2009 and the Final Determination of Compliance in January 2010 for the proposed Siemens equipment. The following conditions are from the Final Determination of Compliance (SJVAPCD2010a), as follows:

- Combined cycle system combustion turbine (AQ-1 to AQ-69);
- Facility-wide conditions for offsets (AQ-70 to AQ-79);
- Facility-wide conditions for dust control (AQ-80 to AQ-89);
- Facility-wide conditions for Acid Rain program (AQ-90 to AQ-103);
- Cooling tower (AQ-104 to AQ-116); and
- Auxiliary boiler (AQ-117 to AQ-159).

EQUIPMENT DESCRIPTION, UNIT N-2697-5-0

296 MW (NOMINAL) COMBINED-CYCLE ELECTRIC GENERATION PLANT CONSISTING OF A SIEMENS INDUSTRIAL FRAME "FLEX PLANT 30" STG6-5000F NATURAL GAS-FIRED TURBINE ENGINE WITH DRY LOW-NO_X COMBUSTORS, AN UNFIRED HEAT RECOVERY STEAM GENERATOR SERVED BY A SELECTIVE CATALYTIC REDUCTION WITH AMMONIA INJECTION AND AN OXIDIZATION CATALYST AND A STEAM TURBINE GENERATOR

AQ-1 The permittee shall not begin actual on-site construction of the equipment authorized by this Authority to Construct until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act]

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

AQ-2 This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]

Verification: No verification necessary.

AQ-3 Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Verification: The project owner shall submit to both the District and CPM the Title V Operating Permit application prior to operation.

AQ-4 The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-5 The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-6 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-7 Particulate matter emissions from the gas turbine system shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The project owner shall submit the results of source tests to both the District and CPM in accordance with **AQ-46**.

AQ-8 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

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

AQ-9 APCO or an authorized representative shall be allowed to inspect, as determined to be necessary, the required monitoring devices to ensure that such devices are functioning properly. [District Rule 1080]

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

AQ-10 Commissioning activities are defined as, but not limited to, all testing, adjustment, tuning, and calibration activities recommended by the equipment manufacturers and the construction contractor to ensure safe and reliable steady state operation of the gas turbine and associated electrical delivery systems. [District Rule 2201]

Verification: No verification necessary.

AQ-11 Commissioning period shall commence when all mechanical, electrical, and control systems are installed and individual system startup has been completed, or when a gas turbine is first fired, whichever occurs first. The commissioning period shall terminate when the plant has completed initial source testing, completed final plant tuning, and is available for commercial operation. [District Rule 2201]

Verification: The project owner shall submit a commissioning plan to the CPM and APCO for approval at least 30 days prior to first firing of the gas turbine describing the procedures to be followed during the commissioning period and the anticipated duration of each commissioning activity.

AQ-12 During the commissioning period, the emission rates from the gas turbine system shall not exceed any of the following limits: NOx (as NO2) - 400.00 lb/hr and 4,000 lb/day; VOC (as CH4) - 16.00 lb/hr and 192.0 lb/day; CO - 2,000 lb/hr and 20,000 lb/day; PM10 - 9.00 lb/hr and 108.0 lb/day; or SOx (as SO2) - 6.10 lb/hr and 73.1 lb/day. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-13 During commissioning period, NOx and CO emissions rate shall be monitored using installed and calibrated CEMS. [District Rule 2201]

Verification: The project owner shall submit to the CPM and APCO for approval the commissioning plan as required in **AQ-11**.

AQ-14 The total mass emissions of NOx, VOC, CO, PM10 and SOx that are emitted during the commissioning period shall accrue towards the quarterly emission limits. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-15 During commissioning period, the owner or operator shall keep records of the natural gas fuel combusted in the gas turbine system on hourly and daily basis. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-16 The duration of startup or shutdown period shall not exceed 3.0 hours per event for any type of startup event (hot, warm, or cold). [District Rules 2201 and 4703]

Verification: The project owner shall submit to the District and CPM the startup and shutdown event duration data demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-17 The combined startup and shutdown duration for all events shall not exceed 6.0 hours during any one day. [District Rule 2201]

Verification: The project owner shall submit to the District and CPM the startup and shutdown event duration data demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-18 The owner/operator shall maintain records of the date, start-up time, downtime for gas turbine and the steam turbine prior to startup, startup type, minute-by-minute turbine load (MW), and NOx and CO concentrations (ppmvd @ 15% O2) measurement using CEMS, for each startup event in the first 12 months of operation following the end of the commissioning period. [District Rule 2201]

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

AQ-19 Within 15 months of the end of the commissioning period, the owner/operator shall submit to the District, the CARB and the EPA proposed new time limits for each type of startup that reflect the effect of "Flex Plant 30" fast start-up technology. The proposed time limits shall be based on the required data collected in the first 12 months of operation following the end of the commissioning period. The submittal must include all CEMS data. [District Rule 2201]

Verification: A review of startup time limits and recommendations for new limits shall be provided to the CPM and APCO within 15 months of the end of the commissioning period.

AQ-20 A margin of compliance of 60 minutes (or less) may be added to the longest startup to establish a startup limit for each type of startup event (hot, warm, or cold). The established startup limit shall not exceed 3.0 hours. [District Rule 2201]

Verification: See Verification for **AQ-19**.

AQ-21 The District shall administratively establish appropriate startup times for each startup mode (hot, warm, or cold), and associated recordkeeping requirements. [District Rule 2201]

Verification: See Verification for **AQ-20**.

AQ-22 During all types of operation, including startup (cold, warm and hot) and shutdown periods, ammonia injection into the SCR system shall occur once the minimum temperature at the catalyst face has been reached to ensure NOx emission reductions can occur with a reasonable level of ammonia slip. The minimum catalyst face temperature shall be determined during the final design phase of this project and shall be submitted to the District at least 30 days prior to commencement of construction. [District Rule 2201]

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

AQ-23 The District shall administratively add the minimum temperature limitation established pursuant to the above condition in the final Permit to Operate. [District Rule 2201]

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

AQ-24 The SCR system shall be equipped with a continuous temperature monitoring system to measure and record the temperature at the catalyst face. [District Rule 2201]

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

AQ-25 During start-up and shutdown periods, the emissions shall not exceed any of the following limits: NOx (as NO2) - 160.00 lb/hr; CO - 900.00 lb/hr; VOC (as methane) - 16.00 lb/hr; PM10 - 9.00 lb/hr; SOx (as SO2) - 6.10 lb/hr; or Ammonia (NH3) - 28.76 lb/hr. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-26 Start-up is defined as the period of time during which a unit is brought from a shutdown status to its operating temperature and pressure, including the time required by the unit's emission control system to reach full operation. [District Rule 4703, 3.29]

Verification: No verification necessary.

AQ-27 Shutdown is defined as the period of time during which a unit is taken from an operational to a non-operational status ending when the fuel supply to the unit is completely turned off. [District Rule 4703, 3.26]

Verification: No verification necessary.

AQ-28 The emission control systems shall be in operation and emissions shall be minimized insofar as technologically feasible during startup and shutdown. [District Rule 4703, 5.3.2]

Verification: The project owner shall submit to the District and CPM the startup and shutdown event duration data demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-29 Except during startup and shutdown periods, emissions from the gas turbine system shall not exceed any of the following limits: NOx (as NO2) - 15.54 lb/hr and 2.0 ppmvd @ 15% O2; CO – 9.46 lb/hr and 2.0 ppmvd @ 15% O2; VOC (as methane) - 3.79 lb/hr and 1.4 ppmvd @ 15% O2; PM10 - 9.0 lb/hr; or SOx (as SO2) - 6.10 lb/hr. NOx (as NO2) emission limits are based on 1-hour rolling average period. All other emission limits are based on 3-hour rolling average period. [District Rules 2201, 4001 and 4703]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-30 NH3 emissions shall not exceed any of the following limits: 10.0 ppmvd @ 15% O2 over a 24-hour rolling average period, and 28.76 lb/hr. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-31 Each 3-hour rolling average period will be compiled from the three most recent one hour periods. Each one hour period shall commence on the hour. Each one hour period in a twenty-four hour rolling average for ammonia slip will commence on the hour. The twenty-four hour rolling average shall be calculated using the most recent twenty-four one-hour periods. [District Rule 2201]

Verification: No verification necessary.

AQ-32 Emissions from the gas turbine system, on days when a startup and/or shutdown occurs, shall not exceed the following limits: NOx (as NO2) - 879.7 lb/day; CO - 5,570.3 lb/day; VOC - 164.2 lb/day; PM10 - 216.0 lb/day; SOx (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-33 Emissions from the gas turbine system, on days when a startup and/or shutdown does not occur, shall not exceed the following: NOX (as NO2) - 373.0 lb/day; CO - 227.0 lb/day; VOC - 91.0 lb/day; PM10 - 216.0 lb/day; SOX (as SO2) - 146.4 lb/day, or NH3 - 690.3 lb/day. Daily emissions shall be compiled for a twenty-four hour period starting and ending at twelve-midnight. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-34 Gas turbine system shall be fired on PUC-regulated natural gas with a sulfur content of no greater than 1.0 grain of sulfur compounds (as S) per 100 dscf of natural gas. [District Rule 2201 and 40 CFR 60.4330(a)(2)]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-35 NOx (as NO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 38,038 lb; 2nd quarter: 38,411 lb; 3rd quarter: 37,126 lb; 4th quarter: 37,840 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-36 CO emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 142,312 lb; 2nd quarter: 142,539 lb; 3rd quarter: 86,374 lb; 4th quarter: 113,660 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-37 VOC emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 8,086 lb; 2nd quarter: 8,177 lb; 3rd quarter: 8,417 lb; 4th quarter: 8,323 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-38 NH3 emissions from the SCR system shall not exceed any of the following: 1st quarter: 62,122 lb; 2nd quarter: 62,812 lb; 3rd quarter: 63,502 lb; 4th quarter: 63,502 lb. [District Rule]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-39 PM10 emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 19,440 lb; 2nd quarter: 19,656 lb; 3rd quarter: 19,872 lb; 4th quarter: 19,872 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-40 SOx (as SO2) emissions from the gas turbine system shall not exceed any of the following: 1st quarter: 13,176 lb; 2nd quarter: 13,322 lb; 3rd quarter: 13,469 lb; 4th quarter: 13,469 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-41 The total CO emissions from the gas turbine system (N-2697-5) and the auxiliary boiler (N-2697-7) shall not exceed 198,000 pounds in any 12-consecutive month rolling period. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-42 A selective catalytic reduction (SCR) system and an oxidation catalyst shall serve the gas turbine system. [District Rule 2201]

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

AQ-43 The gas turbine engine and generator lube oil vents shall be equipped with mist eliminators or equivalent technology sufficient to limit the visible emissions from the lube oil vents to not exceed 5% opacity, except for a period not exceeding three minutes in any one hour. [District Rule 2201]

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

AQ-44 Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be

submitted for approval at least 15 days prior to testing. [District Rule 1081]

Verification: The project owner shall submit the proposed source test plan or protocol for the source tests 15 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 30 days prior to the proposed source test date and time. The project owner shall submit source test results no later than 60 days following the source test date to both the District and CPM.

AQ-45 Source testing shall be witnessed or authorized by District personnel and samples shall be collected by a California Air Resources Board (CARB) certified testing laboratory or a CARB certified source testing firm. [District Rule 1081]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-46 Source testing to measure startup and shutdown of NOx, CO, and VOC mass emission rates shall be conducted before the end of the commissioning period and at least once every seven years thereafter. CEM relative accuracy for NOx and CO shall be determined during startup and shutdown source testing in accordance with 40 CFR 60, Appendix F (Relative Accuracy Audit). If CEM data is not certifiable to determine compliance with NOX and CO startup emission limits, then startup and shutdown NOx and CO testing shall be conducted every 12 months. If an annual startup and shutdown NOx and CO relative accuracy audit demonstrates that the CEM data is certifiable, the startup and shutdown NOx and CO testing frequency shall return to the once every seven years schedule. [District Rule 1081]

Verification: The results and field data collected during source tests shall be submitted to the District and CPM within 60 days of testing and according to a pre-approved protocol (**AQ-44**). Testing for startup and shutdown emissions shall be conducted upon initial operation and at least once every seven years.

AQ-47 Source testing to determine compliance with the NOx, CO, VOC, and NH3 emission rates (lb/hr and ppmvd @ 15% O2) and PM10 emission rate (lb/hr) shall be conducted before the end of commissioning period and at least once every 12 months thereafter. [District Rules 2201 and 4703, 40 CFR 60.4400(a)]

Verification: The results and field data collected during source tests shall be submitted to the District and CPM within 60 days of testing and according to a pre-approved protocol (**AQ-44**). Testing for steady-state emissions shall be conducted upon initial operation and at least once every 12 months.

AQ-48 The sulfur content of each fuel source shall be: (i) documented in a valid purchase contract, a supplier certification, a tariff sheet or transportation contract, or (ii) monitored within 60 days after the end of commissioning period and weekly thereafter. If the sulfur content is less than or equal to 1.0 gr/100 dscf for eight consecutive weeks, then the monitoring frequency shall be every six months. If the result of any six month monitoring demonstrates that the fuel does not meet the fuel sulfur content limit, weekly monitoring shall resume until compliance is demonstrated for eight consecutive weeks. [District Rule 2201 and 40 CFR 60.4360, 60.4365(a) and 60.4370(c)]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-49 The following test methods shall be used: NOx - EPA Method 7E or 20 or CARB Method 100; CO - EPA Method 10 or 10B or CARB Method 100; VOC - EPA Method 18 or 25; PM10 - EPA Method 5 (front half and back half) or 201 and 202a; ammonia - BAAQMD ST-1B; and O2 - EPA Method 3, 3A, or 20 or CARB Method 100. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081 and 4703, 40 CFR 60.4400(1)(i)]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-50 Fuel sulfur content shall be monitored using one of the following methods: ASTM Methods D1072, D3246, D4084, D4468, D4810, D6228, D6667 or Gas Processors Association Standard 2377. [40 CFR 60.4415(a)(1)(i)]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-51 The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Verification: The project owner shall submit the source test report of results to both the District and CPM within 60 days of the completion of the tests.

AQ-52 A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rules 2201 and 4703]

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

AQ-53 The owner or operator shall install, certify, maintain, operate, and quality-assure a continuous emission monitoring system (CEMS) which continuously measures and records the exhaust gas NOx, CO, and O2 concentrations. Continuous emissions monitor(s) shall monitor emissions during all types of operation, including during startup and shutdown periods, provided the CEMS passes the relative accuracy requirement for startups and shutdowns specified herein. If relative accuracy of CEMS cannot be demonstrated during startup conditions, CEMS results during startup and shutdown events shall be replaced with startup emission rates obtained from source testing to determine compliance with emission limits contained in this document. [District Rules 1080, 2201 and 4703, 40 CFR 60.4340(b)(1) and 40 CFR 60.4345(a)]

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

AQ-54 The NOx and O2 CEMS shall be installed and certified in accordance with the requirements of 40 CFR Part 75. The CO CEMS shall meet the requirements in 40 CFR 60, Appendix F Procedure 1 and Part 60, Appendix B Performance Specification 4A (PS 4A), or shall meet equivalent specifications established by mutual agreement of the District, the CARB, and the EPA. [District Rule 1080 and 40 CFR 60.4345(a)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-55 The CEMS shall complete a minimum of one cycle of operation (sampling, analyzing, and data recording) for each 15-minute quadrant of the hour or shall meet equivalent specifications established by mutual agreement of the District, the CARB and the EPA. [District Rule 1080 and 40 CFR 60.4345(b)]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-56 The CEMS data shall be reduced to hourly averages as specified in §60.13(h) and in accordance with §60.4350, or by other methods deemed equivalent by mutual agreement with the District, the CARB, and the EPA. [District Rule 1080 and 40 CFR 60.4350]

Verification: The project owner shall submit to the CPM and APCO CEMS data reduced in compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-57 In accordance with 40 CFR Part 60, Appendix F, 5.1, the CO CEMS must be audited at least once each calendar quarter, by conducting cylinder gas audits (CGA) or relative accuracy audits (RAA). CGA or RAA may be conducted three of four calendar quarters, but no more than three calendar quarters in succession. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-58 The owner or operator shall perform RATA for CO as specified by 40 CFR Part 60, Appendix F, 5.1.1, at least once every four calendar quarters. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-59 The NOx and O2 CEMS shall be audited in accordance with the applicable requirements of 40 CFR Part 75. Linearity reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080]

Verification: The project owner shall submit to the CPM and APCO CEMS audits demonstrating compliance with this condition as part of the quarterly operation report (**AQ-SC8**).

AQ-60 Upon written notice from the District, the owner or operator shall provide a summary of the data obtained from the CEMS. This summary shall be in the form and the manner prescribed by the District. [District Rule 1080]

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

AQ-61 The facility shall install and maintain equipment, facilities, and systems compatible with the District's CEMS data polling software system and shall make CEMS data available to the District's automated polling system on a daily basis. Upon notice by the District that the facility's CEMS is not providing polling data, the facility may continue to operate without providing automated data for a maximum of 30 days per calendar year provided the CEMS data is sent to the District by a District-approved alternative method. [District Rule 1080]

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

AQ-62 The owner or operator shall maintain the following records: the date, time and duration of any malfunction of the continuous monitoring equipment; dates of performance testing; dates of evaluations, calibrations, checks, and adjustments of the continuous monitoring equipment; date and time period which a continuous monitoring system or monitoring device was inoperative. [District Rules 1080 and 2201 and 40 CFR 60.7(b)]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-63 The exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods and shall be equipped with safe permanent provisions to sample stack gases with a portable NOx, CO, and O2 analyzer during District inspections. The sampling ports shall be located in accordance with the CARB regulation titled California Air Resources Board Air Monitoring Quality Assurance Volume VI, Standard Operating Procedures for Stationary Emission Monitoring and Testing. [District Rule 1081]

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

AQ-64 Monitor Downtime is defined as any unit operating hour in which the data for NOx or O2 concentrations is either missing or invalid. [40 CFR 60.4380(b)(2)]

Verification: No verification necessary.

AQ-65 The owner or operator shall maintain records of the following items: 1) hourly and daily emissions, in pounds, for each pollutant listed in this permit on the days startup and or shutdown of the gas turbine system occurs, 2) hourly and daily emissions, in pounds, for each pollutant in this permit on the days startup and or shutdown of the gas turbine system does not occur, 3) quarterly emissions, in pounds, for each pollutant listed in this permit, and 4) the combined CO emissions (12 consecutive month rolling total) in pounds, for permit unit N-2697-5 and N-2697-7. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-66 The owner or operator shall maintain a stationary gas turbine system operating log that includes, on a daily basis, the actual local startup and stop time, total hours of operation, the type and quantity of fuel used, mode of start-up (cold, warm, or hot), duration of each start-up, and duration of each shutdown. [District Rule 2201 and 4703, 6.26, 6.28, 6.2.11]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-67 The owner or operator shall maintain all records of required monitoring data and support information for a period of five years from the date of data entry and shall make such records available to the District upon request. [District Rules 2201 and 4703, 6.2.4]

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

AQ-68 The owner or operator shall submit a written report of CEM operations for each calendar quarter to the District. The report is due on the 30th day following the end of the calendar quarter and shall include the following: Date, time intervals, data and magnitude of excess NOx emissions, nature and the cause of excess (if known), corrective actions taken and preventive measures adopted; Averaging period used for data reporting corresponding to the averaging period specified in the emission test period used to determine compliance with an emission standard; Applicable time and date of each period during which the CEM was inoperative, except for zero and span checks, and the nature of system repairs and adjustments; A negative declaration when no excess emissions occurred. [District Rule 1080 and 40 CFR 60.4375(a) and 60.4395]

Verification: The project owner shall submit to the District and CPM the report of CEM operations, emission data, and monitor downtime data in the quarterly operation report (**AQ-SC8**) that follows the definitions of this condition.

AQ-69 The owner or operator shall submit to the District information correlating the NOx control system operating parameters to the associated measured NOx output. The information must be sufficient to allow the District to determine compliance with the NOx emission limits of this permit when the CEMS is not operating properly. [District Rule 4703, 6.2.5]

Verification: The project owner shall submit to the District and CPM the report of CEM operations, emission data, and monitor downtime data in the quarterly operation report (**AQ-SC8**).

AQ-70 Prior to operating under ATCs N-2697-5-0 and N-2697-7-0, the permittee shall mitigate the following quantities of NOx: 1st quarter: 38,348 lb, 2nd quarter: 38,721 lb, 3rd quarter: 37,436 lb, and 4th quarter: 38,150 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-71 NOx ERCs S-2857-2, S-2848-2, S-2849-2, S-2850-2, S-2851-2, S-2852-2, S-2854-2, S-2855-2, C-915-2, C-916-2, C-914-2, N-755-2, N-754-2, S-2894-2 and S-2895-2 (or a certificate split from any of these certificates) shall be used to supply the required NOx offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-72 Prior to operating under ATCs N-2697-5-0 and N-2697-7-0, the permittee shall mitigate the following quantities of VOC: 1st quarter: 8,240 lb, 2nd quarter: 8,331 lb, 3rd quarter: 8,571 lb, and 4th quarter: 8,477 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-73 VOC ERC S-2860-1, and NOx ERCs S-2857-2, S-2848-2, S-2849-2, S-2850-2, S-2851-2, S-2852-2, S-2854-2, S-2855-2, C-915-2, C-916-2, C-914-2, N-755-2, N-754-2, S-2894-2 and S-2895-2 (or a certificate split from any of these certificates) shall be used to supply the required VOC offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing

requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-74 The District has authorized to use NOx reductions to overcome shortfall in the amount of VOC offsets at NOx/VOC interpollutant offset ratio of 1.00. [District Rule 2201]

Verification: No verification necessary.

AQ-75 Prior to operating under ATCs N-2697-5-0 and N-2697-7-0, the permittee shall mitigate the following quantities of SOx: 1st quarter: 2,668 lb, 2nd quarter: 2,668 lb, 3rd quarter: 2,668 lb, and 4th quarter: 2,668 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-76 SOx ERCs S-2843-5, S-2845-5, S-2858-5, N-759-5, N-758-5, S-2846-5 and N-757-5 (or a certificate split from any of these certificates) shall be used to supply the required SOx offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-77 Prior to operating under ATCs N-2697-5-0, N-2697-6-0 and N-2697-7-0, the permittee shall mitigate the following quantities of PM10: 1st quarter: 19,112 lb, 2nd quarter: 19,112 lb, 3rd quarter: 19,112 lb, and 4th quarter: 19,112 lb. Offsets shall be provided at the applicable offset ratio specified in Table 4-2 of Rule 2201 (as amended 9/21/06). [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-78 PM10 ERCs S-2844-4, C-911-4, N-756-4, C-913-4, C-912-4, and SOx ERCs S-2843-5, S-2845-5, S-2858-5, N-759-5, N-758-5, S-2846-5 and N-757-5 (or a certificate split from any of these certificates) shall be used to supply the required PM10 offsets, unless a revised offsetting proposal is received and approved by the District. Following the revisions, this Authority to Construct permit shall be re-issued, administratively specifying the new offsetting proposal. Original public noticing requirements, if any, shall be duplicated prior to re-issuance of this Authority to Construct permit. [District Rule 2201]

Verification: The project owner shall submit to both the District and CPM records showing that the project's offset requirements have been met prior to initiating operation.

AQ-79 The District has authorized to use SOx reductions to overcome shortfall in the amount of PM10 offsets at SOx/PM10 interpollutant offset ratio of 1.00. [District Rule 2201]

Verification: No verification necessary.

AQ-80 Disturbances of soil related to any construction, demolition, excavation, extraction, or other earthmoving activities shall comply with the requirements for fugitive dust control in District Rule 8021 unless specifically exempted under Section 4.0 of Rule 8021 or Rule 8011. [District Rules 8011 and 8021]

Verification: A summary of significant construction activities and monitoring records required shall be included in the construction monthly compliance report (**AQ-SC3**).

AQ-81 An owner/operator shall submit a Dust Control Plan to the APCO prior to the start of any construction activity on any site that will include 10 acres or more of disturbed surface area for residential developments, or five acres or more of disturbed surface area for non-residential development, or will include moving, depositing, or relocating more than 2,500 cubic yards per day of bulk materials on at least three days. [District Rules 8011 and 8021]

Verification: The Dust Control Plan shall be included within the Air Quality Construction Mitigation Plan and submitted to the District and CPM (**AQ-SC2**), and a summary of significant construction activities and monitoring records required shall be included in the construction monthly compliance report (**AQ-SC3**).

AQ-82 An owner/operator shall prevent or cleanup any carryout or trackout in accordance with the requirements of District Rule 8041 Section 5.0, unless specifically exempted under Section 4.0 of Rule 8041 or Rule 8011. [District Rules 8011 and 8021]

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

AQ-83 Whenever open areas are disturbed, or vehicles are used in open areas, the facility shall comply with the requirements of Section 5.0 of District Rule 8051, unless specifically exempted under Section 4.0 of Rule 8051 or Rule 8011. [District Rules 8011 and 8051]

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

AQ-84 Any paved road or unpaved road shall comply with the requirements of District Rule 8061 unless specifically exempted under Section 4.0 of Rule 8061 or Rule 8011. [District Rules 8011 and 8061]

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

AQ-85 Water, gravel, road mix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure shall be applied to unpaved vehicle travel areas as required to limit Visible Dust Emissions to 20 percent opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

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

AQ-86 Where dusting materials are allowed to accumulate on paved surfaces, the accumulation shall be removed daily or water and/or chemical/organic dust stabilizers/suppressants shall be applied to the paved surface as required to maintain continuous compliance with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011 and limit Visible Dust Emissions (VDE) to 20% opacity. [District Rule 8011 and 8071]

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

AQ-87 On each day that 50 or more Vehicle Daily Trips or 25 or more Vehicle Daily Trips with three axles or more will occur on an unpaved vehicle/equipment traffic area, permittee shall apply water, gravel, roadmix, or chemical/organic dust stabilizers/suppressants, vegetative materials, or other District-approved control measure as required to limit Visible Dust Emissions to 20% opacity and comply with the requirements for a stabilized unpaved road as defined in Section 3.59 of District Rule 8011. [District Rule 8011 and 8071]

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

AQ-88 Whenever any portion of the site becomes inactive, Permittee shall restrict access and periodically stabilize any disturbed surface to comply with the conditions for a stabilized surface as defined in Section 3.58 of District Rule 8011. [District Rules 8011 and 8071]

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

AQ-89 Records and other supporting documentation shall be maintained as required to demonstrate compliance with the requirements of the rules under Regulation VIII only for those days that a control measure was implemented. Such records shall include the type of control measure(s) used, the location and extent of coverage, and the date, amount, and frequency of application of dust suppressant, manufacturer's dust suppressant product information sheet that identifies the name of the dust suppressant and application instructions. Records shall be kept for one year following project completion that results in the termination of all dust generating activities. [District Rules 8011, 8031 and 8071]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-90 The owners and operators of each affected source and each affected unit at the source shall have an Acid Rain permit and operate in compliance with all permit requirements. [40 CFR 72]

Verification: The project owner shall submit to both the District and CPM the Acid Rain Program application after completing commissioning.

AQ-91 The owners and operators and, to the extent applicable, designated representative of each affected source and each affected unit at the source shall comply with the monitoring requirements as provided in 40 CFR Part 75. [40 CFR 75]

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

AQ-92 The emissions measurements recorded and reported in accordance with 40 CFR part 75 shall be used to determine compliance by the unit with the Acid Rain emissions limitations and emissions reduction requirements for sulfur dioxide and nitrogen oxides under the Acid Rain Program. [40 CFR 75]

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

AQ-93 The owners and operators of each source and each affected unit at the source shall: (i) Hold allowances, as of the allowance transfer deadline, in the unit's compliance subaccount (after deductions under 40 CFR 73.34(c)) not less than the total annual emissions of sulfur dioxide for the previous calendar year from the unit; and (ii) Comply with the applicable Acid Rain emissions limitations for sulfur dioxide. [40 CFR 73]

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

AQ-94 Each ton of sulfur dioxide emitted in excess of the Acid Rain emissions limitations for sulfur dioxide shall constitute a separate violation of the Act. [40 CFR 77]

Verification: No verification necessary.

AQ-95 Allowances shall be held in, deducted from, or transferred among Allowance Tracking System accounts in accordance with the Acid Rain Program. [40 CFR 72]

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

AQ-96 An allowance shall not be deducted in order to comply with the requirements under 40 CFR part 73, prior to the calendar year for which the allowance was allocated. [40 CFR 73]

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

AQ-97 An allowance allocated by the Administrator under the Acid Rain Program is a limited authorization to emit sulfur dioxide in accordance with the Acid Rain Program. No provision of the Acid Rain Program, the Acid Rain permit application, the Acid Rain permit, or the written exemption under 40 CFR 72.7 and 72.8 and no provision of law shall be construed to limit the authority of the United States to terminate or limit such authorization. [40 CFR 72]

Verification: No verification necessary.

AQ-98 An allowance allocated by the Administrator under the Acid Rain Program does not constitute a property right. [40 CFR 72]

Verification: No verification necessary.

AQ-99 The designated representative of an affected unit that has excess emissions in any calendar year shall submit a proposed offset plan, as required under 40 CFR Part 77. [40 CFR 77]

Verification: The project owner shall submit to both the District and CPM the proposed offset plan as required by the federal rule.

AQ-100 The owners and operators of an affected unit that has excess emissions in any calendar year shall: (i) Pay without demand the penalty required, and pay up on demand the interest on that penalty; and (ii) Comply with the terms of an approved offset plan, as required by 40 CFR part 77. [40 CFR 77]

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

AQ-101 The owners and operators of the each affected unit at the source shall keep on site the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority: (i) The certificate of representation for the designated representative for the source and all documents that demonstrate the truth of the statements in the certificate of representation, in accordance with 40 CFR 72.24; provided that the certificate and documents shall be retained on site beyond such five-year period until such documents are superceded because of the submission of a new certificate of representation changing the designated representative. [40 CFR 72]

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

AQ-102 The owners and operators of each affected unit at the source shall keep on site each of the following documents for a period of five years from the date the document is created. This period may be extended for cause, at any time prior to the end of five years, in writing by the Administrator or permitting authority; (ii) All emissions monitoring information, in accordance with 40 CFR part 75; (iii) Copies of all reports, compliance certifications and other submissions and all records made or required under the Acid Rain Program; (iv) Copies of all documents used to complete an Acid Rain permit application and any other submission that demonstrates compliance with the requirements of the Acid Rain Program. [40 CFR 75]

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

AQ-103 The designated representative of an affected source and each affected unit at the source shall submit the reports and compliance certifications required under the Acid Rain Program, including those under 40 CFR 75 Subpart I. [40 CFR 75]

Verification: The project owner shall submit to both the District and CPM the Acid Rain Program application after completing commissioning.

EQUIPMENT DESCRIPTION, UNIT N-2697-6-0

69,000 GALLONS PER MINUTE COOLING TOWER WITH SEVEN CELLS SERVED BY HIGH EFFICIENCY DRIFT ELIMINATORS

AQ-104 The permittee shall not begin actual onsite construction of the equipment authorized by this Authority to Construct until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act]

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

AQ-105 This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]

Verification: No verification necessary.

AQ-106 Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Verification: The project owner shall submit to both the District and CPM the Title V Operating Permit application prior to operation.

AQ-107 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-108 The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-109 The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in

excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-110 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

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

AQ-111 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The results of water recirculation rate and total dissolved solids concentration analysis data shall be included in the quarterly operation report (**AQ-SC8**).

AQ-112 No hexavalent chromium containing compounds shall be added to cooling tower circulating water. [District Rule 7012]

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

AQ-113 The drift rate shall not exceed 0.0005%. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-114 PM10 emissions shall not exceed 22.4 pounds per day. [District Rule 2201]

Verification: The results of water recirculation rate and total dissolved solids concentration analysis data shall be included in the quarterly operation report (**AQ-SC8**).

AQ-115 Compliance with the PM10 emission limit (lb/day) shall be demonstrated by using the following equation: Water Recirculation Rate (gal/day) x 8.34 lb/gal x Total Dissolved Solids Concentration in the blowdown water (ppm x 10E-06) x Design Drift Rate (%). [District Rule 2201]

Verification: The results of water recirculation rate and total dissolved solids concentration analysis data shall be included in the quarterly operation report (**AQ-SC8**).

AQ-116 Compliance with PM10 emission limit shall be determined by blowdown water sample analysis by independent laboratory within 60 days after the end of commissioning period of the gas turbine system and at least once quarterly thereafter. [District Rules 2201 and 1081]

Verification: The project owner shall use the results of water recirculation rate and total dissolved solids concentration analysis data to determine emissions (lb/day and grains/dscf) and the results shall be included in the quarterly operation report (**AQ-SC8**).

EQUIPMENT DESCRIPTION, UNIT N-2697-7-0
36.5 MMBTU/HR RENTECH BOILER SYSTEMS INC "D" TYPE BOILER (OR EQUIVALENT) EQUIPPED WITH A TODD/COEN RMB ULTRA LOW-NO_X BURNER (PART OF SIEMENS' "FLEX-PLANT 30" SYSTEM)

AQ-117 The permittee shall not begin actual onsite construction of the equipment authorized by this Authority to Construct until the lead agency satisfies the requirements of the California Environmental Quality Act (CEQA). [California Environmental Quality Act]

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

AQ-118 This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District NSR Rule]

Verification: No verification necessary.

AQ-119 Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4]

Verification: The project owner shall submit to both the District and CPM the Title V Operating Permit application prior to operation.

AQ-120 All equipment shall be maintained in good operating condition and shall be operated in a manner to minimize emissions of air contaminants into the atmosphere. [District Rule 2201]

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

AQ-121 No air contaminant shall be released into the atmosphere which causes a public nuisance. [District Rule 4102]

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

AQ-122 No air contaminant shall be discharged into the atmosphere for a period or periods aggregating more than three minutes in any one hour which is as dark as, or darker than, Ringelmann 1 or 20% opacity. [District Rule 4101]

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

AQ-123 Particulate matter emissions shall not exceed 0.1 grains/dscf in concentration. [District Rule 4201]

Verification: The project owner shall submit the results of fuel sulfur content analysis to both the District and CPM in accordance with **AQ-48**.

AQ-124 The unit shall only be fired on PUC-regulated natural gas. [District Rules 2201 and 4320]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-125 A non-resettable, totalizing mass or volumetric fuel flow meter to measure the amount of natural gas combusted in the unit shall be installed, utilized and maintained. [District Rule 2201, 40 CFR60.48(c)(g)]

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

AQ-126 The total mass emissions of NOx, VOC, CO, PM10 and SOx that are emitted during the commissioning period shall accrue towards the quarterly emission limits. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-127 During commissioning period, the owner or operator shall keep records of the natural gas fuel combusted in the boiler on daily basis. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-128 The owner or operator shall notify the District of any breakdown condition as soon as reasonably possible, but no later than one hour after its detection, unless the owner or operator demonstrates to the District's satisfaction that the longer reporting period was necessary. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-129 The District shall be notified in writing within ten days following the correction of any breakdown condition. The breakdown notification shall include a description of the equipment malfunction or failure, the date and cause of the initial failure, the estimated emissions in excess of those allowed, and the methods utilized to restore normal operations. [District Rule 1100]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-130 NOx (as NO2) emissions shall not exceed 7.0 ppmvd @ 3% O2. [District Rules 2201, 4305, 4306 and 4320]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-131 CO emissions shall not exceed 50 ppmvd @ 3% O2. [District Rules 2201, 4305, 4306 and 4320]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-132 VOC (as CH4) emissions shall not exceed 10.0 ppmvd @ 3% O2. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-133 PM10 emissions shall not exceed 0.0076 lb/MMBtu. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-134 SOx emissions shall not exceed 0.00285 lb/MMBtu. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-135 NOx (as NO2) emissions from this unit shall not exceed any of the following: 1st quarter: 310 lb; 2nd quarter: 310 lb; 3rd quarter: 310 lb; 4th quarter: 310 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-136 CO emissions from this unit shall not exceed any of the following: 1st quarter: 1,348 lb; 2nd quarter: 1,348 lb; 3rd quarter: 1,348 lb; 4th quarter: 1,348 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-137 VOC emissions from this unit shall not exceed any of the following: 1st quarter: 154 lb; 2nd quarter: 154 lb; 3rd quarter: 154 lb; 4th quarter: 154 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-138 PM10 emissions from this unit shall not exceed any of the following: 1st quarter: 277 lb; 2nd quarter: 277 lb; 3rd quarter: 277 lb; 4th quarter: 277 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-139 SOx (as SO2) emissions from this unit shall not exceed any of the following: 1st quarter: 104 lb; 2nd quarter: 104 lb; 3rd quarter: 104 lb; 4th quarter: 104 lb. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-140 The total CO emissions from the gas turbine system (N-2697-5) and the auxiliary boiler (N-2697-7) shall not exceed 198,000 pounds in any 12-consecutive month rolling period. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-141 All emissions measurements shall be made with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. No determination of compliance

shall be established within two hours after a continuous period in which fuel flow to the unit is shut off for 30 minutes or longer, or within 30 minutes after a re-ignition as defined in Section 3.0 of District Rule 4306. [District Rules 4305 and 4306]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-142 Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted before the end of commissioning period of the gas turbine system. [District Rules 2201, 4305 and 4306]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-143 Source testing to measure NOx and CO emissions from this unit while fired on natural gas shall be conducted at least once every twelve (12) months. After demonstrating compliance on two (2) consecutive annual source tests, the unit shall be tested not less than once every thirty-six (36) months. If the result of the 36-month source test demonstrates that the unit does not meet the applicable emission limits, the source testing frequency shall revert to at least once every twelve (12) months. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**. Testing for steady-state emissions shall be conducted upon initial operation and at least once every 12 months or every 36 months as specified by this condition.

AQ-144 The source test plan shall identify which basis (ppmv or lb/MMBtu) will be used to demonstrate compliance. [District Rules 4305 and 4306]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-145 Source testing shall be conducted using the methods and procedures approved by the District. The District must be notified at least 30 days prior to any compliance source test, and a source test plan must be submitted for approval at least 15 days prior to testing. [District Rule 1081]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-146 NOx emissions for source test purposes shall be determined using EPA Method 7E or CARB Method 100 on a ppmv basis, or EPA Method 19 on a heat input basis. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-147 CO emissions for source test purposes shall be determined using EPA Method 10 or CARB Method 100. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-148 Stack gas oxygen (O2) shall be determined using EPA Method 3 or 3A or CARB Method 100. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-149 For emissions source testing, the arithmetic average of three 30-consecutive-minute test runs shall apply. If two of three runs are above an applicable limit the test cannot be used to demonstrate compliance with an applicable limit. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall submit the proposed protocol for the source tests to both the District and CPM for approval in accordance with condition **AQ-44**.

AQ-150 The results of each source test shall be submitted to the District within 60 days thereafter. [District Rule 1081]

Verification: The project owner shall submit the source test report of results to both the District and CPM within 60 days of completion of the tests.

AQ-151 The owner or operator shall submit an analysis showing the fuel's sulfur content at least once every year. Valid purchase contracts, supplier certifications, tariff sheets, or transportation contacts may be used to satisfy this requirement, provided they establish the fuel's sulfur content. [District Rule 4320]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-152 Fuel sulfur content shall be determined using EPA Method 11 or EPA Method 15 or District, CARB and EPA approved alternative methods. [District Rule 4320]

Verification: The result of the natural gas fuel sulfur monitoring data and other fuel sulfur content source data shall be submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-153 The permittee shall monitor and record the stack concentration of NOx, CO, and O2 at least once every month (in which a source test is not performed) using a portable emission monitor that meets District specifications given in District Policy SSP-1105. Monitoring shall not be required if the unit is not in operation, i.e. the unit need not be started solely to perform monitoring. Monitoring shall be performed within five days of restarting the unit unless monitoring has been performed within the last month. [District Rules 4305, 4306 and 4320]

Verification: The results of the boiler stack emission monitoring data shall be summarized and submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-154 If either the NOx or CO concentrations corrected to 3% O2, as measured by the portable analyzer, exceed the allowable emissions concentration, the permittee shall return the emissions to within the acceptable range as soon as possible, but no longer than one hour of operation after detection. If the portable analyzer readings continue to exceed the allowable emissions concentration after one hour of operation after detection, the permittee shall notify the District within the following one hour and conduct a certified source test within 60 days of the first exceedance. In lieu of conducting a source test, the permittee may stipulate a violation has occurred, subject to enforcement action. The permittee must then correct the violation, show compliance has been re-established, and resume monitoring procedures. If the deviations are the result of a qualifying breakdown condition pursuant to Rule 1100, the permittee may fully comply with Rule 1100 in lieu of the performing the notification and testing required by this condition. [District Rules 4305, 4306 and 4320]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**). The results of the boiler stack emission monitoring data shall be summarized and submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-155 All alternate monitoring parameter emission readings shall be taken with the unit operating either at conditions representative of normal operations or conditions specified in the Permit to Operate. The analyzer shall be calibrated, maintained, and operated in accordance

with the manufacturer's specifications and recommendations or a protocol approved by the APCO. Emission readings taken shall be averaged over a 15 consecutive-minute period by either taking a cumulative 15 consecutive-minute sample reading or by taking at least five (5) readings, evenly spaced out over the 15 consecutive-minute period. [District Rules 4305, 4306 and 4320]

Verification: The project owner shall provide a protocol for any alternate monitoring parameters at least 60 days prior to implementing alternate monitoring procedures. The results of the boiler stack emission monitoring data shall be summarized and submitted to the District and CPM in the quarterly operation report (**AQ-SC8**).

AQ-156 The permittee shall maintain records of: (1) the date and time of NOx, CO, and O2 measurements, (2) the O2 concentration in percent and the measured NOx and CO concentrations corrected to 3% O2, (3) make and model of exhaust gas analyzer, (4) exhaust gas analyzer calibration records, and (5) a description of any corrective action taken to maintain the emissions within the acceptable range. [District Rules 4305, 4306 and 4320]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-157 The permittee shall maintain daily records of the type and quantity of fuel combusted by the boiler. [District Rule 2201, 40 CFR 60.48(c)(g)]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-158 The permittee shall maintain records of: (1) the date, (2) heat input rate, MMBtu/day, (3) daily emissions, in pounds for each pollutant listed in this permit, (4) quarterly emissions, in pounds, for each pollutant listed in this permit, and the combined CO emissions (12 consecutive month rolling total) in pounds, for permit unit N-2697-5 and N-2697-7. [District Rule 2201]

Verification: A summary of significant operation and maintenance events and monitoring records required shall be included in the quarterly operation report (**AQ-SC8**).

AQ-159 All records shall be maintained and retained on-site for a minimum of five (5) years, and shall be made available for District inspection upon request. [District Rules 1070, 4305, 4306 and 4320]

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

C. 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, we review the evidence concerning whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[12] (Exs. 1; 49; 300; 01/5/10 RT 35-36.)

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.[13] In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from these emissions. (Ex. 300, p. 4.7-1.)

The risk assessment consists of the following steps:

- Identify the types and amounts of hazardous substances that the Lodi Energy Center (LEC) Project could emit to the environment;
- Estimate worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimate amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact;[14] and
- Characterize potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 300, p. 4.7-3.)

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[12] 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**.

[13] Criteria pollutants are discussed in the **AIR QUALITY** section of this Decision, *supra*.

[14] Exposure pathways, or ways in which people might come into contact with toxic substances, include inhalation, dermal (through the skin) absorption, soil ingestion, consumption of locally grown plant foods, and mother's milk. (Ex. 300, p. 4.7-3.)

Typically, the initial risk analysis for a project is performed at a "screening level" which is designed to estimate actual health risks. The risks for screening purposes are based on examining conditions that would lead to the highest, or worst-case, risks and then using those conditions in the study. Such Conditions include:

- Using the highest levels of pollutants that could be emitted from the plant;
- Assuming weather conditions that would lead to the maximum ambient concentration of pollutants;
- Using the type of air quality computer model which predicts the greatest plausible impacts;
- Calculating health risks at the location where the pollutant concentrations are estimated to be the highest;
- Assuming that an individual's exposure to cancer-causing agents occurs continuously for 70 years; and
- Using health-based standards designed to protect the most sensitive members of the population (i.e., the young, elderly, and those with respiratory illnesses). (Ex. 300, p. 4.7-3)

The risk assessment process addresses three categories of health impacts:

- acute (short-term) health effects;
- chronic (long-term) non-cancer effects; and
- cancer risk (also long-term). (Ex. 300, p. 4.7-4.)

Acute health effects result from short-term (one-hour) exposure to relatively high concentrations of pollutants. Chronic health effects are those which arise as a result of long-term exposure to lower concentrations of pollutants. The exposure period is considered to be approximately from twelve to one hundred percent of a lifetime, or from eight to seventy years. (*Id*.)

The analysis for non-cancer health effects compares the maximum project contaminant levels to safe levels called "reference exposure levels" or RELs. These are amounts of toxic substances to which even sensitive people can be exposed and suffer no adverse health effects. These exposure levels are designed to protect the most sensitive individuals in the population such as infants, the aged, and people suffering from illness or disease which make them

more sensitive to the effects of toxic substance exposure. The RELs are based on the most sensitive adverse health effects reported, and include margins of safety. (*Id*.)

For carcinogenic substances, the health assessment considers the total risk from all cancer-causing chemicals from the source in question. The risk that is calculated is not meant to predict the actual expected incidence of cancer, but is rather a theoretical estimate based on worst-case assumptions. (Ex. 300, p. 4.7-5.)

Cancer risk is usually expressed in cases per million, and is a function of the maximum expected pollutant concentration, the probability that a particular pollutant will cause cancer, and the length of the exposure period. Title 22, California Code of Regulations, section 12703(b) states in this regard that "the risk level which represents no significant risk shall be one which is calculated to result in one excess case of cancer in an exposed population of 100,000, assuming lifetime exposure." This risk level is equivalent to a cancer risk of 10 in one million, or 10×10^{-6}. The conservative nature of the screening assumptions used means that actual cancer risks due to project emissions are likely to be considerably lower than those estimated. (Ex. 300, pp. 4.7-5 to 4.7-6.)

If the screening analysis predicts no significant risks, then no further analysis is required. However, if the predicted risk is significant then further analysis, using more realistic, site-specific assumptions, is performed to obtain a more accurate assessment of potential public health risks. If this analysis confirms that the risk exceeds the significance level of 10 in one million, we would require appropriate measures to reduce the risk to less than significant. If, after all risk reduction measures have been considered, a refined analysis still identifies a cancer risk of greater than ten in one million, the Commission would not approve a project. (Ex. 300, pp. 4.7-5 to 4.7-6.)

Toxic emissions will be attributable to the project during its construction and operation phases. Applicant and Staff each performed an analysis of the construction and operation impacts of the LEC Project which evaluated potential cancer and non-cancer health risks to the public. (Ex 300, pp. 4.7-9 to 4.7-13.)

Possible construction-phase health impacts are those from human exposure to the windblown dust from site excavation and grading, and emissions from construction-related equipment. The Applicant has specified mitigation measures to minimize construction-related fugitive dust. The requirements for

these mitigation measures are adopted as Conditions of Certification in the **AIR QUALITY** section of this Decision. (Ex 300, p. 4.7-9.)

It is well established that the exhaust from diesel-fueled construction and other equipment is a potent human carcinogen. Thus, construction-related emission levels could possibly add to the carcinogenic risk of specific concern in this analysis. The applicant presented the diesel emissions from the different types of equipment to be used in the construction phase (Ex. 1, Appendix 5.1E) and the evidence establishes that the recommended control measures (specified in the **AIR QUALITY** section Conditions of Certification **AQ-SC3** through **AQ-SC5**) as adequate to minimize any cancer risk during the relatively short construction period. (Ex. 300, p. 4.7-9.)

The main health risk from LEC during operation would be associated with emissions from its combustion turbines and auxiliary boiler that would generate its electricity. The record explains, in depth, the methodology used in identifying and quantifying the emission rates of the toxic non-criteria pollutants which could adversely affect public health. (Ex. 300, pp. 4.7-9 to 4.7-12.) **Public Health Table 2** of the FSA (Ex. 300, p. 4.7-10) lists the project's toxic emissions and shows how each contributes to the risk estimated from the health risk analysis. (Ex. 300, p. 4.7-11.)

The Applicant's estimates of the project's potential contribution to the area's carcinogenic and non-carcinogenic pollutants were obtained from a screening-level health risk assessment conducted according to procedures specified in the 1993 California Air Pollution Control Officers Association (CAPCOA) guidelines. (Ex. 300, p. 4.7-10.)

The results from this assessment, expressed as the "hazard index," are summarized in **PUBLIC HEALTH Table 3** of the Staff Assessment (Ex. 300, p. 4.7-12). The chronic noncancer hazard index for the maximally exposed individual is 0.008 while the maximum hazard index for acute noncancer effects is 0.05. These values are well below the Commission's significance criterion of 1.0, suggesting that the pollutants in question are unlikely to pose a significant risk of chronic or acute noncancer health effects anywhere in the project area. The cancer risk to the maximally exposed individual from normal project operation is shown as 0.043 in one million, which is well below the Commission's significance criterion of 10 in one million for this screening-level assessment. (Ex. 300, p. 4.7-12.)

The cumulative impact analysis established that the LEC would constitute an insignificant addition to the area's cancer and noncancer health risks. The cumulative impacts from emission of the criteria pollutants are fully addressed in the **AIR QUALITY** section.

We find that the project's contributions to health risks are well below the level of significance and therefore do not contribute significantly to a cumulative health impact.

FINDINGS OF FACT

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

1. Construction and normal operation of the project will result in the routine release of criteria and noncriteria pollutants that have the potential to adversely impact public health.

2. Potential construction-related adverse health effects from diesel emissions and fugitive dust will be mitigated to insignificant levels.

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

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

5. The accepted method used by state regulatory agencies in assessing the significance for both acute and chronic noncarcinogenic public health effects is known as the hazard index method. A similar method is used for assessing the significance of potential carcinogenic effects.

6. Application of the hazard index method establishes that emission of non-criteria pollutants from the LEC Project will not cause acute or chronic adverse public health effects.

7. The maximum non-cancer and the maximum cancer risks associated with the project are substantially below the significance thresholds commonly accepted for risk analysis purposes.

8. Cumulative impacts from noncriteria pollutants were analyzed in accordance with the provisions of CEQA. Impacts from the LEC Project's emissions of these pollutants are not expected to be significant.

9. Emissions from the construction and operation of the proposed natural gas-burning LEC Project will not have a significant adverse impact on the public health of the surrounding population.

CONCLUSIONS OF LAW

1. Project emissions do not pose a significant direct, indirect, or cumulative adverse public health risk.

2. The project will comply with the applicable laws, ordinances, regulations, and standards specified in the appropriate portion of **Appendix A** of this Decision.

No Conditions of Certification are adopted in connection with this section of the Decision.

D. WORKER SAFETY AND FIRE PROTECTION

Industrial workers are exposed to potential health and safety hazards on a daily basis. Implementation of various existing laws and standards will suffice to reduce these hazards to minimal levels. Therefore, this subsection focuses on whether Applicant's proposed health and safety plans are in accordance with all applicable LORS and thus will be adequate to protect industrial workers. The record also addresses the availability and adequacy of fire protection and emergency response services, as well as potential site contamination concerns. The evidence on this topic was uncontested. (1/5/2010 RT 40-41, 44, 47; Exs. 1; 23; 27; 49; Ex. 300, § 4.14.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site and Soil Contamination

Contaminated soils may be exposed during site preparation. The Phase I Environmental Site Assessment (ESA) conducted for this site in 2008 found no "Recognized Environmental Conditions" per the American Society for Testing and Materials Standards (ASTM) definition. There was no evidence or record of any use, spillage, or disposal of hazardous substances on the site, nor was there any other environmental concern that would require remedial action. Several conditions that do not present a threat to human health or the environment were identified and recommendations were made regarding their handling. To address the remote possibility that soil contamination will be encountered during construction of the LEC, Conditions of Certification **WASTE-1** and **WASTE-2** require that a registered professional engineer or geologist be available during soil excavation and grading to ensure proper handling and disposal of contaminated soil.[15] (Ex. 300, p. 4.14-4.)

2. Worker Safety

Industrial environments are potentially dangerous during construction, operation, and demolition activities. Workers at the LEC Project will be exposed to loud noises, moving equipment, trenches, and confined space entry and egress problems. The workers may experience falls, trips, burns, lacerations, and various other injuries. They may be exposed to falling equipment or structures,

[15] The **Waste Management** portion of this Decision contains a more detailed analysis of the matter.

chemical spills, hazardous waste, fires, explosions, electrical sparks, and electrocution. Thus, it is important for the project to have well-defined policies and procedures, training, hazard recognition, and controls to minimize injuries and protect workers. (Ex. 300, p. 4.14-5.)

The evidence extensively details the type and content of several plans which will be developed to ensure the protection of worker health and safety, as well as compliance with applicable LORS. (Ex. 300, pp. 4.14-5 to 4.14-9.) For example, the project owner will develop and implement a "Construction Safety and Health Program" and an "Operations and Maintenance Safety and Health Program," both of which must be reviewed by the Compliance Project Manager prior to project construction and operation. A separate "Injury and Illness Prevention Program," a "Personal Protective Equipment Program," an "Emergency Action Plan," a "Fire Prevention Plan," and other general safety procedures will be prepared for both the construction and operation phases of the project. (Ex. 300, pp. 4.14-5 to 4.14-6.) Conditions of Certification **WORKER SAFETY-1** and **-2** ensure that these measures will be developed and implemented.

OSHA and Cal-OSHA standards encourage employers to monitor worker safety by employing a "competent person" who has knowledge and experience enforcing workplace safety standards, can identify hazards relating to specific project operations, and has authority to take appropriate action. To implement the intent to provide a safe workplace during power plant construction, Condition **WORKER SAFETY-3** requires the project owner to designate a power plant Construction Safety Supervisor. This individual will coordinate and implement the Construction and Operation Safety and Health programs, as well as investigate any safety-related incidents and emergency responses. (Ex. 300, p. 4.14-10.)

To reduce and/or eliminate safety hazards during project construction and operation, it is also necessary to employ a professional Safety Monitor. The Safety Monitor, who is hired by the project owner but reports to the Chief Building Official and the Compliance Project Manager, will track compliance with OSHA/Cal-OSHA regulations and serve as an on-site OSHA expert. This professional will periodically audit safety compliance during construction, commissioning, and the transition to operational status, as well as ensure that safety procedures and practices are fully implemented. (Ex. 300, p. 4.14-11.) Condition **WORKER SAFETY-4** describes the role of the Safety Monitor.

NCPA's existing Combustion Turbine Project #2 (STIG plant) has a portable automatic external defibrillator (AED) on-site, in its control room. The LEC is contiguous to the STIG plant, and will use the same control room. Therefore, LEC personnel will have access to the AED should the need arise.[16]

3. Fire Protection and Emergency Response

Project construction and operation pose the potential for both small fires and major structural fires. Electrical sparks, combustion of diesel fuel oil, natural gas, hydraulic fluid, mineral oil, insulating fluid or flammable liquids, explosions, and over-heated equipment may cause small fires. The project will rely upon both on-site and local fire protection services.

The on-site fire protection system provides the first line of defense for such occurrences. The Construction Fire Prevention Plan (Condition **WORKER SAFETY-1**) will address and detail measures to minimize the likelihood of fires during construction. These measures include the placement of portable fire extinguishers, safety procedures, and training. (Ex. 300, pp. 4.4-11 to 4.4-12.)

During operation, the project will meet the fire protection and suppression requirements of the California Fire Code, all applicable recommended National Fire Protection Association (NFPA) standards (including Standard 850 addressing fire protection at electric generating plants), and all Cal/OSHA requirements.[17] Fire suppression elements will include both fixed and portable fire extinguishing systems.

The LEC will be adjacent to the White Slough Water Pollution Control Facility (WPCF), and the WPCF will supply fire water. This will be stored in the raw water/fire water storage tank at the existing STIG plant. The LEC fire loop will tie into the existing fire system in use at the STIG plant and supply both fire hydrants and fixed suppression systems with sufficient water for two hours of protection. (Ex. 300, pp. 4.14-3 to 4.14-4, 4.14-12.)

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[16] Staff's testimony contends that the potential for both work-related and non work-related heart attacks exists at power plants. The quickest medical intervention can be achieved with the use of an on-site defibrillator. Many modern industrial and commercial enterprises maintain defibrillators for emergency use. Staff therefore endorses an AED as an appropriate safety and health precaution. (Ex. 300, p. 4.14-13.)

[17] As proposed, the LEC lacks a second access point/gate for emergency responders should the main gate be blocked or dangerous. To correct this, Condition of Certification **WORKER SAFETY-5** requires that the access point for construction vehicles at the northeast corner of the site remain as a second access point for the life of the power plant. (Ex. 300, p. 4.14-12.)

A fixed sprinkler system will be installed in areas of risk including the water treatment building. Monitor nozzles will be used for fire suppression on the cooling tower, which will be constructed from fire resistant materials. (Ex. 301, p. 14.) A carbon dioxide and dry chemical fire protection system will be provided for the combustion turbine generators and accessory equipment. This system will have fire detection sensors and monitoring equipment to trigger alarms, turn off ventilation, close ventilation openings, and automatically actuate the suppression systems. In addition to the fixed fire protection system, appropriate class of service portable extinguishers and fire hydrants will be located throughout the facility at code-approved intervals. These systems are standard requirements of the NFPA and the Uniform Fire Code (UFC). (Ex. 300, p. 4.14-12.)

The evidence shows that these measures will ensure adequate fire protection. (*Id.*) Conditions of Certification **WORKER SAFETY-1** and **-2** require the project owner, prior to construction and operation of the project, to provide the final Fire Prevention Program to the Compliance Project Manager and the local fire authorities. These entities will then confirm its adequacy.

Local fire support services are under jurisdiction of the Woodbridge Fire Protection District (WFPD). There are a total of four fire stations within the WFPD system, staffed by 30 full time firefighters. The closest station to the LEC site is Station #4, located at 6365 W. Capitol Ave., approximately 1.0 mile north of the site. The total response time from the moment a call is made to the point of arrival at the site can be up to seven minutes. The next closest station is Station #2, located about 5-6 miles away, with a response time of 10-15 minutes.

Station #4 is also the first responder to incidents involving hazardous materials. Backup support is provided by the other three Woodbridge stations and by the City of Stockton Fire Department and the City of Lodi Fire Department. Station #4 has trained personnel and equipment for hazmat response as does Station #10 of the Stockton Fire Department (located about 10 miles from the site). In the event of a large spill, the San Joaquin County Office of Emergency Services Hazardous Materials Response Team will also respond. All personnel at the WFPD are trained to at least Emergency Medical Technician (EMT) 1 level and as first responders to hazardous materials incidents. The majority of staff at the WFPD is also trained as hazardous materials specialists. (Ex. 300, p. 4.14-3.)

Finally, the evidence establishes the LEC Project will not measurably increase the burden on WFPD resources. The record shows that modern gas-fired power

plants pose no unique hazards. Furthermore, the WFPD has indicated that it is adequately staffed and equipped to provide needed response services. Several local mutual aid agreements with nearby fire departments buttress WFPD's capabilities. (Ex. 300, p. 4.14-13.)

FINDINGS OF FACT

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

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

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and the operation phases of the project.

3. The project will employ an on-site professional Safety Monitor during construction and operation.

4. The LEC Project will include on-site fire protection and suppression systems as the first line of defense in the event of a fire.

5. The Woodbridge Fire Protection District (WFPD) will provide fire protection and emergency response services to the project.

6. Existing fire and emergency service resources are adequate to meet project needs.

CONCLUSION OF LAW

1. We therefore conclude that the LEC Project will not create significant health and safety impacts to workers, and will comply with all applicable laws, ordinances, regulations, and standards listed in the appropriate portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

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

- A Construction Personal Protective Equipment Program;
- A Construction Exposure Monitoring Program;
- A Construction Injury and Illness Prevention Program;
- A Construction Emergency Action Plan; and
- A Construction Fire Prevention Plan.

The Personal Protective Equipment Program, the Exposure Monitoring Program, and the Injury and Illness Prevention Program shall be submitted to the CPM for review and approval concerning compliance of the program with all applicable safety orders. The Construction Emergency Action Plan and the Fire Prevention Plan shall be submitted to the Woodbridge Fire Protection District for review and comment prior to submittal to the CPM for approval. If no comments are received from the Woodbridge Fire Protection District, or the CPM within 30 days of submittal, the project owner may proceed with preparation of final documents.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM for review and approval a copy of the Project Construction Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Woodbridge Fire Protection District stating the fire department's comments on the Construction Fire Prevention Plan and Emergency Action Plan. The CPM shall approve the final Project Construction Safety and Health Program within thirty (30) days of submission.

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

- An Operation Injury and Illness Prevention Plan;
- An Emergency Action Plan;
- Hazardous Materials Management Program;
- Fire Prevention Plan (8 Cal Code Regs., § 3221); and
- Personal Protective Equipment Program (8 Cal Code Regs., §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the CPM for review and comment concerning compliance of the programs with all applicable safety orders. The Fire Prevention Plan and the Emergency Action Plan shall also be submitted to the Woodbridge Fire Protection District for review and comment. If no comments are received from the Woodbridge Fire Protection District,

or the CPM within 30 days of submittal, the project owner may proceed with preparation of final documents.

Verification: At least 30 days prior to the start of first-fire or commissioning, the project owner shall submit to the CPM for approval a copy of the Project Operations and Maintenance Safety and Health Program. The project owner shall provide a copy of a letter to the CPM from the Woodbridge Fire Protection District stating the fire department's comments on the Operations Fire Prevention Plan and Emergency Action Plan. The CPM shall approve the final Project Construction Safety and Health Program within thirty (30) days of submission.

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

- Have overall authority for coordination and implementation of all occupational safety and health practices, policies, and programs;
- Assure that the safety program for the project complies with Cal/OSHA and federal regulations related to power plant projects;
- Assure that all construction and commissioning workers and supervisors receive adequate safety training;
- Complete accident and safety-related incident investigations and emergency response reports for injuries and inform the CPM of safety-related incidents; and
- Assure that all the plans identified in Conditions of Certification **WORKER SAFETY-1** and **-2** are implemented.

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

The CSS shall submit in the Monthly Compliance Report a monthly safety inspection report which includes:

- a record of all employees trained for that month (all records shall be kept on site for the duration of the project);
- a summary report of safety management actions and safety-related incidents that occurred during the month;

- a report of any continuing or unresolved situations and incidents that may pose danger to life or health; and
- a report of accidents and injuries that occurred during the month.

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

Verification: Prior to the start of construction, the project owner shall provide proof of its agreement to fund the Safety Monitor services to the CPM for review and approval.

WORKER SAFETY-5 The project owner shall identify and provide a second access point for emergency personnel to enter the site. This access shall enter from the northeast portion of the site. The method of gate operation shall be submitted to the Woodbridge Fire Protection District for review and comment and to the CPM for review and approval.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit to the CPM for review and approval: a letter and plot-plan stating and showing that a second access point (gate) will be maintained during construction, commissioning, and operations; and a letter from the Woodbridge Fire Protection District with comments on the operation of the second access point or a statement that no comments were received.

E. HAZARDOUS MATERIALS MANAGEMENT

This section considers whether the construction and operation of the Lodi Energy Center Project will create significant impacts to public health and safety resulting from the use, handling, transportation, or storage of hazardous materials.[18] Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts. These include meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. In addition, sensitive subgroups such as the young, the elderly, and those with existing conditions may be at heightened risk from exposure to emitted pollutants. (Ex. 300, p. 4.4-5.)

The evidence presented on this topic was uncontested. (1/05/2010 RT: 28, 44, 47; Exs. 1; 10; 34; 300, § 4.4; 301.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Potential Risks

The evidence chronicles the method used to assess risks posed by hazardous materials. This method included the following elements:

- A review of chemicals, the amounts proposed for on-site use, and a determination of the need and appropriateness of their use.

- Chemicals which would be used in small amounts, or whose physical state is such that there is virtually no chance that a spill would migrate off the site and impact the public, were removed from further consideration.

- Measures proposed to prevent spills were reviewed and evaluated. These included engineering controls such as automatic shut-off valves and different size transfer-hose couplings, as well as administrative controls such as worker training and safety management programs.

- Measures proposed to respond to accidents were reviewed and evaluated. These included engineering controls such as catchment basins and methods to keep vapors from spreading, as well as administrative controls such as training emergency response crews.

[18] The **WORKER SAFETY AND FIRE PROTECTION** portion of this Decision addresses the protection of workers from such risks.

- An analysis of the theoretical impacts on the public of a worst-case spill of hazardous materials even with the mitigation measures in place. (Ex. 300, pp. 4.4-6 to 4.4-7.)

Hazardous materials used during construction will include gasoline, diesel fuel, motor oil, hydraulic fluid, welding gases, lubricants, solvents, paint, and paint thinner. These will be used in small quantities, and any spills or other releases will be confined to the site. No acutely toxic materials will be used on-site during construction. During operations, hazardous materials will be used or stored during operation only in small quantities and present limited off-site dangers because of their low volatility and/or toxicity. (Ex. 300, pp. 4.4-2, 4.4-7.)

ATTACHMENT A (incorporated in Condition of Certification **HAZ-1** at the end of this section and as reflected in Ex. 301) lists the hazardous materials that will be used and stored on-site. Condition **HAZ-1** prohibits the project owner from using hazardous materials not listed in **ATTACHMENT A**, or storing them in greater quantities than specified, without prior approval of the Energy Commission's Compliance Project Manager. None of these materials, except for natural gas and anhydrous ammonia as discussed below, pose significant potential for off-site impacts as a result of the quantities on-site, their relative toxicity, their physical state, and/or their environmental mobility. (Ex. 300, p. 4.4-7.)

a. Natural Gas

Project operations will involve the handling – but not storage – of large quantities of natural gas. The new gas pipeline will be installed parallel to the existing pipeline that serves NCPA's STIG plant. The pipeline will be designed for Class I service and will meet CPUC and federal standards. The evidence shows that, while natural gas poses some risk of both fire and explosion, this risk can be reduced to insignificant levels through adherence to applicable codes and the development and implementation of effective safety management practices. For example, National Fire Protection Association (NFPA) Code 85A requires both the use of double-block and bleed valves for gas shut-off and automated combustion controls. These measures significantly reduce the likelihood of an explosion in gas-fired equipment. Additionally, air purging of the gas turbines is required prior to start-up, thereby precluding the presence of an explosive mixture. The safety management plan must address the handling and use of natural gas, and the evidence establishes that it will significantly reduce the potential for equipment failure because of either improper maintenance or human error. (Ex. 300, pp. 4.4-7 to 4.4-8.)

The evidence establishes that conformance with existing codes will ensure minimal risks of pipeline failure. (Ex. 300, p. 4.4-8.)

b. Anhydrous Ammonia

Anhydrous ammonia will be used to control oxides of nitrogen (NO_x) emissions resulting from natural gas combustion. The evidence is in accord that anhydrous ammonia is the only hazardous material that could realistically, without proper mitigation, pose a significant risk of off-site impact. This could result from the release of ammonia vapor in the event of a spill. (*Id*.) The evidence contains a detailed analysis of both the potential impacts resulting from an ammonia spill and the adequacy of measures available to limit the severity of any impacts.

2. Risk Mitigation

Anhydrous ammonia is stored as a liquefied gas at high pressure and could explode in an accidental release, resulting in high downwind concentrations. The project will tie into the existing stationary above-ground ammonia storage tank used for the STIG facility. This tank has an approximate capacity of 12,000 gallons, and is filled to a maximum of 10,200 gallons. (*Id*.)

To assess the potential off-site impacts associated with an accidental release of anhydrous ammonia, Staff used several benchmark exposure levels. (Ex. 300, p. 4.4-9.) These include:

a. the lowest concentration posing a risk of lethality, i.e. 2,000 parts per million (ppm);

b. the concentration immediately dangerous to life and health, a level of 300 ppm;

c. the emergency response planning guideline level 2 of 150 ppm; and

d. the level of 75 ppm, considered by the Energy Commission staff to be without serious adverse effects on the public for a one-time exposure.

If the exposure associated with a potential release exceeds 75 ppm at any public receptor, Staff also assesses the probability of occurrence of the release, the severity of the consequences, and the nature of the potentially exposed

population in determining whether the likelihood and extent of exposure would be significant.[19] (Ex. 300, p. 4.4-9.)

Staff reviewed the Risk Management Plan (RMP) for the existing tank. The San Joaquin County Office of Emergency Services had also recently reviewed (in February 2009) the RMP. Staff further reviewed Applicant's off-site Consequence Analysis (OCA), and inspected the tank, its secondary containment facilities, and the placement of pipes, valves, and sensors. As a result of the LEC, additional sensors and a water spray deluge system will be added, but the tank will not be relocated or increased in size. (*Id.*)

The evidence establishes that reliance on the existing OCA and the County's review is appropriate insofar as assessing the potential anhydrous ammonia risks. The evidence further shows that the potential for accidents resulting in the release of hazardous materials is greatly reduced through implementation of control systems and a safety management program which includes both engineering and administrative controls.

a. Engineering and Administrative Controls

Engineering controls and administrative controls affect the significance of potential impacts from hazardous materials usage. Engineering controls are those physical or mechanical systems (such as storage tanks or automatic shut-off valves) which can prevent a hazardous material spill from occurring, which can limit the spill to a small amount, or which can confine it to a small area. Administrative controls are those rules and procedures that workers at the facility must follow. These are designed to help prevent accidents or keep them small if they do occur. Timely and adequate emergency spill response is also a crucial factor. (Ex. 300, p. 4.4-6.)

The engineered safety features which will be used at the LEC Project include:

- Construction of secondary containment areas surrounding each of the hazardous materials storage areas designed to contain accidental releases that might happen during storage or delivery plus the volume of water associated with 20 minutes of fire protection;

[19] Staff's Hazardous Materials Appendix A (Ex. 300, pp. 4.4-25 to 4.4-26) discusses the criteria for ammonia exposure guidelines, their applicability to sensitive populations, and exposure-specific conditions.

- Physical separation of stored chemicals in isolated containment areas with a non-combustible partition in order to prevent accidental mixing of incompatible materials which could result in the evolution and release of toxic gases or fumes;

- Installation of a fire protection system for indoor hazardous materials storage areas including automatic sprinklers and an exhaust system.

- Continued use of an existing bermed containment area surrounding the anhydrous ammonia storage tank capable of holding the entire volume of the tank;

- Maintaining an existing ammonia sensor and installing additional sensors; and

- Process protective systems including continuous tank level monitors, automatic leak detectors, temperature and pressure monitors, alarms, excess flow and emergency block valves, and a water spray deluge system for the ammonia tank. (Ex. 300, p. 4.4-10.)

Administrative controls also help prevent accidents and releases (spills) from moving off-site and affecting neighboring communities. These include those required in Conditions of Certification **HAZ-1** (limitations on the use and storage of hazardous materials and their strength and volume), and Condition **HAZ-2** (development of a safety management plan). (Ex. 300, p. 4.4-11.)

Worker training programs, process safety management programs, and compliance with all applicable health and safety laws, ordinances, and standards will also reduce risks. The project owner's worker health and safety program will include (but not be limited to) the following elements:

- Worker training regarding chemical hazards, health and safety issues, and hazard communications;

- Procedures to ensure the proper use of personal protective equipment;

- Safety operating procedures for the operation and maintenance of systems utilizing hazardous materials;

- Fire safety and prevention; and

- Emergency response actions including facility evacuation, hazardous material spill clean-up, and fire prevention. (Ex. 300, p. 4.4-10.)

In order to address the issue of spill response, the project owner will prepare and implement an emergency response plan that includes information on hazardous materials contingency and emergency response procedures, spill containment and prevention systems, personnel training, spill notification and on-site containment, and prevention equipment and capabilities, as well as other elements. Emergency procedures will include evacuation, spill cleanup, hazard prevention, and emergency response. There are already a RMP and a Process Safety Management Plan concerning anhydrous ammonia in place for the existing STIG plant. The existing Hazardous Materials Business Plan for the STIG facility will be updated to reflect the LEC. Staff's review confirmed the adequacy of these plans. (Ex. 300, p. 4.4-11.)

The Woodbridge Fire Protection District's Station #4 will be the first responder for hazardous materials incidents. Backup support will be provided by the City of Stockton's Fire Department and the City of Lodi's Fire Department. In the event of a large spill, the San Joaquin Office of Emergency Services will also respond. The evidence indicates that these organizations are capable of handling any hazardous materials related incident posed by the LEC Project. (*Id.)*

Overall, the evidence conclusively establishes that the project's use and storage of hazardous materials, including natural gas and anhydrous ammonia, poses a less than significant risk to public health and safety.

b. Transportation Risk Reduction

The evidence shows that transport of anhydrous ammonia poses the predominant risk to off-site receptors. Ammonia can be released during a transportation accident; the extent of impact depends upon the location of the accident and the rate of dispersion of ammonia vapor from the surface of the anhydrous ammonia pool. The actual likelihood of an accidental release during transport depends upon the tanker driver's skill, the type of transport vehicle, and accident rates. (Ex. 300, pp. 4.4-11 to 4.4-12.)

Anhydrous ammonia will be delivered to the facility in DOT-certified vehicles with design capacities of 6,500 gallons. These high-integrity vehicles are designed to DOT Code MC-330 or 331, and are suitable for hauling caustic materials such as ammonia. Condition of Certification **HAZ-3** ensures that only tankers which meet or exceed these specifications will be used for ammonia deliveries. (Ex. 300, p. 4.4-12.)

Trucks will travel on I-5 and exit either at the SR-12 interchange (if coming from the north) or at West Eight Mile Road (if coming from the south), and then travel on North Thornton Road to Frontage Road to North Cord Road to the project site. There are no schools or parks along the routes, but there is a residential neighborhood south of Eight Mile Road.[20] (Ex. 300, p. 4.4-11.)

Operation of the LEC will require about two ammonia deliveries per month, or a maximum of 24 deliveries annually. Each delivery from the north will travel about 2.5 miles along local roads once leaving I-5; from the south, travel on local roads will be about 5.5 miles from I-5. This results in a maximum of 60 or 132 miles of tanker truck delivery travel per year in the project area. (Ex. 300, p. 4.4-12.)

Data show that the actual risk of a fatality over the past five years from all forms of hazardous material transportation is approximately 0.1 in 1,000,000. Staff's transportation risk assessment model shows that there is a risk of a release of hazardous materials 0.27 in 1,000,000 for one trip from I-5 if coming from the north, and 0.82 in 1,000,000 for one trip from I-5 if coming from the south. This equates to a total annual risk of 6.4 in 1,000,000 or 19.7 in 1,000,000 for 24 annual deliveries from the north or south, respectively. (Ex. 300, pp. 4.4-12 to 4.4-13.) Given the inherent conservatism of the assumptions used, the evidence supports the conclusion that the risk of a transportation accident resulting in the release of a hazardous material is insignificant.

3. Site Security

The hazardous materials used by the LEC Project are listed by several federal agencies (USEPA, Homeland Security, DOE) in Vulnerability Assessments requiring special site security measures to prevent unauthorized access. (Ex. 300, p. 4.4-14.) The evidence shows that a minimum level of security measures is appropriate in order to protect California's electrical infrastructure from malicious mischief, vandalism, or terrorist attack. (Ex. 300, pp. 4.4-14 to 4.4-15.)

An existing operational security plan for the STIG facility is in place. Perimeter security measures include security guards, security alarms, breach and motion detectors, and video or camera systems. (Ex. 300, p. 4.4-15.) To accommodate the LEC Project, the project owner must prepare a written plan for the construction phase which includes a description of perimeter security measures and procedures for evacuation, notifying authorities of a security breach,

[20] Condition **HAZ-4** restricts hazardous materials deliveries to these routes. (Exs. 300, p. 4.4-13; 301.)

monitoring fire alarms, and conducting site personnel background checks. (Ex. 300, pp. 4.4-14 to 4.4-15.)

Site access for vendors will be strictly controlled. Consistent with current state and federal regulations governing the transport of hazardous materials, hazardous materials vendors will have to maintain their transport vehicle fleet and employ only properly licensed and trained drivers. The project owner is required, through the use of contractual language with vendors, to ensure that vendors supplying hazardous materials strictly adhere to the U.S. DOT requirements for hazardous materials vendors to prepare and implement security plans and to ensure that all hazardous materials drivers are in compliance through personnel background security checks. The compliance project manager (CPM) may authorize modifications to these measures or may require additional measures in response to guidance provided by the U.S. Department of Homeland Security, the U.S. DOE, or the NERC after consultation with both appropriate law enforcement agencies and the project owner. (*Id*.)

Conditions of Certification **HAZ-5** and **HAZ-6** embody these requirements.

4. Cumulative Risks

Finally, the evidence contains an analysis of potential cumulative impacts. For present purposes, a significant cumulative impact is basically the simultaneous uncontrolled release of hazardous materials from multiple locations in a form (gas or liquid) that could cause a significant impact. The evidence demonstrates that the LEC facility poses a minimal risk of off-site impacts from an accidental release.

Since the STIG plant and the LEC facility will share the anhydrous ammonia storage facility, no cumulative impacts can occur from these two projects. In the local area, the City of Lodi White Slough Water Pollution Control Facility stores, uses, and transports hazardous materials for water treatment. These chemicals include chlorine and sulfur dioxide gas. A release of either of these chemicals into the environment could pose a threat to human health and safety and add to or detract from a cumulative impact should a release occur simultaneously with a release of anhydrous ammonia from the STIG/LEC facility. However, chlorine gas and ammonia gas neutralize each other and thus the cumulative impact would be reduced from that of an incremental impact due to the release of the individual chemicals. Ammonia and chlorine also react to form chloramines which are far less toxic than the reactants. The same is true for the interaction of sulfur dioxide gas and ammonia gas. Therefore, the risk of a cumulative impact

being greater than an individual impact is less than significant. (Ex. 300, pp. 4.4-15 to 4.4-16.)

The evidence establishes that the project owner will develop a hazardous materials handling program and that the project, as mitigated, poses only a minimal risk of an accidental release of hazardous materials. We therefore conclude that the LEC facility will not cause, or contribute to, a significant cumulative impact.

FINDINGS OF FACT

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

1. The Lodi Energy Center Project will use hazardous materials during construction and operation, including anhydrous ammonia and natural gas.

2. The major public health and safety dangers associated with these hazardous materials include the accidental release of anhydrous ammonia as well as fire and explosion from natural gas.

3. Staff's independent analysis indicates that appropriate design measures to contain spilled ammonia are necessary to ensure that no significant off-site public health consequences will result from an accidental release.

4. Compliance with appropriate engineering and regulatory requirements for safe transportation, delivery, handling, and storage of anhydrous 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 significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. The project owner will ensure that truck deliveries of anhydrous ammonia are restricted to the delivery routes specified in Condition of Certification **HAZ-4**, below.

8. The likelihood of cumulative impacts originating from simultaneous releases of hazardous materials from the LEC Project and nearby facilities is statistically remote and considered insignificant.

9. Local emergency responders are adequately equipped and trained to deal with hazardous materials accidents at the LEC Project.

10. Implementation of the mitigation measures described in the evidence and contained in the Conditions of Certification, below, ensures that the project will not cause significant impacts to public health and safety as the result of handling, use, storage, or transportation of hazardous materials.

11. With implementation of the Conditions of Certification, below, the LEC Project will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

CONCLUSION OF LAW

The Commission concludes, therefore, that the storage, use, and transportation of hazardous materials associated with the Lodi Energy Center Project will not result in any significant direct or cumulative adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in **ATTACHMENT A**, below, or in greater quantities or strengths than those identified by chemical name in **ATTACHMENT A**, below, unless approved in advance by the Compliance Project Manager (CPM).

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

HAZ-2 The project owner shall develop and implement a Safety Management Plan for delivery of anhydrous ammonia and other liquid hazardous materials by tanker truck. The plan shall include procedures, protective equipment requirements, training, and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of incompatible hazardous materials including provisions to maintain lockout control by a power plant employee not involved in the delivery or transfer operation. This plan shall be applicable during construction, commissioning, and operation of the power plant.

Verification: At least 30 days prior to the delivery of any liquid hazardous material to the facility, the project owner shall provide a Safety Management Plan as described above to the CPM for review and approval.

HAZ-3 The project owner shall direct all vendors delivering anhydrous ammonia to the site to use only tanker truck transport vehicles which meet or exceed the specifications of DOT Code MC-330 or 331.

Verification: At least 30 days prior to LEC commissioning, 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-4 The project owner shall direct all vendors delivering any hazardous material to the site to use only one of the two routes approved by the CPM: (I-5 to North Thornton Road to Frontage Road to North Cord Road to the project site, (if coming from the north); or exit at West Eight Mile Road and then travel on North Thornton Road to Frontage Road to North Cord Road to the project site if coming from the south). The project owner shall obtain approval of the CPM if an alternate route is desired.

Verification: At least 60 days prior to LEC commissioning, the project owner shall submit copies of the required transportation route limitation direction to the CPM for review and approval.

HAZ-5 Prior to commencing construction, a site-specific Construction Site Security Plan for the construction phase shall be prepared and made available to the CPM for review and approval. The Construction Security Plan shall include the following:

1. Perimeter security consisting of fencing enclosing the construction area;
2. Security guards;
3. Site access control consisting of a check-in procedure or tag system for construction personnel and visitors;
4. Written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on-site or off -site;
5. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
6. Evacuation procedures.

Verification: At least 30 days prior to commencing construction, the project owner shall notify the CPM that a site-specific Construction Security Plan is available for review and approval. The CPM shall review and, if acceptable, approve the Construction Security Plan within 30 days of submission.

HAZ-6 The project owner shall prepare a site-specific security plan for the commissioning and operational phases that shall be available to the CPM for review and approval. The project owner shall implement site security measures that address physical site security and hazardous

materials storage. The level of security implemented shall not be less than that which presently exists at the STIG site and shall include any additional measures not in existence as described below:

The Operation Security Plan shall include the following:

1. Permanent full perimeter fence or wall, at least eight feet high;
2. Main entrance security gate, either hand operated or motorized;
3. Evacuation procedures;
4. Protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency;
5. Written standard procedures for employees, contractors, and vendors when encountering suspicious objects or packages on-site or off-site;
6. A. A statement (refer to sample, **ATTACHMENT B**), signed by the project owner certifying that background investigations have been conducted on all project personnel. Background investigations shall be restricted to determine the accuracy of employee identity and employment history and shall be conducted in accordance with state and federal laws regarding security and privacy;

   B. A statement(s) (refer to sample, **ATTACHMENT C**), signed by the contractor or authorized representative(s) for any permanent contractors or other technical contractors (as determined by the CPM after consultation with the project owner), that are present at any time on the site to repair, maintain, investigate, or conduct any other technical duties involving critical components (as determined by the CPM after consultation with the project owner) certifying that background investigations have been conducted on contractors who visit the project site;
7. Site access controls for employees, contractors, vendors, and visitors;
8. A statement(s) (refer to sample, **ATTACHMENT D**), signed by the owners or authorized representative of hazardous materials transport vendors, certifying that they have prepared and implemented security plans in compliance with 49 CFR 172.880, and that they have conducted employee background investigations in accordance with 49 CFR Part 1572, subparts A and B;
9. Closed circuit TV (CCTV) monitoring system, recordable, and viewable in the power plant control room and security station (if separate from the control room) capable of viewing, at a minimum, the main entrance gate and the ammonia storage tank; and

10. Additional measures to ensure adequate perimeter security consisting of either:

    A. Security guard(s) present 24 hours per day, 7 days per week; **<u>or</u>**

    B. Power plant personnel on site 24 hours per day, 7 days per week, and **all** of the following:

        1. The CCTV monitoring system required in item 9, above, shall include cameras able to pan, tilt, and zoom, have low-light capability, are recordable, and are able to view 100 percent of the perimeter fence, the anhydrous ammonia storage tank, the outside entrance to the control room, and the front gate from a monitor in the power plant control room; **and**

        2. Perimeter breach detectors **<u>or</u>** on-site motion detectors.

    The project owner shall fully implement the security plans and obtain CPM approval of any substantive modifications to those security plans. The CPM may authorize modifications to these measures, or may require additional measures such as protective barriers for critical power plant components— transformers, gas lines, and compressors—depending upon circumstances unique to the facility or in response to industry-related standards, security concerns, or additional guidance provided by the U.S. Department of Homeland Security, the U.S. Department of Energy, or the North American Electrical Reliability Corporation, after consultation with both appropriate law enforcement agencies and the project owner.

<u>Verification:</u> At least 30 days prior to LEC commissioning, the project owner shall notify the CPM that a site-specific operations site security plan is available for review and approval. The CPM shall review and, if acceptable, approve the Operation Security Plan within 30 days of submission. In the annual compliance report, the project owner shall include a statement that all current project employee and appropriate contractor background investigations have been performed, and that updated certification statements have been appended to the operations security plan. In the annual compliance report, the project owner shall include a statement that the operations security plan includes all current hazardous materials transport vendor certifications for security plans and employee background investigations.

HAZARDOUS MATERIALS

ATTACHMENT A

Hazardous Material for Use at the

LODI ENERGY CENTER

HAZARDOUS MATERIALS ATTACHMENT A

Hazardous Materials for Use at the LEC

Material	***CAS No.***	***Application***	***Hazardous Characteristics***	***Maximum Quantity On Site***	***CERCLA SARA RQ[a]***
Acetylene	47-86-2	Welding gas	Health: asphyxiant gas Physical: flammable	540 cubic feet	NA
Amine NALCO 5711	7664-41-7 141-43-5	Boiler feedwater pH control	Health: harmful if swallowed, causes irreversible eye damage Physical: non-flammable	400 gallons	100 pounds
Anhydrous Ammonia (99% NH3)	7664-41-7	Control oxides of nitrogen (N0x) emissions through selective catalytic reduction	Health: corrosive, irritation to permanent damage from inhalation, ingestion, and skin contact Physical: combustible, but difficult to burn	10,200 gallons	100 pounds
Antifoam NALCO 71-D5	64741-44-2 25322-69-4 Proprietary 8002-74-2 Proprietary	Cooling tower foam control	Health: causes irritation to skin and eyes Physical: slightly flammable	55 gallons	NA
Anti-scalant NALCO PC-191T	Various	Prevent scale in reverse osmosis membranes	Health: may cause slight irritation to the skin and moderate irritation to the eyes Physical: not flammable	400 gallons	NA
Anti-scalant NALCO PC-510Tc	None	Prevent scale in reverse osmosis membranes	Health: may cause irritation with prolonged contact Physical: slightly flammable	400 gallons	NA
Biocide NALCO 3980	26172-55-4 2682-20-4 10377-60-3	Injection well biological control	Health: corrosive, causes irreversible eye damage or skin burns, harmful if inhaled swallowed or absorbed through the skin Physical: non-flammable	55 gallons	NA
Biocide NALCO 73551	None	Cooling tower bio penitrant	Health: may cause irritation with prolonged contact Physical: slightly flammable	400 gallons	NA
Biocide NALCO 7330	26172-55-4 2682-20-4 10377-60-3	Cooling water bio control	Health: corrosive, causes eye and skin burns, may cause severe respiratory tract irritation with possible burns, may cause severe digestive tract irritation with possible burns Physical: non-flammable	400 gallons	NA

Material	*CAS No.*	*Application*	*Hazardous Characteristics*	*Maximum Quantity On Site*	*CERCLA SARA RQ[a]*
Caustic NALCO 8735	1310-73-2 1310-58-3	Boiler makeup water pH control		25 gallons	1,000 pounds
Citric Acid	77-92-9	Non-chemical cleaning of HRSG interior piping	Health: causes irritation to the skin, gastrointestinal tract, and respiratory tract Physical: slightly flammable	5,000 gallons	NA
Cleaning Chemicals	Various	Cleaning	Health: refer to individual chemical labels Physical: refer to individual chemical labels	Varies (less than 25 gallons liquids or 100 pounds solids for each chemical)	NA
Cleaning Chemicals/ Detergents (Including PC 98, PC-11, and PC 56)	None	Periodic cleaning of combustion turbine	Health: refer to individual chemical labels Physical: refer to individual chemical labels	1,000 gallons	NA
Coagulant NALCO 8108	None	Cold lime softener turbidity removal	Health: may cause irritation with prolonged contact. Physical: slightly flammable	6,000 gallons	NA
Corrosion Control NALCO 3DT-184	7664-38-2	Cooling water corrosion inhibitor	Health: corrosive, may cause irritation with prolonged contact, toxic to aquatic organisms Physical: non-flammable	1,000 gallons	5.000 pounds
Diesel No. 2c	68476-34-6	Small equipment refueling	Health: may be carcinogenic. Physical: flammable	55 gallons	NA
Dispersant NALCO 3DT-191	None	Cooling water mineral dispersant	Health: may cause irritation with prolonged contact. Physical: slightly flammable	2,000 gallons	NA
Dispersant NALCO 3DT-155	None	Cooling water mineral dispersant	Health: may cause irritation with prolonged contact. Physical: slightly flammable	800 gallons	NA
EPA Protocol Gases	Various	Calibration gases	Health: refer to individual chemical labels. Physical: refer to individual chemical labels	1,000 cubic feet	NA
Flocculent NALCO 7768	None	Cold lime softener turbidity removal	Health: may cause irritation with prolonged contact, toxic to aquatic organisms. Physical: slightly flammable	800 gallons	NA
Glutamine	56-85-9	Injection well biological control	Health: causes irritation to skin and eyes. Physical: non-flammable	55 gallons	NA
Hydraulic Oil	None	High-pressure combustion turbine starting	Health: hazardous if ingested. Physical: combustible	700 gallons	42 gallons

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ[a]
		system, turbine control valve actuators			
Hydrogen	1333-74-0	General or Miscellaneous	Health: asphyxiation by displacement of oxygen. Physical: flammable	1,000 cubic feet	NA
Laboratory Reagents	Various	Water/wastewater laboratory analysis	Health: refer to individual chemical labels. Physical:	10 gallons	NA
Lime	1305-62-0	Cold lime softener hardness removal	Health: irritation of eyes, respiratory or red “sunburn like” skin. Physical: non-flammable	53 tons	NA
Lithium Bromide	7550-35-8	Chiller refrigerant	Health: hazardous if ingested, causes irritation to skin and eyes. Physical: non-flammable	75 gallons	NA
Lubrication Oil	None	Lubricate rotating equipment (e.g., gas turbine and steam turbine bearings)	Health: hazardous if ingested. Physical: flammable	1,500 gallons	42 gallons
Magnesium Oxide	1309-48-4	Cold lime softener silica removal	Health: slowly absorbed, ingestion my cause rapid bowel evacuation, inhalation can cause a flu like illness (metal fume fever), this 24 to 48-hour illness is characterized by chills, fever, aching muscles, dryness in the mouth, and throat and headache. Physical: non-flammable	75 tons	NA
Mineral Insulating Oil	8012-95-1	Transformers/switchyard	Health: minor health hazard. Physical: may be combustible, depending on manufacturer	37,600 gallons	42 gallons
NALCO BT300	1310-73-2 7758-29-4	Boiler water pH control	Health: corrosive, will cause eye burns and permanent tissue damage Physical: non-flammable.	400 gallons	1,000 pounds
Oxygen	7782-44-7	Welding gas cycle water treatment	Health: therapeutic overdoses can cause convulsions, liquid oxygen is an irritant to skin Physical: oxidizing agent, actively supports combustion.	2,340 cubic feet	NA

Material	*CAS No.*	*Application*	*Hazardous Characteristics*	*Maximum Quantity On Site*	*CERCLA SARA RQ[a]*
Oxygen Scavenger (e.g., NALCO ELIMIN-OX)	None	Oxygen scavenger for boiler water conditioning	Health: may cause asthma like attack if ingested, can cause mild irritation, causes asthmatic signs and symptoms in hyper-reactive individuals. Physical: non-flammable.	400 gallons	NA
Paint	Various	Touchup of painted surfaces	Health: refer to individual container labels. Physical: refer to individual container labels.	Varies (less than 25 gallons liquids or 100 pounds solids for each type)	NA
Propane	74-98-6	Torch gas	Health: asphyxiant gas causes frostbite to area of contact. Physical: flammable.	200 cubic feet	NA
Sodium Bisulfite (NaHSO3) NALCO PC-7408	7664-41-7 141-43-5	Reduce oxidizers in reverse osmosis feed to protect the RO membranes	Health: corrosive, irritation to eyes, skin, and lungs, may be harmful if digested Physical: non-flammable	400 gallons	100 pounds
Sodium Hydroxide (NaOH)	1310-73-2	Convert CO2 to alkalinity for removal by reverse osmosis	Health: causes eye and skin burns, hygroscopic, may cause severe respiratory tract irritation with possible burns, may cause severe digestive tract irritation with possible burns Physical: non-flammable	40 gallons	1,000 pounds
Sodium Hypochlorite	7681-52-9	Cooling tower biological control	Health: harmful by ingestion, inhalation, and through skin contact Physical: non-flammable	10,000 gallons	100 pounds
Sodium Nitrite NALCO 2536 Plus	7632-00-0 6834-92-0 1330-43-4 7631-99-4 2492-26-4	Closed & chilled water loop corrosion inhibitor	Health: very hazardous in case of eye contact (irritant), of ingestion, of inhalation, hazardous in case of skin contact (irritant), slightly hazardous in case of skin contact (permeator), prolonged exposure may result in skin burns and ulcerations, over-exposure by inhalation may cause respiratory irritation, severe over-exposure can result in	30 gallons	100 pounds

Material	CAS No.	Application	Hazardous Characteristics	Maximum Quantity On Site	CERCLA SARA RQ[a]
			death, inflammation of the eye is characterized by redness, watering, and itching Physical: non-flammable		
Sulfur Hexafluoride	2551-62-4	230-KV breaker insulation medium	Health: hazardous if inhaled Physical: non-flammable	200 pounds	NA
Sulfuric Acid (93%)	7664-93-9	Cooling tower pH control	Health: causes severe skin burns, causes severe eye burns, causes burns of the mouth throat, and stomach Physical: non-flammable	6,000 gallons	1,000 pounds
Aqueous ammonia (19%)	1336-21-6	Boiler feedwater pH control	Corrosive liquid, fatal if swallowed, skin and eye burns, toxic and irritating vapor, limited vapor flammability.	800 gallons	1,000 gallons

Source: Ex. 300.

a. Reportable quantities for a pure chemical, per the Comprehensive Environmental Response, Compensation, and Liability Act.

SAMPLE CERTIFICATIONS

(Attachments B, C, and D)

SAMPLE CERTIFICATION (Attachment B)

Affidavit of Compliance for Project Owners

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for employment at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment C)

Affidavit of Compliance for Contractors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that background investigations to ascertain the accuracy of the identity and employment history of all employees of

_____

(Company name)

for contract work at

_____

(Project name and location)

have been conducted as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

SAMPLE CERTIFICATION (Attachment D)

Affidavit of Compliance for Hazardous Materials Transport Vendors

I,

_____

(Name of person signing affidavit)(Title)

do hereby certify that the below-named company has prepared and implemented security plans in conformity with 49 CFR 172.880 and has conducted employee background investigations in conformity with 49 CFR 172, subparts A and B,

_____

(Company name)

for hazardous materials delivery to

_____

(Project name and location)

as required by the California Energy Commission Decision for the above-named project.

_____

(Signature of officer or agent)

Dated this _____ day of _____, 20 _____.

THIS AFFIDAVIT OF COMPLIANCE SHALL BE APPENDED TO THE PROJECT SECURITY PLAN AND SHALL BE RETAINED AT ALL TIMES AT THE PROJECT SITE FOR REVIEW BY THE CALIFORNIA ENERGY COMMISSION COMPLIANCE PROJECT MANAGER.

F. WASTE MANAGEMENT

The Lodi Energy Center will generate nonhazardous and hazardous wastes during construction and operation. This section reviews the project's waste management plans for reducing the risks and environmental impacts associated with handling, storage, and disposal of project-related nonhazardous and hazardous wastes. The evidence on **Waste Management** was undisputed. (Ex. 1, § 5.14, Appendix 5.14A; Exs. 7, 8, 9, 10, 16, 24, 31, 35, 44, 49; Ex. 300, p. 4.13-1 et seq.; Ex. 301, p. 13; 01/05/10 RT 30-31.)

Nonhazardous wastes are degradable or inert materials, which do not contain concentrations of soluble pollutants that could degrade water quality and are therefore eligible for disposal at Class II or III disposal facilities. (Cal. Code Regs., tit. 14, § 17200 et seq.)

Hazardous waste consists of materials that exceed criteria for toxicity, corrosivity, ignitability, or reactivity as established by the California Department of Toxic Substances Control (DTSC).[21] State law requires hazardous waste generators to obtain U.S. EPA identification numbers and contract with registered hazardous waste transporters to transfer hazardous waste to appropriate Class I disposal facilities. (Cal. Code Regs., tit. 22, § 66262.10 et seq.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site Excavation

The certification process requires a Phase I Environmental Site Assessment (ESA) to provide the history of how the site has been used and a list of hazardous waste releases on or near the site to document the presence of any actual or potential soil or water contamination. If the Phase I ESA finds a reasonable likelihood that the site contains hazardous substances, a Phase II ESA must be conducted to analyze the contamination and to establish a remediation plan. (Ex. 300, pp. 4.13-6 to 4.13-7.)

Applicant's Phase I ESA for the project site, dated June 30, 2008, was performed by Carlton Engineering in accordance with the American Society for Testing and Materials (ASTM) Standard Practice E 1527-05 for ESAs. (Ex. 1, § 5.14.1.1; Ex.

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[21] California Health and Safety Code, section 25100 et seq. (Hazardous Waste Control Act of 1972, as amended) and Title 22, California Code of Regulations, Section 66261.1 et seq.

300; p. 4.13-5.) The Phase I ESA found no evidence of any recognized environmental conditions (RECs) at the project site or at off-site locations along the linear corridors.[22] However, since the site was previously used for agriculture and for stockpiling biosolids/sludge from the adjacent water pollution control treatment ponds, Staff requested that Applicant conduct a Phase II ESA to adequately characterize the presence of legacy pesticides and other potentially harmful chemicals that may have contaminated the site. (Exs. 31; 35; Ex. 300, pp. 4.13-7, 4.3-8.)

On March 2, 2009, Applicant's consultants, CH2M HILL, submitted a Preliminary Phase II ESA soil sampling analysis, which was conducted in accordance with the California Department of Toxic Substances Control's (DTSC) *Interim Guidance for Sampling Agricultural Fields for School Sites* (*Aug. 26, 2002*).[23] (Ex. 31.)

CH2M HILL's soil sampling analysis detected residual contaminants at the site including organochlorine pesticides and polycyclic aromatic hydrocarbons (PAHs) at concentrations exceeding the risk-based threshold for human exposure. (Ex. 300, p. 4.13-8; Ex. 31.) Consequently, the DTSC required Applicant to prepare a Preliminary Endangerment Assessment (PEA) and to develop a Remediation Plan to remove the contaminated soils. (Ex. 16.) During preparation of the PEA, Applicant's new consultant, Stantec, determined that CH2M HILL's results had been miscalculated and that concentrations of PAHs and organochlorine pesticides were well below their respective risk-based screening levels. (Ex. 300, p. 4.13-8; Ex. 9.) Subsequently, on December 10, 2009, the DTSC issued a Determination of No Further Action concluding that the site did not appear to pose a risk to health or the environment with the proviso that if hazardous substances should be discovered, appropriate measures and remediation may be required. (Ex. 9.)

We have adopted Conditions of Certification **WASTE-2** and **WASTE-3** to mitigate any previously undetected contaminated soils that may be encountered during excavation and construction. The Conditions require a registered professional

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[22] An REC is considered to be the presence or likely presence of any hazardous substances or petroleum products on a property under the conditions that indicated an existing release, past release, or a material threat of a release of any hazardous substance or petroleum products into structures on the property or in the ground, groundwater, or surface water of the property.

[23] While this guidance document is identified as being specific to school sites, DTSC also uses the guidance for all types of commercial and industrial businesses constructed on agricultural properties. The guidance is intended to assist environmental assessors in designing an initial investigation for sites with historical agricultural uses. (Ex. 300, p. 4.13-7.)

geologist or engineer with experience in remedial investigation to monitor excavation and grading activities and to determine whether soil sampling and remediation would be necessary. We believe that implementation of these Conditions will reduce any potential exposure to contaminated soils to insignificant levels. (Ex. 300, p. 4.13-9.)

2. Construction

Site preparation and construction of the power plant and its associated facilities will generate both nonhazardous and hazardous wastes in solid and liquid forms. Condition **WASTE-1** requires the project owner to develop and implement a Construction Waste Management Plan that identifies all waste streams and the methods of managing each waste. (Ex. 1, § 5.14.1.2.1; Ex. 300, p. 4.13-8.)

a. Nonhazardous Wastes

Construction of the Lodi Energy Center will generate about 205 tons of scrap wood, concrete, steel/metal, paper, glass, and plastic waste. (Ex. 1, § 5.14.1.2.1, **Table 5.14-1**.) These wastes will be recycled where practical. Non-recyclable wastes will be collected and deposited in Class II or Class III landfills pursuant to applicable LORS. (Ex. 300, p. 4.13-8.)

Non-hazardous liquid wastes will also be generated during construction, including sanitary wastes, dust suppression drainage, and equipment wash water. Sanitary wastes will be collected in portable, self-contained toilets and pumped periodically for disposal at an appropriate facility. Potentially contaminated equipment wash water will be contained at designated wash areas and transported to a sanitary wastewater treatment facility. Stormwater runoff will be managed in accordance with the project's Stormwater Pollution Prevention Plan (SWPPP). The **SOIL AND WATER RESOURCES** section of this Decision includes a more detailed discussion of project wastewater. (Ex. 1, § 2.1.10, **Figure 2.1-5A**, §§ 5.14.1.1.2, 5.14.1.2.2, 5.14.2.3; Ex. 300, p. 4.13-9.)

b. Hazardous Wastes

The project will generate two tons of hazardous wastes during construction, including empty hazardous material containers, solvents, waste paint, oil absorbents, used oil, oily rags, batteries, and cleaning wastes.[24] Many of these

[24] This estimate does not include undetected contaminated soils that may require remediation. (Ex. 300, p. 9.)

wastes will be transported to a permitted TSD facility for treatment or recycling. (Ex. 1, §§ 5.14.2.3, 5.14.2.4, 5.14.1.2.1, **Table 5.14-1**; Ex. 300, p. 4.13-9.)

Hazardous wastes, which cannot be recycled, will be accumulated onsite for less than 90 days and then manifested, transported, and deposited at a permitted Class I hazardous waste management facility by licensed hazardous waste collection and disposal companies. The disposal methods described in the evidentiary record indicate that hazardous wastes will be handled in accordance with all applicable LORS. (Ex. 1, §§ 5.14.4.1.2.1, 5.14.4.2.3.2; Ex. 300, p. 4.13-9.)

Condition of Certification **WASTE-4** requires the Project Owner to obtain a unique hazardous waste generator identification number for the site prior to construction. Condition **WASTE-5** requires the Project Owner to notify the Energy Commission's Compliance Project Manager (CPM) whenever a regulatory agency initiates any waste management enforcement action relating to the Lodi Energy Center or its waste disposal contractors. (Ex. 300, p. 4.13-9.)

3. Operation

Condition **WASTE-6** requires the project owner to develop and implement an Operation Waste Management Plan to identify all waste streams and the methods of managing each waste. (Ex. 300, p. 4.13-10.)

a. Nonhazardous Wastes

The project will generate about 39 tons of nonhazardous waste per year, including routine maintenance wastes (such as used air filters, spent deionization resins, sand and filter media) as well as domestic and office wastes (such as office paper, newsprint, aluminum cans, plastic, and glass). (Ex. 1, §§ 5.14.1.2.2, 5.14.2.3.1; Ex. 300, p. 4.13-10.) All non-hazardous wastes will be recycled to the extent feasible, and non-recyclable wastes will be regularly transported offsite to a local solid waste disposal facility. Nonhazardous liquid wastes generated during project operation are discussed in the **SOIL AND WATER RESOURCES** section of this Decision. (*Id.)*

Applicant estimates that about one ton of cooling tower basin sludge will be generated each year during operation. (Ex. 1, § 5.14.1.2.2, **Table 5.14-2**.) The sludge can be disposed of in a Class II landfill if testing shows it is nonhazardous. However, if testing shows the sludge is hazardous then disposal

in a Class I landfill will be required. To ensure proper disposal of sludge, Condition **WASTE-7** requires that the project owner perform the appropriate tests to classify the waste and determine the appropriate method of disposal. (Ex. 300, p. 4.13-10.)

b. Hazardous Wastes

Condition **WASTE-4**, *supra*, which requires the project owner to obtain a hazardous waste generator identification number, applies during project operation. About three tons of hazardous solid wastes will be generated each year during routine project operation, including oil filters and oily rags, spent Selective Catalytic Reduction (SCR) and oxidation catalysts, waste paint and empty containers, as well as batteries, fluorescent light tubes, and similar items. Hazardous liquid wastes include used crankcase oil, used hydraulic oil, chemical cleaning solutions, spent solvents, combustion turbine generator wash water and hydrocarbon contaminated water reclaimed from the oil/water separator. (Ex. 1, § 5.14.1.2.2, **Table 5.14-2**, § 5.14.2.3.2; Ex. 300, pp. 4.13-10, 4.13-12.)

The amount of hazardous waste generated during operation is considered low due to source reduction and recycling when feasible. Hazardous wastes will be temporarily stored onsite and transported by licensed hazardous waste haulers to authorized disposal facilities in accordance with applicable LORS. Condition **WASTE-5**, *supra*, requires the project owner to report any waste management-related enforcement action during project operations. (Ex. 300, pp. 4.13-10, 4.13-11.)

Spills and unauthorized releases of hazardous materials or hazardous wastes may result in contaminated soils. To ensure proper cleanup and management of contamination due to spills, Condition **WASTE-8** requires the project owner/operator to report, clean up, and remediate as necessary, any hazardous materials spills or releases in accordance with applicable law. See the **HAZARDOUS MATERIAL MANAGEMENT** section of this Decision. (Ex. 300, p. 4.13-11.)

4. Potential Impacts on Waste Disposal Facilities

Applicant's **Waste Table 5.14-3** identifies two local Class III waste disposal facilities and two transfer and processing stations, which could accept the

project's nonhazardous construction and operation wastes.[25] (Ex. 1, § 5.14.2.3.1, **Table 5.14-4**.) The combined remaining capacity for the two landfills is over 115 million cubic yards. The total amount of nonhazardous waste generated from project construction and operation will contribute less than one percent to the available landfill capacity. Thus, disposal of the solid wastes generated by the Lodi Energy Center will not significantly impact the capacity or remaining life of any of these facilities. (*Id*; Ex. 300, p. 4.13-11.)

Hazardous wastes are eligible for transport to two of California's available Class I landfills: Clean Harbors Buttonwillow Landfill in Kern County and the Chemical Waste Management Kettleman Hills Landfill in Kings County. The Kettleman Hills facility also accepts Class II, and III waste. In addition, there are several other certified hazardous waste disposal facilities throughout California. Evidence indicates there is sufficient capacity at these facilities to handle the project's hazardous wastes during its operating lifetime. (Exs. 1, § 5.14.2.3.2; 300, p. 4.13-12.)

5. Cumulative Impacts/Environmental Justice

Regarding potential cumulative impacts, the quantities of solid and hazardous wastes generated by the Lodi Energy Center will add to the total quantities of waste generated by new residential and commercial development in California. However the Lodi Energy Center's waste stream is relatively low, recycling efforts will be prioritized, and sufficient disposal capacity is available. As a result, the project's cumulative impacts on disposal facilities will be insignificant for both nonhazardous and hazardous waste disposal. (Ex. 300, p. 4.13-12.)

The Conditions of Certification in the **HAZARDOUS MATERIALS** section of this Decision ensure that the potential risk associated with hazardous waste will be reduced to insignificance for all populations. Therefore, there is no evidence that project waste management will have any disproportionate impact on environmental justice populations in the project vicinity. See the **HAZARDOUS MATERIALS** and **SOCIOECONOMICS** sections of this Decision. (Ex. 300, p. 4.13-13.)

[25] The four facilities include the North County Recycling Center/Sanitary Landfill in Victor; Foothill Sanitary Landfill in Linden; Lovelace Materials Recovery and Transfer Station in Manteca; and CVWS Transfer and Processing Facility in Lodi. (Ex. 1, § 5.14.2.3.1, **Table 5.14-4**.)

FINDINGS OF FACT

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

1. Applicant's Phase I Environmental Site Assessment (ESA) found no evidence of any recognized environmental conditions (RECs) at the project site or along the linear corridors.

2. The project site was previously used for agriculture and for stockpiling biosolids/sludge from the adjacent water pollution control treatment ponds, indicating the potential for impacts from persistent pesticides or other hazardous chemicals not detected at the soil surface.

3. Applicant provided a Phase II ESA soil sampling analysis, which detected residual contaminants at the site in concentrations that exceeded risk levels for human exposure; however, further review of the analysis revealed that the data were misinterpreted and that levels of soil contaminants were actually far below the risk threshold.

4. The Department of Toxic Substances Control issued a Determination of No Further Action on December 10, 2009, concluding that the site did not appear to pose a risk to health or the environment.

5. The project owner will implement appropriate characterization, disposal, and remediation measures to ensure that the risk of exposure to previously undetected contaminated soils at the site or along the linear corridors is reduced to insignificant levels.

6. The project will generate nonhazardous and hazardous wastes during excavation, construction, and operation.

7. The project will recycle nonhazardous and hazardous wastes to the extent feasible and in compliance with applicable law.

8. Hazardous wastes that cannot be recycled will be transported by registered hazardous waste transporters to appropriate Class I landfills.

9. Solid nonhazardous wastes that cannot be recycled will be deposited at Class II and III landfills in the local area.

10. Liquid wastes will be classified for appropriate disposal and managed in accordance with the Conditions of Certification listed in the **Soil and Water Resources** section of this Decision.

11. Disposal of project wastes will not result in any significant direct, indirect, or cumulative impacts on existing waste disposal facilities or create disproportionate impacts on environmental justice populations.

CONCLUSIONS OF LAW

1. Implementation of 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.
2. The management of project wastes will comply with all applicable laws, ordinances, regulations, and standards related to waste management as identified in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall prepare a Construction Waste Management Plan for all wastes generated during construction of the facility, and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- A description of all construction waste streams, including projections of frequency, amounts generated and hazard classifications; and
- Management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans.

Verification: The project owner shall submit the Construction Waste Management Plan to the CPM for approval no less than 30 days prior to the initiation of construction activities at the site. The CPM shall review and approve the Construction Waste Management Plan within 30 days of submission.

WASTE-2 The project owner shall provide the resume of an experienced and qualified Professional Engineer or Professional Geologist, who shall be available for consultation during site characterization (if needed), excavation and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Professional Engineer or Professional Geologist shall be given full authority by the project owner to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM for review and approval.

WASTE-3 If potentially contaminated soil is identified during site characterization, excavation, or grading at either the site or linear facilities, as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Professional Engineer or Professional Geologist shall inspect the suspicious material, determine the need for sampling to confirm the nature and extent of contamination, and provide a written report to the project owner, representatives of Department of Toxic Substances Control (DTSC), and the CPM describing the recommended course of action.

Depending on the nature and extent of contamination, the Professional Engineer or Professional Geologist shall have the authority to temporarily suspend construction activity at the location(s) where contamination is detected for the protection of workers or the public. If, in the opinion of the Professional Engineer or Professional Geologist, significant remediation is required, the project owner shall contact the CPM and representatives of the DTSC for guidance and oversight.

Verification: The project owner shall submit any final reports filed by the Professional Engineer or Professional Geologist to the CPM within five days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-4 The project owner shall obtain a hazardous waste generator identification number from the United States Environmental Protection Agency prior to generating any hazardous waste during construction and operations.

Verification: At least 30 days prior to commencing earth moving activities at the site, the project owner shall obtain and keep a copy of the hazardous waste generator identification (ID) number on file at the project site and provide the number to the CPM in the first Monthly Compliance Report due after receipt of the ID number.

WASTE-5 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 way project-related wastes are managed.

WASTE-6 The project owner shall prepare an Operation Waste Management Plan for all wastes generated during operation of the facility, and shall submit the plan to the CPM for review and approval. The plan shall contain, at a minimum, the following:

- A detailed description of all operation and maintenance waste streams, including projections of amounts to be generated, frequency of generation, and waste hazard classifications;
- Management methods to be used for each waste stream, including temporary onsite storage, housekeeping and best management practices to be employed, treatment methods and companies providing treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/source reduction plans;
- Information and summary records of conversations with the local Certified Unified Program Agency and the DTSC regarding any waste management requirements necessary for project activities. Copies of all required waste management permits, notices, and/or authorizations shall be included in the plan and updated as necessary;
- A detailed description of how facility wastes will be managed, and any contingency plans to be employed, in the event of an unplanned closure or planned temporary facility closure; and
- A detailed description of how facility wastes will be managed and disposed upon closure of the facility.

Verification: The project owner shall submit the Operation Waste Management Plan to the CPM for approval no less than 30 days prior to the start of project operation. The project owner shall submit any required revisions to the CPM within 20 days of notification from the CPM that revisions are necessary. The CPM shall review and approve the final Operation Waste Management Plan within 10 days of submission.

The project owner shall also document in each Annual Compliance Report the actual volume of wastes generated and the waste management methods used during the year; provide a comparison of the actual waste generation and management methods used to those proposed in the original Operation Waste Management Plan; and update the Operation Waste Management Plan as necessary to address current waste generation and management practices.

WASTE-7 The project owner shall ensure that the cooling tower sludge is tested pursuant to Title 22, California Code of Regulations, Division 4.5, section 66262.10 and report the findings to the CPM.

Verification: No later than 60 days after the start of project operations, the project shall provide the results of sludge testing in a report submitted to the CPM. If two consecutive tests show that the sludge is nonhazardous, the project owner may apply to the CPM to discontinue testing.

WASTE-8 The project owner shall ensure that all spills or releases of hazardous substances, hazardous materials, or hazardous waste are reported, cleaned-up, and remediated as necessary, in accordance with all applicable federal, state, and local LORS.

Verification: The project owner shall document all unauthorized releases and spills of hazardous substances, materials, or wastes that occur on the project property or related pipeline and transmission corridors. The documentation shall include, at a minimum, the following information: location of release; date and time of release; reason for release; volume released; amount of contaminated soil/material generated; how release was managed and material cleaned-up; if the release was reported; to whom the release was reported; release corrective action and cleanup requirements placed by regulating agencies; level of cleanup achieved and actions taken to prevent a similar release or spill; and disposition of any hazardous wastes and/or contaminated soils and materials that may have been generated by the release. Copies of the unauthorized spill documentation shall be provided to the CPM within 30 days of the date the release was discovered.

VI. ENVIRONMENTAL ASSESSMENT

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other resources of critical biological interest such as unique habitats. The evidence contained in the record is undisputed (1/5/10 RT 37-38; Exs. 1; 10; 13; 14; 35; 37; 42; 300, pp. 4.2-1 to 4.2-40; 301 and 302) and describes the biological resources in the vicinity of the project site and linear alignments, assesses the potential for adverse impacts, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards (LORS).

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The Lodi Energy Center (LEC) site is located in northern San Joaquin Valley on property owned and incorporated by the City of Lodi in San Joaquin County, approximately six miles west of the Lodi City Center and two miles north of Stockton. This site is in the Sacramento-San Joaquin Delta which historically consisted of large tidally influenced marshes with riparian habitats along natural levees. However, these natural environments have been largely converted to agricultural land uses. White Slough Wildlife Area is located approximately 0.5 mile west of the project site. (Ex. 300, p. 4.2-3.)

The LEC Project consists of the 4.4-acre site, four laydown and parking areas (Laydown Area A through D), totaling 9.8 acres, and a 2.7-mile natural gas pipeline with a 1.1-acre laydown area. Near the project, agricultural production is the predominant land use, with industrial facilities. The LEC site is located along the east and south sides of the existing NCPA Combustion Turbine Project #2 (STIG) power plant. East and north of the LEC site is the City of Lodi White Slough Water Pollution Control Facility (WPCF) treatment and holding ponds. The San Joaquin County Mosquito and Vector Control facility is located to the south. The LEC site and four laydown areas are located on City of Lodi property within an already disturbed and developed area. The 2.7-mile natural gas pipeline would extend to the east of the LEC site and connect to PG&E's high-pressure natural gas pipeline #108. The natural gas pipeline would cross

agricultural areas, follow a drainage ditch, and go along the easement of paved roads near some rural residential areas. (Ex. 300, p. 4.2-4.)

The LEC site and four laydown areas are highly disturbed due to grading and landscaping done previously for the development of the STIG power plant and WPCF sites. As a result, native plant communities are not present on the project site. Approximately 3.4 acres of the 4.4-acre LEC site has been previously graded. Though largely devoid of herbaceous cover, when present, the site is limited to scattered weedy annuals. A paved access road for the current STIG power plant cuts across the south end of the site. The area north of the paved access road is used as a laydown and storage area for ongoing construction at the WPCF. The area south of the paved access road consists of non-native annual grassland/ruderal habitat and includes a low swale area at the southwest corner of the project site. (Ex. 300, p. 4.2-4.)

Four laydown areas for laydown and parking during construction (labeled Laydown Area A through D) are located adjacent to the WPCF totaling 9.8 acres. Laydown Area A is located on the northeast side of the WPCF between a water treatment pond to the west and North Cord Road to the east. Approximately two-thirds of the northern portion of the 3.1-acre site is non-native annual grassland which is routinely mowed. A few small valley oaks (*Quercus lobata*) occur on the north end of Laydown Area A. The southern third of this laydown area consists of a leveled gravel and landscaped area. (Ex. 300, p. 4.2-4 to 4.2-5.)

The 2.2-acre Laydown Area B is located on the southeast corner of the WPCF between the paved access road to the STIG power plant to the west and Interstate 5 (I-5) to the east. Large ornamental landscape trees and a few small valley oaks are scattered throughout with non-native annual grassland components in the understory. (Ex. 300, p. 4.2-5.)

The 1.6-acre Laydown Area C is located south of the WPCF between the paved access road to the STIG power plant to the north and an off-site irrigation canal to the south. This site consists of a planted row of small valley oaks and a Fremont cottonwood on the east end of this area. Non-native annual grassland makes up the understory, though the habitat is disturbed and some areas appear to have been used as temporary storage and laydown. (Ex. 300, p. 4.2-5.)

The 2.9-acre Laydown Area D is located on the south edge of the WPCF, on the north side of the paved access road to the STIG power plant. The area has been leveled and is currently a gravel parking area on its eastern half and stockpiled

with soil and miscellaneous debris on its western half. Along the WPCF fence line in the northwest corner of the laydown area is a patch of weedy vegetation. (Ex. 300, p. 4.2-5.)

The 2.7-mile natural gas pipeline would extend east from the LEC site through the south edge of the WPCF which crosses Laydown Area C, along road easements and a drainage ditch, and crossing agricultural areas until it connects to a PG&E high-pressure natural gas pipeline. The pipeline would be located near a few residential areas and farm structures. At the east end of the alignment, a small area of non-native annual grassland associated with an open farm area is also present along the pipeline. Approximately 0.8 miles of the pipeline route is within agricultural lands consisting of fields of irrigated hay and alfalfa. The remaining 1.9 miles of the pipeline route is within existing graveled or paved farm access roads, paved county roads (North Thornton Road and West Armstrong Road), and developed areas within the LEC site. A 1.1-acre laydown area occurs along North Thornton Road and is already graveled. (Ex. 300, p. 4.2-5.)

Wetlands were not identified within the project area. A technical memorandum dated January 12, 2009, entitled "Wetland Concerns-Technical Memorandum" (Ex. 37) determined that the swale did not meet the criteria of a wetland and therefore, is not considered waters of the United States. The United States Army Corp of Engineers (USACE) issued a finding of no water of the United States on the site based on the technical memorandum and site verification conducted on March 5, 2009. An agricultural drainage located offsite immediately south of the LEC is connected to White Slough and is considered jurisdictional waters of the United States by the USACE. The drainage does support vegetation and is considered potential habitat for giant garter snake (GGS) (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), northwestern pond turtle (*Actinemys marmorata marmorata*), and California black rail (*Laterallus jamaicensis coturniculus*). The giant garter snake and California black rail are known to occur in the White Slough Wildlife Area located approximately 0.5 mile west of the LEC site. (Ex. 42; 300, p. 4.2-5.)

2. Potential Impacts and Mitigation

The project would result in temporary disturbance along the 2.7-mile gas pipeline in agricultural fields and in the already disturbed open space land for the laydown areas. Permanent disturbance would occur with the installation of the LEC and

the new pole foundations for the electrical interconnection within already disturbed/developed areas adjacent to the LEC site. (Ex. 300, p. 4.2-13.)

Biological Resources Table 1
Special-Status Species Historically or Potentially Occurring in the Vicinity of the LEC Site

Scientific Name	Common Name	Status	Habitat Type	Potential To Occur
Plants				
Castilleja campestris ssp. *succulenta*	succulent owl's clover	FT/CE/CNPS List 1B	Vernal pools (often acidic); elevation 160—2,460 feet	Low
Hibiscus lasiocarpus	woolly rose-mallow	CNPS List 2	Freshwater marshes and swamps; elevation 0—400 feet	Low
Lathyrus jepsonii var. *jepsonii*	delta tule pea	CNPS List 1B	Freshwater and brackish marshes and swamps; elevation 0—15 feet	Low
Legenere limosa	legenere	CNPS List 1B	Vernal pools; elevation 3—2,900 feet	Low
Lilaeopsis masonii	Mason's lilaeopsis	CNPS List 1B	Freshwater or brackish marshes and swamps, riparian scrub; elevation 0—33 feet	Low
Limosella subulata	delta mudwort	CNPS List 2	Marshes and swamps; elevation 0—10 feet	Low
Scutellaria lateriflora	blue skullcap	CNPS List 2	Marshes and swamps, mesic meadows and seeps; elevation 0—1,650 feet	Low
Symphyotrichum (=Aster) lentum	Suisun Marsh aster	CNPS List 1B	Brackish and freshwater marshes and swamps; elevation 0—10 feet	Low
Insects and Crustaceans				
Branchinecta lynchi	vernal pool fairy shrimp	FT	Vernal pools	Low
Branchinecta mesovallensis	Midvalley fairy shrimp	CSC	Vernal pools	Low
Desmocerus californicus dimorphus	valley elderberry longhorn beetle	FT	Elderberry shrub stems with diameters of 1 to 8 inches in riparian and oak savannah habitats	Low
Lepidurus packardi	vernal pool tadpole shrimp	FE	Vernal pools and swales	Low

Scientific Name	Common Name	Status	Habitat Type	Potential To Occur
Reptiles and Amphibians				
Ambystoma californiensa	California tiger salamander, central population	FT	Small ponds, lakes or vernal pools	Low
**Actinemys* (*Emys*) *marmorata*	western pond turtle	CSC	Woodlands, grasslands and open forests; occupies aquatic habitats	Moderate – irrigation canal immediately south of site may provide suitable habitat
**Actinemys* (*Emys*) *marmorata marmorata*	northwestern pond turtle	CSC	Woodlands, grasslands and open forests; occupies aquatic habitats	Moderate – irrigation canal immediately south of site may provide suitable habitat
Rana aurora draytonii	California red-legged frog	FT	Permanent and semi-permanent aquatic habitats; may aestivate in rodent burrows or cracks	Low
Rana boylii	foothill yellow-legged frog	CSC	Partly shaded, shallow streams and riffles with a rocky substrate in a variety of habitats; need at least cobble-sized substrate for egg-laying	Low
**Thamnophis gigas*	giant garter snake	FT/CT	Sloughs, canals and other small waterways; requires grassy banks and emergent vegetation for basking	Moderate – irrigation canal immediately south of site may provide suitable aquatic habitat with limited upland habitat in the project area; known from nearby White Slough
Fish				
Acipenser medirostris	green sturgeon	FT	Freshwater and saltwater habitats including deep pools in freshwater rivers, oceanic waters, bays, and estuaries	Low
Hypomesus transpacificus	delta smelt	FT/CT	Brackish water within the Sacramento-San Joaquin estuary	Low
Oncorhynchus mykiss	Central Valley steelhead	FT	Streams, rivers, lakes in Sacramento River basin	Low
Oncorhynchus tshwytscha	Central Valley spring-run Chinook salmon	FT	Sacramento River and its tributaries, primarily Butte, Big Chico, Deer and Mill Creeks	Low
Pogonichthys macrolepidotus	Sacramento splittail	CSC	Slow moving sections, dead end sloughs with flooded vegetation for spawning and foraging. Confined to delta, Suisun Bay, and associated marshes	Low

Scientific Name	Common Name	Status	Habitat Type	Potential To Occur
Birds				
**Agelaius tricolor*	tricolored blackbird	CSC	Nest in dense colonies in emergent marsh vegetation with water at or near the nesting colony; habitat must be large enough to support 50 pairs; requires large foraging areas with insects	Moderate – not observed in the project area; irrigation canal immediately south of site may provide low quality nesting habitat and nearby alfalfa fields could also provide foraging habitat, but linear nature of emergent marsh vegetation and blackberry brambles is marginal habitat and will not support enough tricolored blackbird pairs to have a successful nesting colony.
**Athene cunicularia*	burrowing owl	CSC	Open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals, such as ground squirrels	Moderate – not observed in the project area; suitable habitat for foraging and nesting (ground squirrel burrows present) occurs in areas with non-native annual grassland habitat
Buteo swainsoni	Swainson's hawk	CT	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, grain fields	High – observed in project area; suitable nest trees and foraging habitat present within ¼–mile of the proposed laydown areas
Elanus leucurus	white-tailed kite	CFP	Nests in a variety of tree species associated with low grasslands, agricultural areas, oak savannas, and other open areas suitable for foraging	High – observed on site; nest observed adjacent to proposed lay down areas during surveys

Scientific Name	Common Name	Status	Habitat Type	Potential To Occur
Birds (Continued)				
**Laterallus jamaicensis coturniculus*	California black rail	CT, CFP	Salt and freshwater marshes with dense vegetation	Moderate – not observed in project area; irrigation canal immediately south of site may provide low quality habitat; known from nearby White Slough

Source: Ex. 300, pp. 8 to 11.

*** =** Suitable habitat present in project area though not observed during surveys

Status Key

State Status

CE = State listed as Endangered
CT = State listed as Threatened
CSC = California Species of Concern
CFP = California DFG Fully Protected Species

California Native Plant Society (CNPS) Status

List 1B = Plants considered rare, threatened, or endangered in California, but elsewhere
List 2 = Plants considered rare, threatened, or endangered in California, but more common elsewhere

Federal Status

FE = Federally listed as Endangered proposed site;
FT = Federally listed as Threatened
FC = Candidate for Federal listing

Potential to Occur

High = Suitable habitat is present within the occurrence records exist for species in proximity to the site;
species expected to occur on site
Moderate = Low-quality suitable habitat is present within or near the proposed site; species was not identified during reconnaissance surveys of the site; species not expected to occur
Low = Suitable habitat is not present on site; species not expected to occur

3. Construction Impacts and Mitigation

Construction activities will result in the disturbance of approximately 25.5 acres of land (consisting of agricultural areas and already developed/disturbed areas): an estimated 21.1 acres would be temporarily disturbed (11.3 acres plus 9.8 acres) and approximately 4.4 acres would be permanently disturbed. 5.9 acres of the LEC site is considered GGS habitat, whereas 3.55 acres along the pipeline route is considered Swainson's hawk habitat. The project site is located within an already developed/disturbed area, with permanent impacts to native trees near the swale at the southwest corner of the LEC site. (Ex. 300, p. 4.2-14.)

The record includes a San Joaquin Council of Governments (SJCOG) recommendation that mitigation for impacts to 5.9 acres of GGS habitat and 3.55 acres of Swainson's hawk habitat be compensated by acquiring the conservation easement for SJCOG for the 21.25-acre mitigation land (5.9 acres x 3:1 mitigation ratio = 17.7 acres; 3.55 acres x 1:1 mitigation ratio = 3.5 acres; 17.7 acres + 3.5 acres = 21.25 acres) located on City of Lodi property immediately east of the White Slough Wildlife Preserve. Including Conditions of Certification, mitigation for the variance would offset impacts to biological resources to less-than-significant levels. Installation of the gas pipeline would be mitigated by restoring the site to agricultural use once installation is complete. (Ex. 300, p. 4.2-14.)

Special-status plant species are not expected to occur in the project area because there is no suitable habitat within the LEC site as a result of ongoing disturbance from industrial and adjacent agricultural operations. However, several special-status wildlife species were identified that are known to utilize the surrounding agricultural habitat and thus have potential to occur in the project area. These species include tricolored blackbird, burrowing owl, Swainson's hawk, white-tailed kite, California black rail, western pond turtle, northwestern pond turtle, and giant garter snake. The project area is located within designated critical habitat for delta smelt (*Hypomesus transpacificus*), but the project will not affect any creeks, drainages, wetlands, or other aquatic resources. (See Conditions of Certification **SOIL & WATER-1** and **SOIL & WATER-2** for more details in the **Soil and Water Resources** section of this Decision). (Ex. 300, p. 4.2-15.)

Tricolored blackbird is a California Species of Concern that is a permanent resident in the Central Valley. The evidence indicates that there is no record of the presence of tricolored blackbird within five miles of the project or evidence of

the tricolored blackbird in the area observed during surveys. Significant adverse impacts to tricolored blackbird are not expected to occur from construction of the project with the implementation of Conditions of Certification **BIO-8** (Mitigation Management to Avoid Harassment or Harm) and **BIO-12** (Pre-Construction Nest Surveys and Impact Avoidance for Migratory Birds); **BIO-4** (Designated Biologist and Biological Monitor Authority) in which the Designated Biologist can call a halt to any activities that would be an adverse impact to biological resources; **BIO-5** (Worker Environmental Awareness Program) in which workers on the project site or any related facilities are informed about sensitive biological resources; **BIO-6** (Biological Resources Mitigation Implementation and Monitoring Plan) which identifies all biological resources mitigation, monitoring, compliance measures, Conditions of Certification, and permits; and **BIO-7** (Impact Avoidance and Minimization Measures) in which all feasible measures which avoid or minimize impacts to the local biological resources are incorporated in any modification or finalization of project design. (Ex. 300, pp. 4.2-15 to 4.2-16.)

California black rail is a California Threatened and a Fully Protected species that is a yearlong resident of dense emergent marsh vegetation. The evidence indicates that the nearest recorded occurrence is approximately 0.5 mile west of the project at the White Slough Wildlife Area. The irrigation canal immediately south of the project site connects to the White Slough Wildlife Area and provides marginal habitat at best for black rails. However, due to the limited amount of emergent marsh vegetation along the irrigation canal immediately south of the site, the intensive agricultural practice of irrigation in nearby fields and fluctuating water levels in the canal, black rails are not expected to occur in the off-site canal. The parties agree and we find that significant adverse impacts to black rail are not expected to occur from construction of the project with the implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, and **BIO-12**. (Ex. 300, pp. 4.2-16 to 4.2-17.)

Burrowing owl is a California Species of Concern that is a yearlong resident of open, dry grassland, prairie, or desert floor. The nearest recorded occurrence is approximately 3.5 miles south of the project. The parties agree and we find that implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, **BIO-12**, and **BIO-10** will avoid and mitigate potentially adverse impacts to burrowing owl to less-than-significant levels. Mitigation includes preconstruction surveys, relocation, if necessary, and a 250 foot buffer zone around any burrow site within the project area. (Ex. 300, p. 4.2-17.)

Swainson's hawk is a California Threatened species that requires large amounts of foraging habitat, preferably grassland or pasture habitats. Swainson's hawk nest surveys in the record indicate the presence of five active nests observed within 0.5 miles of the project site and gas pipeline. It is estimated that 3.55 acres of agricultural fields, which are considered Swainson's hawk habitat, would be impacted by the construction of the gas pipeline. The parties agree and we find that implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, **BIO-12**, and **BIO-11** will avoid and mitigate potentially adverse impacts to Swainson's hawk to less-than-significant levels. This includes a one-time endowment fee of $4,603.74 per acre for the actual acres impacted by the project. The one-time endowment fee for the impacting 3.55 acres of Swainson's hawk habitat is expected to total $16,343.28 (3.55 acres x $4,603.74 = $16,343.28). (Ex. 300, pp. 4.2-17 to 4.2-18.)

White-tailed kite is a California Fully Protected species that is a yearlong resident of the Central Valley, coastal range, and foothills. A white-tailed kite nest was observed on the side of Laydown Area D of the LEC Project site during a survey conducted on April 30, 2008. The parties agree and we find that Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, and **BIO-12** will ensure that impacts to white-tailed kite are mitigated to less than significant levels. Mitigation includes preconstruction surveys within 30 days prior to the start of construction and postponement of clearing and construction within 100 feet of an active nest identified in the survey until the nest is vacated and the juveniles have fledged. (Ex. 300, pp. 4.2-18 to 4.2-19.)

Giant Garter Snake (GGS), a California and Federally Threatened Species, utilizes freshwater marshes, sloughs, ponds, and other aquatic habitats such as irrigation canals, drainages, reservoirs, and rice fields during the spring-through-fall active season. During its winter dormancy period, GGS typically occupy small mammal burrows and soil crevices in higher elevation uplands not subject to flooding. The nearest recorded occurrence of GGS has been reported approximately 0.5 mile northwest of the LEC project site. The vegetated irrigation canal immediately south of the project site and connected to the White Slough Wildlife Area provides suitable habitat for GGS which could occur incidentally in the adjacent uplands within the project site and associated laydown areas.

To avoid and minimize potential impacts to GGS, the parties have agreed to several mitigation measures including maintaining a 30-foot buffer area from the edge of the irrigation canal, limiting grading during the active season for the GGS

between May 1 and October 31 when working within the 200-foot GGS setback, wire backed silt fencing installed to prevent snakes and other wildlife from entering the work areas, preconstruction surveys and compensation for the loss of approximately 5.90 acres of upland habitat for the GGS. We find that the mitigation for the loss of 5.9 acres at a 3:1 habitat compensation ratio totaling approximately 17.7 acres plus a one-time endowment fee of $4,603.74 per acre for the actual acres impacted by the project is adequate. The parties agree and we find that implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, and **BIO-9** is sufficient to mitigate impacts to GGS to less-than-significant levels. (Ex. 300, pp. 4.2-19 to 4.2-20.)

Northwestern and western pond turtles are California Species of Concern that are found in ponds, lakes, rivers, streams, creeks, marshes, and irrigation ditches with abundant vegetation, and either rocky or muddy bottoms, in woodland, forest, and grassland. The nearest occurrence of the northwestern pond turtle is approximately 1.7 miles southwest of the project site in Telephone Cut along the north side of Bishop Tract. The western pond turtle has been reported approximately 0.7 miles to the northwest of the project site. There is no suitable aquatic habitat in the project area; however, the irrigation canal immediately south of the project site provides suitable habitat for these species. They could also occur incidentally in the adjacent upland areas of the project site, so there is the potential for adverse impacts to individuals to be directly impacted during project construction. (Ex. 300, pp. 4.2-20 to 4.2-21.)

To avoid and minimize potential impacts to pond turtles, the parties have agreed to several mitigation measures including preconstruction surveys, temporary fencing along the edge of the irrigation canal and posting of signs identifying the area as environmentally sensitive. If a turtle or nest is identified in the work area, the CDFG must immediately be contacted to determine the appropriate mitigation and avoidance measures to be taken prior any ground disturbance within 300 feet of the nest. The parties agree and we find that implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, and **BIO-13** are necessary to ensure that impacts to northwestern and western pond turtles are mitigated to less-than-significant levels. (Ex. 300, p. 4.2-21.)

Migratory birds and resident native birds such as killdeer and red-tailed hawks were observed nesting either on the LEC site or in the project area during 2008 surveys. Though many of the native birds are not special-status species, these birds are protected under the federal Migratory Bird Treaty Act which prohibits the take or possession of any migratory nongame bird (or any part of such

migratory nongame bird), including nests with viable eggs. Implementation of Conditions of Certification **BIO-4**, **BIO-5**, **BIO-6**, **BIO-7**, **BIO-8**, and **BIO-12** will reduce the impacts to native birds to less than significant levels. (Ex. 300, p. 4.2-21.)

Construction activities have the potential to create a variety of temporary impacts to biological resources including a short-term temporary increase in the ambient noise level. Increased noise may disrupt the nesting, roosting, or foraging activities of local wildlife. However, the existing NCPA Combustion Turbine Project #2 (STIG) power plant, City of Lodi White Slough Water Pollution Control Facility (WPCF), traffic on I-5, and intensive agricultural operations in the immediate vicinity of the LEC site create an elevated ambient noise level to which local wildlife species have acclimated. As such, construction noise is not expected to adversely impact biological resources. For a complete discussion of noise impacts, see the **Noise** section of this Decision. (Ex. 300, pp. 4.2-21 to 4.2-22.)

Construction is scheduled to occur from 6 a.m. to 11 p.m. with additional hours as necessary to make up schedule deficiencies or to complete critical construction activities. To facilitate night-time construction activities, lighting will be directed toward the center of the construction site and shielded to prevent backscatter. There may be limited times during the 24-month construction period when the project site may appear as a brightly lit area, but due to its limited duration, the excess lighting will not significantly impact wildlife in the vicinity of the LEC site. Further, the record indicates that the existing WPCP and STIG facilities provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. For a complete discussion of visual resource impacts, see the **Visual Resources** section of this Decision. (Ex. 300, p. 4.2-22.)

4. Operational Impacts and Mitigation

Potential impacts resulting from operation of the LEC include avian collision with project structures and/or electrocution by the electric interconnection facilities and disturbance to wildlife due to increased noise and lighting. (Ex. 300, p. 4.2-22.)

The LEC project includes a 150-foot exhaust stack, a 105-foot heat recovery steam generator, one turning pole no more than 73 feet tall, and five 73-foot monopole support towers. The transmission tower structures will support

approximately 1100 feet of new transmission lines that will tie the plant to the existing STIG power plant's 230-kV switchyard. Bird collisions with power lines and transmission structures generally occur when a power line or other structure transects a daily flight path used by a concentration of birds and when migrating birds which are traveling at reduced altitudes encounter tall structures in their path. The parties agree and the record indicates that the LEC transmission structures will not pose a significant collision threat to resident or migratory bird populations. (Ex. 300, p. 4.2-22.)

Large perching birds such as red-tailed hawk, Swainson's hawk, and white-tailed kite, are susceptible to transmission line electrocution. Electrocution occurs only when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. The LEC transmission lines will be 230-kV; therefore, phase-to-phase and phase-to-ground clearances will be sufficient to minimize bird electrocutions. Also, the phase conductors will be separated by a minimum of 60 inches. Condition of Certification **BIO-7** requires that bird perch diverters and/or specifically designed avian protection materials will be used to cover electrical equipment where adequate separation is not feasible. With implementation of this mitigation, we find that there will be no significant avian mortality due to electrocution by LEC transmission structures. (Ex. 300, pp. 4.2-21 to 4.2-23.)

Wildlife species near the LEC site are accustomed to elevated ambient noise levels as a result of the existing STIG power plant, WPCF, traffic on I-5, and intensive agricultural operations. Although operation of the LEC will create additional noise, we find that there will be no significant impacts to wildlife. (Ex. 300, p. 4.2-23.)

The evidence establishes that existing energy facilities adjacent to the LEC site provide an elevated ambient level of lighting to which local wildlife, including nocturnal species, have acclimated. Although operation of the LEC will create additional light, we find that there will be no significant impacts to wildlife from lighting during operation. (Ex. 300, p. 4.2-23.)

An accidental release of hazardous materials such as anhydrous ammonia and sodium hypochlorite has the potential to negatively impact sensitive biological species if these species are found on the project site or nearby. The record shows that the probability of a hazardous materials spill occurring at LEC is extremely low. We find that appropriate procedures will be in place to address any disposal and/or treatment of hazardous materials on the project site. For a

complete discussion of these standard procedures, see the **Hazardous Materials** and **Waste Management** sections of this Decision. Due to the lack of sensitive biological resources on site and the extremely low probability of a catastrophic hazardous materials spill, we find that there will be no significant impact to biological resources associated with hazardous materials. (Ex. 300, p. 4.2-23.)

5. Cumulative Impacts

The LEC Project would impact approximately 5.90 acres of upland habitat for the GGS and 3.55 acres of agricultural fields, which are considered Swainson's hawk habitat. SJCOG will hold a conservation easement for 21.25 acres of compensation land owned by the City of Lodi. This land is immediately east of the White Slough Wildlife Preserve and is considered by the United States Fish and Wildlife Service (USFWS) as higher quality habitat than what will be affected by the project. In addition to the LEC, there are ongoing improvements at the adjacent WPCF. There are no other projects within four miles of the project that will affect areas designated as agriculture and open space. A total of 72 projects located throughout San Joaquin County may decrease open space. The construction of these projects throughout the County would adversely affect the special-status species due to increased habitat destruction and fragmentation. However, agricultural production throughout the County has already created very fragmented habitats. The LEC would be constructed on what is currently an already developed and disturbed area so minimal open space acreage will be affected. LEC's participation in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) for the project is intended to address long-term impacts to covered special-status species and will mitigate cumulative impacts to these species to a less than significant level. (Ex. 300, p. 4.2-24.)

6. LORS Compliance

The SJMSCP provides guidance for protection of sensitive wildlife and plant communities in the San Joaquin County region. NCPA has participated in the SJMSCP for the LEC Project. For compliance with the SJMSCP, NCPA proposed mitigation for a variance on the required 200-foot setback for GGS habitat. The Habitat Technical Advisory Committee (HTAC), consisting partly of SJCOG's Habitat Planners and representatives from the USFWS and California Department of Fish and Game (CDFG), has approved the mitigation for the variance. The record establishes and, accordingly, we find that implementation

of Conditions of Certification which incorporate various HTAC required mitigation measures will result in the LEC Project being in compliance with all state, federal, and local LORS.

FINDINGS OF FACT

Based on the uncontroverted record of evidence, we find the following:

1. The LEC project consists of the 4.4-acre LEC site, four laydown and parking areas, totaling 9.8 acres, and a 2.7-mile natural gas pipeline with a 1.1-acre laydown area.
2. The LEC site and four laydown areas are highly disturbed due to grading and landscaping done previously for the development of the STIG power plant and WPCF sites.
3. The project would result in temporary disturbance along the 2.7-mile gas pipeline in agricultural fields and in the already disturbed open space land for the laydown areas.
4. Installation of the gas pipeline would be mitigated by restoring the site to agricultural use once installation is complete.
5. Permanent disturbance would occur with the installation of the LEC and the new pole foundations for the electrical interconnection within already disturbed/developed areas adjacent to the LEC site.
6. Special-status plant species are not expected to occur in the project area because there is no suitable habitat within the LEC site as a result of ongoing disturbance from industrial and adjacent agricultural operations.
7. Several special-status wildlife species, such as the tricolored blackbird, burrowing owl, Swainson's hawk, white-tailed kite, California black rail, western pond turtle, northwestern pond turtle, and giant garter snake, are known to utilize the surrounding agricultural habitat and thus have potential to occur in the project area.
8. The evidence contains an analysis of potential adverse impacts of the Lodi Energy Project upon biological resources, including special-status species, which may potentially be affected by project construction and operation.
9. Mitigation for impacts to 5.9 acres of giant garter snake habitat and 3.55 acres of Swainson's hawk habitat will be compensated by acquiring a 21.25-acre conservation easement for SJCOG plus a one-time endowment fee of $4,603.74 per acre for the actual acres impacted by the project.
10. Potential direct impacts to special-status species in the surrounding area can be mitigated with implementation of setbacks, habitat compensation, and

other impact minimization and avoidance measures set forth in the Conditions of Certification.

11. The project owner will implement a construction mitigation management plan by educating workers on habitat protection, and designating a qualified biologist and biological monitors with authority to halt activities to avoid impacts to sensitive biological resources.
12. The project owner will submit a Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP) incorporating all biological mitigation and compliance measures required by applicable local, state, and federal LORS.
13. LEC transmission structures will not pose a significant collision threat to resident or migratory bird populations.
14. Transmission lines will not pose a significant risk of avian collisions and electrocutions.
15. Wildlife species near the LEC site are accustomed to elevated ambient noise levels as a result of the existing industrial and agricultural uses and traffic on I-5, such that the construction and operation noise of the LEC will not create significant impacts to biological resources.
16. Wildlife species near the LEC site are acclimated to an elevated ambient level of night-time lighting such that the construction and operation of the LEC will not create significant impacts to wildlife as a result of lighting.
17. There will be no significant impact to biological resources associated with hazardous materials.

CONCLUSIONS OF LAW

1. The project owner will implement appropriate avoidance and mitigation measures to prevent significant adverse impacts to all sensitive species.
2. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification below, as well as those in other portions of this Decision, the Lodi Energy Project will not result in significant direct, indirect, or cumulative impacts to biological resources.
3. With implementation of the mitigation measures described in the evidentiary record and incorporated into the Conditions of Certification, the Lodi Energy Project will conform to all applicable laws, ordinances, regulations, and standards related to biological resources as identified in the pertinent portion of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

Designated Biologist Selection

BIO-1 The project owner shall assign a Designated Biologist to the project. The project owner shall submit the resume of the proposed Designated Biologist, with at least three references and contact information, to the Energy Commission Compliance Project Manager (CPM) for approval.

The Designated Biologist must at least meet the following minimum qualifications:

1. Bachelor's Degree in biological sciences, zoology, botany, ecology, or a closely related field; and
2. Three years of experience in field biology or current certification of a nationally recognized biological society, such as The Ecological Society of America or The Wildlife Society; and
3. At least one year of field experience with biological resources found in or near the project area.

In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed Designated Biologist or alternate has the appropriate training and background to effectively implement the Conditions of Certification.

Verification: The project owner shall submit the specified information at least 90 days prior to the start of any site (or related facilities) mobilization. No site or related facility activities shall commence until an approved Designated Biologist is available to be on site.

If a Designated Biologist needs to be replaced, the specified information of the proposed replacement must be submitted to the CPM at least 10 working days prior to the termination or release of the preceding Designated Biologist. In an emergency, the project owner shall immediately notify the CPM to discuss the qualifications and approval of a short-term replacement while a permanent Designated Biologist is proposed to the CPM for consideration.

Designated Biologist Duties

BIO-2 The project owner shall ensure that the Designated Biologist performs the following during any site (or related facilities) mobilization, ground disturbance, grading, construction, operation, and closure activities. The Designated Biologist may be assisted by the approved Biological Monitor(s), but remains the contact for the project owner and CPM.

1. Advise the project owner's Construction and Operation Managers on the implementation of the biological resources Conditions of Certification;
2. Consult on the preparation of the Biological Resources Mitigation Implementation and Monitoring Plan, to be submitted by the project owner;

3. Be available to supervise, conduct and coordinate mitigation, monitoring, and other biological resources compliance efforts, particularly in areas requiring avoidance or containing sensitive biological resources, such as special status species or their habitat;
4. Clearly mark sensitive biological resource areas and inspect these areas at appropriate intervals for compliance with regulatory terms and conditions;
5. Inspect active construction areas where animals may have become trapped prior to construction commencing each day. At the end of the day, inspect for the installation of structures that prevent entrapment or allow escape during periods of construction inactivity. Periodically inspect areas with high vehicle activity (i.e. parking lots) for animals in harm's way;
6. Notify the project owner and the CPM of any non-compliance with any biological resources Condition of Certification;
7. Respond directly to inquiries of the CPM regarding biological resource issues;
8. Maintain written records of the tasks specified above and those included in the BRMIMP. Summaries of these records shall be submitted in the Monthly Compliance Report and the Annual Report; and
9. Train the Biological Monitors as appropriate, and ensure their familiarity with the BRMIMP, Worker Environmental Awareness Program (WEAP) training and all permits.

Verification: The Designated Biologist shall submit in the Monthly Compliance Report to the CPM copies of all written reports and summaries that document biological resources activities. If actions may affect biological resources during operation a Designated Biologist shall be available for monitoring and reporting. During project operation, the Designated Biologist shall submit record summaries in the Annual Compliance Report unless their duties are ceased as approved by the CPM.

Biological Monitor Qualifications

BIO-3 The project owner's CPM-approved Designated Biologist shall submit the resume, at least three references, and contact information of the proposed Biological Monitors to the CPM for approval. The resume shall demonstrate to the satisfaction of the CPM, the appropriate education and experience to accomplish the assigned biological resource tasks.

Biological Monitor(s) training by the Designated Biologist shall include familiarity with the Conditions of Certification and the Biological Resources Mitigation Implementation and Monitoring Plan (BRMIMP), WEAP and all permits.

Verification: The project owner shall submit the specified information to the CPM for approval at least 30 days prior to the start of any site (or related facilities) mobilization. The Designated Biologist shall submit a written statement to the CPM confirming that individual Biological Monitor(s) have been trained including the date when training was completed. If additional Biological Monitors are needed during construction, the specified information shall be submitted to the CPM for approval 10 days prior to their first day of monitoring activities.

Designated Biologist and Biological Monitor Authority

BIO-4 The project owner's Construction/Operation Manager shall act on the advice of the Designated Biologist and Biological Monitor(s) to ensure conformance with the biological resources Conditions of Certification.
If required by the Designated Biologist and Biological Monitor(s), the project owner's Construction/ Operation Manager shall halt all site mobilization, ground disturbance, grading, construction, and operation activities in areas specified by the Designated Biologist.

The Designated Biologist shall:

1. Require a halt to all activities in any area when determined that there would be an unauthorized adverse impact to biological resources if the activities continued;
2. Inform the project owner and the Construction/Operation Manager when to resume activities; and
3. Notify the CPM if there is a halt of any activities, and advise the CPM of any corrective actions that have been taken, or will be instituted, as a result of the work stoppage.

If the Designated Biologist is unavailable for direct consultation, the Biological Monitor shall act on behalf of the Designated Biologist.

Verification: The project owner shall ensure that the Designated Biologist or Biological Monitor notifies the CPM immediately (and no later than the following morning of the incident, or Monday morning in the case of a weekend) of any non-compliance or a halt of any site mobilization, ground disturbance, grading, construction, and operation activities. The project owner shall notify the CPM of the circumstances and actions being taken to resolve the problem.

Whenever corrective action is taken by the project owner, a determination of success or failure will be made by the CPM within five working days after receipt of notice that corrective action is completed, or the project owner will be notified by the CPM that coordination with other agencies will require additional time before a determination can be made.

Worker Environmental Awareness Program

BIO-5 The project owner shall develop and implement a CPM approved Worker Environmental Awareness Program (WEAP) in which each of its employees, as well as employees of contractors and subcontractors

who work on the project site or any related facilities during site mobilization, ground disturbance, grading, construction, operation and closure are informed about sensitive biological resources associated with the project.

The WEAP must:

1. Be developed by or in consultation with the Designated Biologist and consist of an on-site or training center presentation in which supporting written material and electronic media (video or DVD) is made available to all participants;
2. Discuss the locations and types of sensitive biological resources on the project site and adjacent areas;
3. Present the reasons for protecting these resources;
4. Present the meaning of various temporary and permanent habitat protection measures;
5. Identify whom to contact if there are further comments and questions about the material discussed in the program; and
6. Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

The specific program can be administered by a competent individual(s) acceptable to the Designated Biologist.

Verification: At least 60 days prior to the start of any site (or related facilities) mobilization, the project owner shall provide to the CPM (for review and approval) and the SJCOG, Inc., (SJCOG) Habitat Technical Advisory Committee (HTAC) for review and comment, two copies each of the proposed WEAP and all supporting written materials and electronic media prepared or reviewed by the Designated Biologist and a resume of the person(s) administering the program.

The project owner shall provide in the Monthly Compliance Report the number of persons who have completed the training in the prior month and a running total of all persons who have completed the training to date. At least 10 days prior to site and related facilities mobilization submit two copies of the CPM approved materials.

The signed training acknowledgement forms from construction shall be kept on file by the project owner for a period of at least six months after the start of commercial operation.

During project operation, signed statements for active project operational personnel shall be kept on file for six months following the termination of an individual's employment.

Biological Resources Mitigation Implementation and Monitoring Plan

BIO-6 The project owner shall submit two copies of the proposed Biological Resources Mitigation Implementation and monitoring Plan (BRMIMP) to the CPM (for review and approval) and to the HTAC (for review and comment) and shall implement the measures identified in the approved BRMIMP.

The BRMIMP shall be prepared in consultation with the Designated Biologist and shall identify:

1. All biological resources mitigation, monitoring, and compliance measures proposed and agreed to by the project owner;
2. All biological resources Conditions of Certification identified as necessary to avoid or mitigate impacts;
3. All biological resources mitigation, monitoring and compliance measures required in the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) terms and conditions, as approved by the HTAC;
4. All biological resources mitigation, monitoring and compliance measures required in local agency permits, such as site grading and landscaping requirements;
5. All sensitive biological resources to be impacted, avoided, or mitigated by project construction, operation and closure;
6. All required mitigation measures for each sensitive biological resource;
7. Required habitat compensation strategy, including provisions for acquisition, enhancement, and management for any temporary and permanent loss of sensitive biological resources;
8. A detailed description of measures that shall be taken to avoid or mitigate temporary disturbances from construction activities;
9. All locations on a map, at an approved scale, of sensitive biological resource areas subject to disturbance and areas requiring temporary protection and avoidance during construction;
10. Aerial photographs, at an approved scale, of all areas to be disturbed during project construction activities - one set prior to any site or related facilities mobilization disturbance and one set subsequent to completion of project construction. Include planned timing of aerial photography and a description of why times were chosen;
11. Duration for each type of monitoring and a description of monitoring methodologies and frequency;

12. Performance standards to be used to help decide if/when proposed mitigation is or is not successful;
13. All performance standards and remedial measures to be implemented if performance standards are not met;
14. A preliminary discussion of biological resources related facility closure measures;
15. Restoration and revegetation plan;
16. A process for proposing plan modifications to the CPM and appropriate agencies for review and approval; and
17. A copy of all biological resources related permits obtained.

Verification: The project owner shall provide the specified document at least 60 days prior to start of any site (or related facilities) mobilization.

The CPM, in consultation with the HTAC and approval by the SJCOG Joint Powers Authority (JPA), will determine the BRMIMP's acceptability within 45 days of receipt. If there are any permits that have not yet been received when the BRMIMP is first submitted, these permits shall be submitted to the CPM and the HTAC within five days of their receipt and the BRMIMP shall be revised or supplemented to reflect the permit condition within 10 days of their receipt by the project owner. Ten days prior to site and related facilities mobilization the revised BRMIMP shall be resubmitted to the CPM.

The project owner shall notify the CPM no less than five working days before implementing any modifications to the approved BRMIMP to obtain CPM approval. Any changes to the approved BRMIMP must also be approved by the CPM and submitted to the HTAC to ensure no conflicts exist.

Implementation of BRMIMP measures will be reported in the Monthly Compliance Reports by the Designated Biologist (i.e. survey results, construction activities that were monitored, species observed). Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction closure report identifying which items of the BRMIMP have been completed, a summary of all modifications to mitigation measures made during the project's site mobilization, ground disturbance, grading, and construction phases, and which mitigation and monitoring items are still outstanding.

Impact Avoidance and Minimization Measures

BIO-7 Any time the project owner modifies or finalizes the project design they shall incorporate all feasible measures that avoid or minimize impacts to the local biological resources, including:

1. Design, install and maintain transmission line poles, access roads, pulling sites, and storage and parking areas to avoid identified sensitive resources;

2. Design, install and maintain transmission lines and all electrical components in accordance with the Avian Power Line Interaction Committee (APLIC 2006) *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* to reduce the likelihood of electrocutions of large birds;
3. Eliminate any California Exotic Pest Plants of Concern (Cal-IPC 2007) List A species from landscaping plans;
4. Prescribe a road sealant that is non-toxic to wildlife and plants;
5. Design, install, and maintain facility lighting to prevent side casting of light towards wildlife habitat;
6. Use straw wattles or silt fences to prevent sediment from reaching irrigation and drainage canals;
7. Establish buffer zones around active irrigation and drainage canals;
8. Fence buffer zones during construction to minimize habitat disturbance; and
9. Restore temporarily impacted areas to approximate original site conditions.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how measures have been completed.

Mitigation Management to Avoid Harassment or Harm

BIO-8 The project owner shall implement the following measures to manage their construction site, and related facilities, in a manner to avoid or minimize impacts to the local biological resources.

1. Install temporary fencing and provide wildlife escape ramps for construction areas that contain steep walled holes or trenches if outside of an approved, permanent exclusionary fence. The temporary fence shall be hardware cloth or similar materials that are approved by USFWS and CDFG. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals by the Designated Biologist or Biological Monitor;
2. Make certain all food-related trash is disposed of in closed containers and removed at least once a week from the project site;
3. Prohibit feeding of wildlife by Staff and Subcontractors;
4. Prohibit non-security related firearms or weapons from being brought to the site;
5. Prohibit pets from being brought to the site;

6. Report all inadvertent deaths of special-status species to the appropriate project representative. Injured animals shall be reported to CDFG and the project owner shall follow instructions that are provided by CDFG. The Sacramento USFWS Office shall be notified in writing within three working days of the accidental death or injury to giant garter snake during project related activities. Contact USFWS and CDFG for specific notification procedures;
7. Minimize use of rodenticides and herbicides in the project area and prohibit the use of chemicals and pesticides known to cause harm to amphibians. If rodent control must be conducted, zinc phosphide or an equivalent product shall be used; and
8. Construction activities associated with vegetation removal when working within the 200-foot GGS setback, initial ground disturbance, and grading would be completed during the active season for giant garter snake between May 1 and October 31.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Implementation of the measures will be reported in the Monthly Compliance Reports by the Designated Biologist. Within 30 days after completion of project construction, the project owner shall provide to the CPM, for review and approval, a written construction termination report identifying how all biological resource-related mitigation measures have been completed.

Giant Garter Snake Habitat Compensation

BIO-9 To mitigate impacts to the giant garter snake and its habitat, the project owner shall implement impact avoidance and minimization measures for construction activities in giant garter snake habitat and provide habitat compensation for temporary and permanent impacts to giant garter snake at a 3:1 mitigation ratio and a one-time endowment fee of $27,162.07 as required by the SJMSCP.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Within 15 days of site or related facilities mobilization, the project owner shall submit written verification to the CPM and the HTAC that the transaction for habitat compensation has occurred. A discussion of implementation of giant garter snake mitigation and avoidance measures shall be provided to the CPM in monthly compliance reports as necessary.

Burrowing Owl Mitigation

BIO-10 The project owner shall implement all mitigation and impact avoidance measures outlined in CDFG's (1995) *Staff Report on Burrowing Owl Mitigation*. Pre-construction surveys for burrowing owls shall be conducted no more than 14 days prior to site mobilization. In the event

that owls or owl sign are identified in the survey, the project owner shall do the following:

1. Location(s) of owls and owl sign will be mapped and noted. In the event an active burrow would be affected by the project, replacement burrows will be constructed at a location approved by the HTAC and passive relocation of the owls will occur prior to the start of construction. Passive relocation would only occur during the non-breeding season (September 1 through January 31) ; and
2. During breeding season (February 1 through August 31) occupied burrows shall not be disturbed and shall be provided with a 250-foot protective buffer until and unless the HTAC, with the concurrence of the permitting agencies or unless the designated biologist approved by the permitting agencies verifies through non-invasive means that either:
   A. The birds have not begun egg laying; or
   B. Juveniles from the occupied burrows are foraging independently and are capable of independent survival. Once the fledglings are capable of independent survival, the burrow can be destroyed.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Within 15 days of site or related facilities mobilization the project owner shall submit a report on the results of burrowing owl surveys to the CPM. A discussion of implementation of burrowing owl mitigation and impact avoidance measures shall be submitted to the CPM in the monthly compliance reports as necessary.

Swainson's Hawk Mitigation

BIO-11 The project owner shall survey for nesting Swainson's hawk as part of the Applicant's proposed pre-construction surveys within one mile of construction activities between March 20 and April 20. If active nests are found, mitigation measures consistent with the *Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California* (CDFG 1994) shall be implemented as approved by the SJCOG HTAC. In addition, the project owner shall provide habitat compensation for temporary and permanent impacts at a 1:1 mitigation ratio and a one-time endowment fee of $16,343.28 as required by SJMSCP.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Pre-construction Swainson's hawk survey results shall be provided to the CPM within 15 days of completion of surveys. Within 15 days of site or related facilities mobilization, the project owner shall submit written verification to the CPM and the HTAC that the transaction for habitat compensation has occurred. A discussion of the implementation of Swainson's

hawk mitigation and impact avoidance measures shall be submitted to the CPM in monthly compliance reports as necessary.

Pre-Construction Nest Surveys and Impact Avoidance for Migratory Birds

BIO-12 The project owner shall implement the following measures to avoid or minimize impacts to nesting birds:

1. Pre-construction nest surveys within 500 feet of boundaries of the power plant site and linear facilities if construction activities will occur from February 1 through August 1;
2. At least two pre-construction surveys shall be conducted, separated by a minimum 10-day interval. One of the surveys needs to be conducted within the 14 day period preceding initiation of construction activity. Additional follow-up surveys may be required if periods of construction inactivity exceed three weeks in any given area, an interval during which birds may establish a nesting territory and initiate egg laying and incubation;
3. If active nests are detected during the survey, schedule work outside nesting and fledging periods. If this is not possible, a no-disturbance buffer zone (protected areas surrounding the nest, the size of which is to be determined by the Designated Biologist in consultation with the HTAC and monitoring plan shall be developed. Nest locations shall be mapped using GPS technology and submitted, along with a monthly report stating the survey results to the CPM; and
4. The Designated Biologist shall monitor the nest until he or she determines that nestlings have fledged and dispersed; activities that might, in the opinion of the Designated Biologist, disturbed nesting activities, shall be prohibited within the buffer zone until such a determination is made.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. At least 10 days prior to the start of any project-related ground disturbance activities, the project owner shall provide the CPM a letter-report describing the findings of the pre-construction nest surveys, including the time, date, and duration of the survey; identity and qualifications of the surveyor(s); and a list of species observed. If active nests are detected during the survey, the report shall include a map or aerial photo identifying the location of the nest and shall depict the boundaries of the no-disturbance buffer zone around the nest. A discussion of implementation of migratory bird mitigation and impact avoidance measures shall be submitted to the CPM in monthly compliance reports as necessary.

Northwestern and Western Pond Turtle Mitigation

BIO-13 The project owner shall implement the following measures to avoid or minimize impacts to northwestern and western pond turtles:

1. Concurrent with pre-construction surveys for the giant garter snake, surveys will also be conducted for turtles and potential nest locations;
2. Temporary fencing will be installed along the edge of the irrigation canal and signs shall be posted identifying the area as environmentally sensitive; and
3. In the event a turtle or nest is identified in the work area, the location will be noted and the CDFG will immediately be contacted to determine the appropriate mitigation and impact avoidance measure to be taken prior to the start of any ground disturbance within 300 feet of the nest.

Verification: All mitigation measures and their implementation methods shall be included in the BRMIMP. Within 15 days of site or related facilities mobilization the project owner shall submit a report on the results of pond turtle surveys to the CPM. A discussion of implementation of northwestern and western turtle mitigation and impact avoidance measures shall be submitted to the CPM in monthly compliance reports as necessary.

B. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the Lodi Energy Center (LEC) Project, including the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also considers site contamination and any potential cumulative impacts to water quality in the vicinity of the project. Mitigation measures are included in the Conditions of Certification to ensure that the project will have no significant impacts on the environment and that it will comply with all LORS. The evidence contained in the record is undisputed. (Exs. 1; 9; 10; 15; 28; 29; 32; 33; 34; 35; 40; 41; 43; 49; 300; 302; 01/05/10 RT 28-29.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The LEC is a 296 megawatt (MW) natural gas-fired, combined cycle electric generating facility. The LEC site is located in rural San Joaquin County situated on the eastern edge of the Sacramento-San Joaquin Delta. The project site is located southwest of the intersection of Highway 12 and Interstate 5 on land owned and incorporated by the City of Lodi. The LEC will be constructed on a 4.4-acre parcel adjacent to the City's White Slough Water Pollution Control Facility (WPCF) and the existing NCPA Combustion Turbine Project #2 (STIG). Construction laydown and parking areas will be located on four parcels totaling 9.8-acres within the existing boundaries of the WPCF. Natural gas will be provided by Pacific Gas & Electric Company (PG&E) through a 2.7-mile pipeline that PG&E will construct, own, and operate. LEC will use recycled water from the adjacent WPCF for industrial purposes and groundwater for potable water uses. (Ex. 300, pp. 4.9-3 to 4.9-6.)

1. Soil and Erosion

The topography of the site is generally level with an average elevation of approximately five feet above mean sea level. The plant site and laydown areas will be located on soil identified as Devries sandy loam. This soil type is formed from the mixed rock alluvium that characterizes the basin rim of the San Joaquin Delta. (Ex. 300, pp. 4.9-3 to 4.9-4.)

The 4.4-acre power plant site sits upon silty sands to a depth of approximately 10 feet. The silty sands are underlain by a zone of clayey sand to a depth of approximately 13 feet. Because of the potential for liquefaction and differential settlement of the near surface sandy soil, over excavation to a depth of

approximately five feet is recommended in the geotechnical feasibility study conducted for the LEC site. (Ex. 300, p. 4.9-4.)

The project site will require earthwork to construct the LEC and associated facilities. Soil disturbing activities will consist of grubbing and clearing, rough grading, excavating, filling, compaction, and final grading. For all areas where earthwork activities will occur, NCPA proposes to stockpile materials suitable for compaction in on-site locations. Materials not suitable for compaction will be stockpiled in separate areas for reuse as appropriate. (Ex. 300, p. 4.9-8.)

NCPA will prepare a Drainage, Erosion, and Sediment Control Plan (DESCP) and Storm Water Pollution Prevent Plan (SWPPP). The evidence indicates that the volume of soil that will be over excavated and recompacted as engineered fill will be 19,656 cubic yards (cy) with an additional 8,747 cy required to provide a level pad for the LEC facility. After the final grade and elevation have been established, the major equipment foundations and underground utilities will be excavated and back filled. NCPA proposes to use only licensed commercial fill that will not require a borrow or disposal site. A letter from DTSC (Ex. 9) establishes that the site does not pose a risk to human health and is suitable for future unrestricted use. (Ex. 300, p. 4.9-8.)

Construction activities will increase short-term soil erosion. Within the draft DESCP and preliminary SWPPP, NCPA proposes best management practices (BMPs) for erosion control during the construction phase of the LEC. The construction BMPs include silt fences, straw wattles, stabilized construction entrance, temporary drainage channels, sediment traps and basins at boundary outfalls. Dust suppression will be accomplished by applying water. (Ex. 300, p. 4.9-8.)

Adherence to the procedures in the construction SWPPP and DESCP will limit both erosion and the migration of contaminants (that may be disturbed by construction) from entering adjacent surface water bodies. These plans require the project owner to test and monitor soil and run-off from the LEC site. We find that implementation of BMPs contained in Conditions of Certification **SOIL&WATER-1 and -2** will reduce the impact of water and wind erosion to soil resources to a level that is less than significant. (Ex. 300, p. 4.9-8.)

Condition of Certification **SOIL&WATER-1** requires the project owner to comply with all the requirements of the NPDES General Permit for Storm Water Discharges Associated with Construction Activities, including the development

and implementation of a construction SWPPP. Condition of Certification **SOIL&WATER-2** requires the project owner to obtain the Compliance Project Manager's (CPM) approval for a site-specific DESCP that addresses all project elements and ensures protection of soil and water resources during construction of the LEC. (Ex. 300, p. 4.9-9.)

The operation and maintenance of the LEC will not involve soil-disturbing activities. During plant operation, the LEC site will be covered with impervious material, gravel, or landscaping that will minimize the exposure of on-site soil to wind or water erosion. The water and gas pipelines will be underground and routine vehicle traffic will be limited to existing paved roads. (Ex. 300, p. 4.9-11.)

2. Surface Hydrology, Storm Water Management, and Flooding

The LEC and the adjacent WPCF are located within the legal boundary of the Sacramento-San Joaquin Delta (Delta). The Sacramento and San Joaquin rivers combine to form the Delta. The lands and waterways within the Delta have been highly modified by channelization and water diversions, and its lands and waterways provide essential habitat for fish and wildlife. (Ex. 300, p. 4.9-5.)

Numerous natural and developed surface water bodies occur near the LEC site. To the west, are numerous sloughs, cuts, and canals that deliver surface water to local farmers. The major Delta waterways located near the site are Bishop Cut, White Slough, and Dredger Cut. About 1,500 feet west of the site, several elongated water bodies occur that were formed from the borrow pits that provided construction fill for Interstate 5. The pits were intended to be part of the Peripheral Canal, but are now open water bodies that are not connected to the Delta and are recharged by precipitation. Other local water bodies adjacent to the site are the percolation ponds at the WPCF and a small-unnamed Delta channel that discharges to Dredger Cut. The southern portion of the LEC site is bordered by this unnamed channel, which currently receives storm water runoff from the site. (Ex. 300, p. 4.9-5.)

The existing LEC site is a basin-like area with a natural swale along the southwest corner of the site. The site is undeveloped with a moderate amount of seasonal grass and weeds. The maximum site elevation is approximately 12 feet amsl where an existing dirt road rises to intersect a paved road on the northern boundary of the project. From the northern boundary, the site slopes downward

into a depressed area at an elevation of approximately 5 feet amsl. This depressed area is bisected by the access road to the STIG facility. (Ex. 300, p. 4.9-6.)

A culvert under the access road allows storm water runoff to flow from the northern area of the site into a natural drainage swale along the southern boundary. The low point of the site along the southern boundary is approximately 3.5 feet amsl. A culvert is in place in the southern portion of the site to convey storm water runoff to the natural drainage channel. Through this drainage channel, the LEC site indirectly discharges storm water runoff to Dredger Cut. Dredger Cut drains into White Sough, which ultimately drains to the San Joaquin River. (Ex. 300, p. 4.9-6.)

The LEC site and WPCF are located within the 100-year flood plain (Zone A) as defined by the Federal Emergency Management Agency (FEMA). As determined by FEMA, the site is located within a flood hazard zone with a base flood elevation (BFE) of 8-feet amsl. For the LEC to be licensed by the Energy Commission, all power plant curbs, structures, and foundations must be at least 1-foot above the BFE. (Ex. 300, p. 4.9-9.)

NCPA proposes to elevate the LEC site above the BFE in accordance with the City of Lodi's requirements for construction within a special flood hazard zone. The record establishes that conformance with Lodi's Municipal Codes will comply with FEMA regulations and the Energy Commission requirements that all new structures within a flood hazard zone have a minimum first floor or foundation elevation at least 1-foot above the BFE. (Ex. 300, p. 4.9-10.)

Condition of Certification **SOIL&WATER-4**, requires the project owner to comply with Lodi Municipal Codes, Title 15, Chapter 15.60, and Title 17, Chapter 17.51 and provide a copy of the elevation certification or verification to the CPM that the LEC has been elevated eighteen inches or more above the level of the base flood. We find that designing and elevating the LEC site above the BFE consistent with the Lodi Municipal Code Title 15 and Title 17 will ensure the project will not contribute to upstream and downstream flooding impacts. (Ex. 300, p. 4.9-10.)

During operations, development of the LEC site will increase the impervious surface area, but the record indicates that the storm drain system will provide a post construction discharge rate similar to the pre-construction rate. (Ex. 300, p. 4.9-11.)

The project owner is required to develop an industrial SWPPP that meets performance and monitoring standards established by the Central Valley Regional Water Quality Control Board (CVRWQCB). The industrial SWPPP will require BMPs that will minimize on-site contaminants from coming in contact with storm water runoff. Condition of Certification **SOIL&WATER-5** requires the preparation of an industrial SWPPP which will render the impacts of storm water runoff during LEC operation less than significant. (Ex. 300, p. 4.9-11.)

3. Water Resources and Supply

LEC will use recycled water during construction and operation. The recycled water will come from the WPCF and potable water will come from a new on-site well. Under normal operating conditions, NCPA estimates that the annual average daily consumption of recycled water will be 1.84 million gallons per day (mgd). The maximum daily consumption of recycled water (summer use case) will be 2.61 mgd. The LEC's expected average annual recycled water use, based on a 70-80 percent facility operation capacity factor (approximately 7,000 hours of operation per year), will be 1,651 acre-feet per year, with a maximum consumption of 1,800 acre-feet per year (AFY). During construction, recycled water will be used for dust control, soil compaction, concrete curing, and other miscellaneous non-potable uses. (Ex. 300, p. 4.9-5.)

NCPA expects construction of the LEC to last 24 months and will require approximately 36,000 gallons per day (gpd) of recycled water. Impacts to surface water quality will primarily consist of increased turbidity due to erosion of newly excavated or placed soils. However, water used for dust control and soil compaction during construction is not expected to result in a discharge to surface water due to the minimal amount of water that will be used for this purpose. NCPA proposes to collect equipment wash water for disposal off-site. (Ex. 300, p. 4.9-9.)

Operation activities will have minimal potential to adversely affect surface or groundwater resources in the vicinity of the LEC site. The evidences shows that the post construction storm water runoff rate to be similar to the preconstruction rate; so implementation of an industrial SWPPP will minimize the potential for increased sediment or contaminants to be conveyed offsite. The project will result in 4.4 acres of impervious surfaces, which will not substantially interfere with groundwater recharge. We find that potential impacts to groundwater quality to be less than significant. (Ex. 300, p. 4.9-14.)

NCPA does not propose to use groundwater during construction of the LEC; although, construction activities could potentially affect groundwater quality through inadvertent spills or discharge that could then infiltrate into the groundwater. Groundwater beneath the site fluctuates seasonally and is found at depths between 2 to 14 feet bgs. NCPA will implement a construction SWPPP that includes BMPs for erosion and sediment control, non-visible pollutant monitoring and sampling, and non-storm water management. To prevent surface water degradation due to dewatering activities, Condition of Certification **SOIL&WATER-3** will require the project owner to comply with CVRWQCB Order No. R5-2008-0081 for Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters. Compliance with Conditions of Certification **SOIL&WATER-1, -2 and -3** will reduce construction impacts to water quality to a less-than-significant level. (Ex. 300, p. 4.9-9.)

During operation, LEC will use groundwater from a new on-site well for all potable water uses (eyewash stations, drinking fountains, showers, and toilet flushing). The on-site well will draw from the Eastern San Joaquin Subbasin (basin) which has sufficient capacity to supply 450 gpd of groundwater for potable use. The overall consumption of potable water by the LEC will be less than 0.4-AFY with a maximum pumping rate of less than 1 gpm. Groundwater is available within the basin to supply the LEC, and groundwater recharge and water-use return volume exceed the current and expected future pumping demand in the vicinity of the LEC site. (Ex. 300, p. 4.9-13.)

Because the project will use only a small volume of groundwater, the project is unlikely to affect groundwater quality. The record establishes that there will be no change in the existing physical or chemical conditions of groundwater resources and no impact to groundwater quality. Compliance with Condition of Certification **SOIL&WATER-5**, which requires the project owner to prepare an industrial SWPPP, will minimize impacts to surface and groundwater to a less than significant level. (Ex. 300, p. 4.9-14.)

Given the low production rate and temporary nature of use as a back-up supply relative to groundwater availability in the basin, the effect on local groundwater levels has been shown to be negligible and will not significantly affect adjacent groundwater uses. Condition of Certification **SOIL&WATER-7** requires the project owner to submit a well construction application to the San Joaquin County Environmental Health Department and limits the use of the groundwater from the well. Condition of Certification **SOIL&WATER-8** requires the project owner to install metering devices prior to the use of recycled or potable water for LEC

operation. Data from the metering devices will be used to prepare an annual water use summary that will be submitted to the CPM in the annual compliance report. (Ex. 300, pp. 4.9-13 to 4.9-14.)

4. Wastewater

The evidence indicates that the project will discharge up to 225 gpm of non-hazardous process wastewater to an on-site Class I injection well. Presently, NCPA owns and operates a Class I injection well for wastewater injection at the STIG facility. NCPA has received an Underground Injection Control (UIC) permit from the USEPA Region IX for the combined STIG-LEC facility. (Ex. 15.) The receipt of the permit was based on the application submitted by NCPA (Ex. 43) which contains the initial underground injection well application for the LEC injection well that will support LEC operation, a re-application for the existing STIG injection well, and an application for a third injection well for future use as a backup injection well. (Ex. 300, p. 4.9-6.)

The process wastewater will consist of tertiary treated makeup water and other recovered process wastewater streams. Process wastewater will be collected in the wastewater discharge tank and conveyed via pipeline to the well pad for injection at a maximum rate of 225 gpm. (Ex. 300, pp. 4.9-14 to 4.9-15.)

The groundwater injection zone beneath the site will be within the Domengine Formation that extends from approximately 3,700 to 4,500 feet beneath the site. The upper confining zone is the Nortonville Formation and the lower confining zone is the Capay Formation. These confining zones are laterally extensive ranging in depth from 100 to 200 feet-thick and consist of marine and silty shale. These shale formations act as confining zones to prevent the relatively high saline LEC injection fluids from migrating into higher quality groundwater aquifers.

The region surrounding the well site has a very low level of seismic activity and contains no active faults within 25 miles. The record shows the potential shaking hazard from seismic activity to be relatively low and subsurface faulting of the injection formation and confining zones will not create conduits for the migration of the LEC injection fluids. We find deep well injection, permitted by the USEPA, will not cause an adverse impact to soil or water resources. Condition of Certification **SOIL&WATER-9** requires the project owner to submit to the CPM a copy of the UIC permit issued by USEPA prior to site mobilization. (Ex. 300, p. 4.9-15.)

The primary on-site wastewater collection system will collect drainage from the containment area wash down drains, sample drains, and equipment drains. Wastewater from these areas will be collected in a system of hub drains, sumps, and piping for routing to the oil/water separator and wastewater lift station for testing before discharge to the WPCF. Wash water from the combustion turbine will be collected in holding tanks or sumps for off-site disposal at an approved wastewater disposal facility. (Ex. 300, p. 4.9-15.)

The secondary wastewater collection system will collect sanitary waste from sinks, toilets, showers, and other sanitary facilities for discharge to the WPCF through an existing connection in the utility corridor that serves the STIG facility and the city of Lodi has confirmed that there is sufficient capacity at the WPCF to receive sanitary waste from the LEC. Therefore, we find the potential for adverse impacts from sanitary wastewater discharge to the WPCF to be insignificant. (Ex. 300, p. 4.9-15.)

5. Cumulative Impacts and Mitigation

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. [14 Cal. Code Regs., § 15065(A)(3).]

The LEC project will neither cause nor contribute to cumulative impacts to soil and water resources. The record does not identify any other projects in the vicinity of the Lodi Energy Project. Sound engineering practices and BMPs will be used in both the project's design and operation. Storm water discharge will adhere to state and local agency water quality standards contained in the city of Lodi municipal codes and CVRWQCB NPDES permit requirements. Drainage volume and peak-storm water flow rates will be managed in compliance with state discharge permits, and no significant impacts to either surface water or groundwater quality are expected during construction or operation of the LEC.

6. Compliance with LORS

a. CLEAN WATER ACT

LEC will satisfy the requirements of the NPDES permits and DESCP with the adoption of Conditions of Certification **SOIL&WATER-1, -2 and -4**. These Conditions require the development and implementation of a DESCP (**SOIL&WATER-2**) in conjunction with the construction SWPPP (**SOIL&WATER-1**) and the industrial SWPPP (**SOIL&WATER-4**).

b. SAFE DRINKING WATER ACT

Through compliance with Conditions of Certification **SOIL&WATER-9**, the project owner will obtain final approval of the UIC Class I Permit from the USEPA Region IX.

c. CALIFORNIA WATER CODE, SECTION 13260

Through compliance with Conditions of Certification **SOIL&WATER-3,** the project owner will submit a Notice of Intent for compliance with CVRWQCB Order No. R5-2008-0081 that will establish waste discharge requirements prior to any dewatering activities associated with LEC construction or operation.

d. CALIFORNIA WATER CODE, SECTION 13523

Through compliance with Conditions of Certification **SOIL&WATER-4,** the CVRWQCB, after consulting with and receiving the recommendations from DPH, will prescribe water reclamation requirements for the production and use of recycled water for construction and operation of the LEC.

e. CALIFORNIA WATER CODE, SECTION 13550

Section 13550 et seq. of the California Water Code prohibits the use of potable domestic water for nonpotable uses if recycled water is available. Through the use of recycled water for construction and operation, the LEC will be fully compliant with this section of the water code.

f. TITLE 17 AND 22 OF THE CALIFORNIA CODE OF REGULATIONS

Through compliance with Conditions of Certification **SOIL&WATER-6,** the DPH will review and approve an engineering report for the transmission and use of recycled water.

g. CITY OF LODI MUNICIPAL CODE TITLE 8

Through compliance with Conditions of Certification **SOIL&WATER-7,** the potable water well and underground injection well will be permitted by the San Joaquin County Environmental Health Department.

h. CALIFORNIA ENERGY COMMISSION INTEGRATED ENERGY POLICY REPORT: WATER USE AND WASTEWATER DISCHARGE POLICY

The California Energy Commission, under legislative mandate specified in the *2003 Integrated Energy Policy Report*, (policy), will approve the use of fresh water for cooling purposes by power plants it licenses only where alternative water supply sources and alternative cooling technologies are shown to be environmentally undesirable or economically unsound. Through the use of recycled water the LEC will comply with this policy.

i. CALIFORNIA PUBLIC RESOURCES CODE, SECTION 25300 - 25302

Through compliance with Conditions of Certification **SOIL&WATER-8**, information required by the Energy Commission to conduct assessments and forecasts of potable and industrial water consumption by power plants is achieved.

FINDINGS OF FACT

1. The volume of soil that will be over excavated and recompacted as engineered fill will be 19,656 cubic yards (cy) with an additional 8,747 cy required to provide a level pad for the LEC facility.

2. Adherence to the procedures in the construction SWPPP and DESCP will limit both erosion and the migration of contaminants that may be disturbed by construction from entering adjacent surface water bodies.

3. The implementation of BMPs contained in Conditions of Certification **SOIL&WATER-1 and -2** will reduce the impact of water and wind erosion to soil resources to a level that is less than significant.

4. The operation and maintenance of the LEC will not involve soil-disturbing activities.

5. Designing and elevating the LEC site above the base flood elevation consistent with the Lodi Municipal Code Title 15 and Title 17 will ensure the project will not contribute to upstream and downstream flooding impacts.

6. Condition of Certification **SOIL&WATER-5** requires the preparation of an industrial SWPPP which will render the impacts of storm water runoff during LEC operation less than significant.

7. LEC will use recycled water during construction and operation.

8. Construction of the LEC to last 24 months and will require approximately 36,000 gallons per day of recycled water.

9. LEC's expected average annual recycled water use, based on a 70-80 percent facility operation capacity factor (approximately 7,000 hours of operation per year), will be 1,651 acre-feet per year, with a maximum consumption of 1,800 acre-feet per year (AFY).

10. The project will result in 4.4 acres of impervious surfaces, which will not substantially interfere with groundwater recharge resulting in no potential significant impacts to groundwater quality.

11. LEC will not use groundwater during construction.

12. To prevent surface water degradation due to dewatering activities, Condition of Certification **SOIL&WATER-3** will require the project owner to comply with CVRWQCB Order No. R5-2008-0081 for Waste Discharge Requirements for Dewatering and Other Low Threat Discharges to Surface Waters.

13. Compliance with Conditions of Certification **SOIL&WATER-1, -2 and -3** will reduce construction impacts to water quality to a less-than-significant level.

14. LEC will use groundwater from a new on-site well for all potable water uses (eyewash stations, drinking fountains, showers, and toilet flushing).

15. The overall consumption of potable water by the LEC will be less than 0.4-AFY with a maximum pumping rate of less than 1 gpm.

16. Since the project will use only a small volume of groundwater, the project is unlikely to affect groundwater quality.

17. Compliance with Condition of Certification **SOIL&WATER-5**, which requires the project owner to prepare an industrial SWPPP, will minimize impacts to surface and groundwater to a less than significant level.

18. The low production rate and temporary nature of groundwater use as a back-up supply relative to its availability in the basin will have a negligible impact on local groundwater levels and will not significantly affect adjacent groundwater uses.

19. Condition of Certification **SOIL&WATER-7** limits the use of the groundwater from the well.

20. The project will discharge up to 189 gpm of non-hazardous process wastewater to an on-site Class I injection well.

21. The region surrounding the well site has a very low level of seismic activity and contains no active faults within 25 miles.

22. Deep well injection, permitted by the USEPA, will not cause adverse impacts to soil or water resources.

23. The potential for adverse impacts from sanitary wastewater discharge to the WPCF is insignificant.

24. The LEC project will neither cause nor contribute to cumulative impacts to soil and water resources.

CONCLUSIONS OF LAW

1. The LEC will not result in any unmitigated, significant project-specific or cumulative adverse impacts to Soil or Water Resources.

2. The LEC will comply with all applicable LORS with implementation of the Conditions of Certification set forth herein.

3. The LEC will not use fresh water for cooling and is therefore consistent with the SWRCB Policy 75-58 and the Energy Commission's policy of discouraging the use of fresh water for power plant cooling.

CONDITIONS OF CERTIFICATION

SOIL&WATER-1: The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Construction Activity (WQO 99-08-DWQ). The project owner shall develop and implement a Storm Water Pollution Prevention Plan (construction SWPPP) for the LEC site, laydown areas, and on-site linear facilities.

Verification: Prior to site mobilization, the project owner shall submit to the Compliance Project Manager (CPM) a copy of the construction SWPPP and retain a copy on-site. The project owner shall submit copies to the CPM of all correspondence between the project owner and the Central Valley Regional Water Quality Control Board (CVRWQCB) about the construction SWPPP within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent and Notice of Termination for the LEC.

SOIL&WATER 2: Prior to site mobilization activities, the project owner shall obtain CPM approval for a site-specific Drainage, Erosion, and Sediment Control Plan (DESCP) that ensures protection of water quality and soil resources associated with soil disturbing activities associated with the LEC site, laydown areas, and on-site linears. The DESCP shall address appropriate methods and actions, both temporary and permanent, for the protection of water quality and soil resources, demonstrate no increase in the rate and volume of storm water runoff, and identify all monitoring and maintenance activities. The plan shall be consistent with the grading and drainage plan as required by Condition of Certification **CIVIL-1** and may incorporate by reference any SWPPP developed in conjunction with state or municipal NPDES permits. The DESCP shall be a separate document that contains elements A through I below:

A. Vicinity Map – Map(s) at a minimum scale 1”=100’ shall be provided indicating the location of all project elements (construction site, laydown areas, pipelines, etc.) with depictions of all significant geographic features including swales, storm drains, and sensitive areas.

B. Site Delineation – All areas subject to soil disturbance for the LEC (project site, laydown area, all linear facilities, landscaping areas, and any other project elements) shall be delineated showing boundary lines of all construction areas and the location of all existing and proposed structures, pipelines, roads, and drainage facilities. The Site Delineation shall be at a minimum scale 1”=100’.

C. Watercourses and Critical Areas – On the Site Delineation, the location of all nearby watercourses including swales, storm drains, and drainage ditches shall be shown. Indicate the proximity of those features to the LEC construction, laydown, and landscape areas and all transmission and pipeline construction corridors.

D. **Drainage Map** – The DESCP shall provide a topographic site map(s) at a minimum scale 1”=100’ showing all existing, interim and proposed drainage systems, and drainage area boundaries. On the map, spot elevations are required where relatively flat conditions exist. The spot elevations and contours shall be extended off-site for a minimum distance of 100 feet.

E. **Drainage Narrative** – The DESCP shall include a narrative of the drainage measures to be taken to protect the site, downstream facilities, and watercourses. The narrative shall include the summary pages from the hydrologic and hydraulic analyses prepared by a professional engineer or erosion control specialist. The narrative shall state the watershed size(s) in acres used in the calculation of drainage control measures and text included that justifies their selection. The hydrologic and hydraulic analyses should be used to support the selection of BMPs and structural controls to divert off site and on-site drainage around or through the LEC construction and laydown areas.

F. **Clearing and Grading Plans** – The DESCP shall provide a delineation of all areas to be cleared of vegetation and areas to be preserved. The plan shall provide elevations, slopes, locations, and extent of all proposed grading as shown by contours, cross sections or other means. The on-site locations of any disposal areas, fills, or other special features shall also be shown. Illustrate existing and proposed topography tying in proposed contours with existing topography.

G. **Clearing and Grading Narrative** – The DESCP shall include a table with the quantities of material excavated or filled for the site and all project elements of the LEC (project site, lay down area, transmission corridors, and pipeline corridors) whether such excavations or fill is temporary or permanent, and the amount of such material to be imported or exported.

H. **Best Management Practices** – The DESCP shall identify on a water pollution control drawing (WPCD) the location of the site specific BMPs to be employed during each phase of construction (initial elevation, grading, linear excavation and construction, and final grading/stabilization). Treatment control BMPs used during construction should enable testing of storm water runoff prior to discharge to the storm water system. BMPs shall include measures designed to prevent wind and water erosion in areas with existing soil contamination.

I. **Best Management Practices Narrative** – The DESCP shall show the location (as identified on the WPCD), timing, and maintenance schedule of all erosion and sediment control BMPs to be used prior to initial grading, site elevation, and all project excavation and

construction. Text with supporting calculation shall be included for each project specific BMP proposed for use prior to initial site elevation, grading, and project excavation and construction. Text with supporting calculation shall be included for each project specific BMP. BMP. Separate BMP implementation schedules shall be provided for each project element

Verification: No later than 60 days prior to site mobilization, the project owner shall submit a copy of the DESCP to the CPM for review and approval. The DESCP shall include elements A through I for soil disturbing activities associated with site elevation, grading, foundation excavation, and site stabilization.

SOIL&WATER 3: If groundwater is encountered during construction or operation of the LEC, the project owner shall comply with the requirements of the CVRWQCB Order NO. R5-2008-0081 for Waste Discharge Requirements for Dewatering and Other Low threat Discharges to Surface Waters.

Verification: Prior to any groundwater discharge or dewatering activities, the project owner shall submit a complete Notice of Intent (NOI) to obtain coverage under CVRWQCB Order No. R5-2008-0081. The project owner shall submit copies to the CPM of all correspondence between the project owner and the CVRWQCB regarding Order No. R5-2008-0081 within 10 days of its receipt or submittal. This information shall include a copy of any waste discharge orders or other discharge requirements as determined by the CVRWQCB.

SOIL&WATER 4: The project owner shall comply with the requirements of the General National Pollutant Discharge Elimination System (NPDES) Permit for Discharges of Storm Water Associated with Industrial Activity (WQO 97-03-DWQ). The project owner shall develop and implement a Storm Water Pollution Prevention Plan (industrial SWPPP) for the operation of the LEC.

Verification: Prior to commercial operation, the project owner shall submit to the CPM a copy of the industrial SWPPP. The project owner shall submit copies to the CPM of all correspondence between the project owner and the Central Valley Regional Water Quality Control Board regarding the industrial SWPPP within 10 days of its receipt or submittal. This information shall include a copy of the Notice of Intent for compliance with the General NPDES permit for operation of the LEC.

SOIL&WATER 5: The project owner shall comply with the City of Lodi (COL) Municipal Codes, Title 15, Chapter 15.60, and Title 17, Chapter 17.51 regarding construction in a flood hazard zone.

Verification: Prior to site mobilization, the project owner shall submit to the CPM a letter from the COL that states that the project has complied with the COL's flood plain construction and elevation requirements.

SOIL&WATER 6: The project owner shall provide the CPM two copies of the executed Recycled Water Purchase Agreement (agreement) with the COL for the long-term supply (30 – 35 years) of tertiary treated recycled water to the LEC. The agreement shall specify a maximum daily supply of 2.61mgd with a total annual maximum supply of 1,800 AFY. The agreement shall specify all terms and costs for the delivery and use of recycled water by the LEC. The LEC shall not connect to the COL's recycled water pipeline without the final agreement in place and submitted to the CPM. The project owner shall comply with the requirements of Title 22 and Title 17 of the California Code of Regulations and section 13523 of the California Water Code.

Verification: No later than 60 days prior to the connection to the COL's recycled water pipeline, the project owner shall submit two copies of the executed agreement for the supply and on-site use of recycled water at the LEC. The project owner shall submit to the CPM a copy of the Engineering Report and Cross Connection inspection and approval report from the California Department of Public Health prior to the delivery of recycled water from the COL.

SOIL&WATER 7: Prior to initiation of well construction activities, the project owner shall submit a well construction application to the San Joaquin County Environmental Health Department (SJCEHD) in accordance the COL Municipal Code, Title 8, Chapter 8.08. The application shall contain all documentation, plans, and fees normally required for SJCEHD's well permit. Copies shall also be submitted to the CPM for review and approval. The project shall not construct a supply well or extract and use any groundwater therefrom until the SJCEHD issues its written evaluation as to whether the proposed well construction and operation activities comply with all applicable county well requirements, and the CPM provides approval to construct the well. The project owner shall provide documentation to the CPM that the well has been properly completed. In accordance with California's Water Code section 13754, the driller of the well shall submit to the Department of Water Resources (DWR) a Well Completion Report for each well installed. The project owner shall ensure the Well Completion reports are submitted. The project owner shall ensure compliance with all county water well standards and requirements for the life of the existing pumping well and any new pumping wells and shall provide the CPM with two (2) copies of all monitoring or other reports required for compliance with the SJCEHD's water well standards and operation requirements, as well as any changes made to the operation of the well.

Groundwater shall not be used for any facility operation activity that is suitable for non-potable water use unless the source of recycled water is unavailable in the event of an emergency. For purposes of this Condition, the term emergency shall mean the inability for the LEC to

take or for COL to deliver recycled water to the LEC in a quantity sufficient to meet LEC demand due to natural disaster or other circumstances beyond the control of the project owner and it is necessary for the LEC to continue to operate to serve any regulatory mandated requirements. The project owner shall not use potable water as an emergency backup supply for more than 14 calendar days of plant operation without CPM approval.

Verification: The project owner shall do all of the following:

1. No later than 30 days prior to the construction of the on-site water supply well, the project owner shall submit two (2) copies to the CPM of the water well construction application packet submitted to the SJCEHD.
2. No later than 15 days prior to the construction of an onsite water supply well, the project owner shall submit two (2) copies of the written concurrence document from the SJCEHD indicating that the proposed well construction activities comply with all county well requirements and meet the requirements established by the county's water well permit program .
3. No later than 60 days after installation of any water supply well at the project site, the project owner shall ensure that the well driller submits a Well Completion Report to the DWR with a copy provided to the CPM. The project owner shall submit to the CPM together with the Well Completion Report a copy of well drilling logs, water quality analyses, and any inspection reports that may be completed.

During well construction and for the operational life of the well, the project owner shall:

1. Submit copies to the CPM any proposed well construction or operation changes for the wells.
2. Submit copies of any water well monitoring reports required by the SJCEHD.
3. No later than 15 days after completion of onsite water supply well, the project owner shall submit documentation to the CPM and the RWQCB that well drilling activities were conducted in compliance with Title 23, California Code of Regulations, Chapter 15, Discharges of Hazardous Wastes to Land, (23 CCR, sections 2510 et seq.) requirements and that any onsite drilling sumps used for project drilling activities were removed in compliance with 23 CCR section 2511(c).

SOIL&WATER 8: Prior to the use of potable or recycled water for operation of the LEC, the project owner shall install and maintain metering devices as part of the water supply and distribution system to monitor and record in gallons per day the volume of potable and recycled water supplied to the LEC. The metering devices shall be operational for the life of the project. An annual summary of daily water use by the LEC,

differentiating between potable and recycled water, shall be submitted to the CPM in the annual compliance report.

Verification: At least 60 days prior to use of any water source for LEC operation, the project owner shall submit to the CPM evidence that metering devices have been installed and are operational on the potable and recycled pipelines serving the project. The project owner shall provide a report on the servicing, testing, and calibration of the metering devices 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. The report shall include calculated monthly range, monthly average, and annual use by the project in both gallons per minute and acre-feet. After the first year and for subsequent years, this information shall also include the yearly range and yearly average recycled and potable water used by the project.

SOIL & WATER 9: The project owner shall provide the CPM with evidence of a Class I Nonhazardous UIC Permit for the LEC injection well issued by the United States Environmental Protection Agency (USEPA). The project owner must comply with the specific Conditions regarding the construction and operation of the injection well including the water quality requirements for wastewater, sampling, analysis, and monitoring for the deep injection wells.

Verification: Prior to site mobilization, the project owner will obtain and submit to the CPM the final approval of the UIC Class I Permit issued by USEPA Region IX for the construction and operation of the LEC deep injection well. Changes to the design, construction or operation of the injection well permitted by the UIC Class I Permit will be noticed in writing to the CPM and USEPA Region IX.

During the life of the project, the project owner shall provide the CPM with the annual monitoring report summary required by the UIC Class I Permit and shall fully explain violations, exceedance, enforcement actions, or corrective actions related to permit compliance. The project owner will notify the CPM in writing of changes to the UIC Class I Permit that are instituted by either the project owner or USEPA Region IX including permit renewals.

C. CULTURAL RESOURCES

The potential for impacts to cultural resources depends upon whether such resources are present and whether they would actually be encountered during project development and construction activities. Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. Analysis in this topic area pertains to the structural and cultural evidence of human development in the project vicinity, as well as appropriate mitigation measures should cultural resources be disturbed by project excavation and construction.

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Res. Code, § 5024.1; Cal. Code 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 California Environmental Quality (CEQA) (*see* Pub. Res. 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. The Office of Historic Preservation's Instructions for Recording Historical Resources (1995) endorses recording and evaluating resources over 45 years of age to accommodate a five-year lag in the planning process.

The CEQA Guidelines provide a definition of a historical resource as a "resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the CRHR," or "a resource listed in a local register of historical resources or identified as significant in a historical resource survey meeting the requirements of Section 5024.1(g) of the Public Resources Code," or "any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the agency's determination is supported by substantial evidence in light of the whole record." [Cal. Code Regs., tit. 14, § 15064.5(a).] Historical resources that are automatically listed in the CRHR include California historical resources listed in or formally determined eligible for the National Register of Historic Places (NRHP) and California Registered Historical Landmarks from No. 770 onward. [Pub. Res. Code, § 5024.1(d).]

Under the CEQA Guidelines, a resource is generally considered to be historically significant if it meets the criteria for listing in the CRHR. These criteria are essentially the same as the eligibility criteria for the NRHP. In addition to being at least 50 years old, a resource must meet at least one of the following four criteria: it is associated with events that have made a significant contribution to the broad patterns of our history (Criterion 1); or, it is associated with the lives of persons significant in our past (Criterion 2); or, that the resource embodies the distinctive characteristics of a type, period, or method of construction, or that it represents the work of a master, or possesses high artistic values (Criterion 3); or, that it has yielded, or may be likely to yield, information important to history or prehistory (Criterion 4). (Pub. Res. Code § 5024.1.) In addition, historical resources must also possess integrity of location, design, setting, materials, workmanship, feeling, and association (Cal. Code Regs., tit. 14, § 4852(c); Pub. Res. Code § 5020.1 (j) or 5024.1). Even if a resource is not listed or determined to be eligible for listing in the CRHR, CEQA allows the lead agency to make a determination as to whether the resource is a historical resource.

The evidence contained in the record is undisputed (Exs. 10; 21; 26; 32; 35; 41; 49; 52; 300; 302; 303; 01/05/10 RT 26-27.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Setting

The LEC Project site is located at the northern end of the San Joaquin Valley in the Delta Basins subsection of the Great Valley. This region includes basins and floodplains on late Quaternary alluvium derived predominantly from granitic rock sources associated with the Mokelumne, Calaveras, and Cosumnes rivers. Topography throughout the region is nearly level with elevations ranging from 0 to 50 feet above mean sea level. (Ex. 300, p. 4.3-5.)

Historically, the Delta was a large tidally influenced marshland intermixed with riparian habitats along natural levees. Long-term reclamation efforts have resulted in the conversion of the majority of Delta land to agriculture. Today, the predominant land use throughout this area is agricultural with urban areas concentrated around the communities of Lodi and Stockton. (Ex. 300, p. 4.3-5.)

The 4.4-acre LEC site is located on land owned and incorporated by the City of Lodi, six miles west of the Lodi City Center in San Joaquin County. It is situated on the west side of Interstate 5 (I-5) approximately 1.7 miles south of State Route

12 (SR12). The existing NCPA 49-megawatt (MW) combustion Turbine Project #2 (STIG power plant) is adjacent to the west side of the LEC Project, with a 230-kV Pacific Gas and Electric Company (PG&E) overhead electrical transmission line running further to the west. The ponds of the San Joaquin County Mosquito and Vector Control District facility are located south of the LEC plant site. Lodi's White Slough Water Pollution Control Facility (WPCF) lies on the east side of the proposed site, with its holding ponds occupying the north side. The LEC will require construction of a new, approximately 14,122-foot-long, 12-inch-diameter natural gas pipeline, which will connect to the PG&E high-pressure line (#108) in a utility easement approximately 2.5 miles east of the project site at the northwest corner of the intersection of West Armstrong Road and the Union Pacific Railroad. Construction laydown and parking areas will be within the WPCF's parcel, on four undeveloped areas totaling 9.8 acres, adjacent to the project site to the east and northeast. The power plant site is currently used for equipment storage for the WPCF. (Ex. 300, pp. 4.3-5 to 4.3-6.)

The earliest generally accepted evidence for the human occupation of the North American continent, dating from about 10,000 years BC, is known archaeologically as the Big Game Hunting Tradition. Archaeologists believe that the Big Game Hunting Tradition did not occur in California. California archaeologists assumed that people were living in the valley before 2000 BC, but have found very little evidence of it. The earliest part of the period between 5550 and 550 BC is poorly represented archaeologically, but numbers of sites are known for the post-2550 BC period, and their excavation has produced extensive evidence on subsistence and technology. Between 550 BC and 1100 AD, evidence indicates concurrent diverging human patterns based upon dietary, technological and mortuary practices. The period from 1100 AD to the historic period is characterized by settlements indicative of large, dense populations with elaborate trade networks and an intensive hunting, fishing, and gathering subsistence strategy with a continued focus on acorns. Technologically, the pattern of this period is distinguished by the bow and arrow, serrated arrow points, bone tools, shaped mortars and pestles, beads, incised bone tubes, abalone ornaments, and emergent pottery. (Ex. 300, pp. 4.3-8 to 4.3-11.)

The project area is located within the vast traditional territory claimed by the California Native American group known as Yokuts. The LEC Project is located in the traditional territory claimed by the Northern Valley Yokuts. The Northern Valley Yokuts relied heavily on their riverine environment as a source for settlement and subsistence. Groups were organized in territorial tribelets of up to 300 people living in permanent villages on mounds along the river, although

gathering parties left the villages seasonally to collect food and materials. Secondary settlements consisted of small camps or villages of several households. A Northern Valley Yokuts settlement was characterized by domed-shaped houses and shelters made of brush and tules. (Ex. 300, pp. 4.3-11 to 4.3-12.)

The Spanish settlement of Alta California began in 1769, but it was not until March of 1772, Pedro Fages and his company became the first Europeans to enter the northern San Joaquin Valley by reaching the mouth of the San Joaquin River and tracing the river upstream. No permanent Spanish settlements, however, were ever established in the vicinity of the LEC Project. (Ex. 300, p. 4.3-13.)

In 1821, Mexico gained its independence from Spain, and Alta California became one of the provinces of the Republic of Mexico. After the government secularized the missions in 1833, the Mexican governors of Alta California began making large cattle-ranching grants to soldiers and members of prominent families. The closest rancho to the LEC Project area is the Rancho de los Franceses, on part of which Stockton is now located. The 48,747.03 acre Rancho de los Franceses was granted to William Gulnac, a native of New York, on June 13, 1844. (Ex. 300, p. 4.3-13.)

Following the conclusion of the Mexican War in 1848, the LEC Project vicinity came under the control of the United States. The Gold Rush of 1849 triggered a consequent population explosion and statehood followed in 1850. These events inaugurated an era of widespread settlement in California and the beginning of commerce in the LEC area, as Stockton became the main supply City for miners headed to the southern Sierra mines, which stretched from the Mokelumne River to the Kern River. (Ex. 300, p. 4.3-13.)

By 1870, most California Delta land was transferred into private hands. For agriculture to become established and profitable, levee construction was necessary to prevent annual flooding of fields, and the first Delta levee was built in 1853. Most early reclamation efforts were applied to islands and consisted of levees, which often failed. The obvious need for cooperation among landowners spurred the creation of local water reclamation districts by county boards of supervisors in the 1870s. The mechanization of dredging by steam power, introduced in 1879, greatly decreased the cost of moving levee fill and encouraged new reclamation efforts. By 1900, reclaimed acreage had more than doubled from what it had been in 1870, and by 1920, it had nearly doubled again.

After a major flood in 1907, better levee systems were developed, with subsequent elaboration, including rip-rap, dredging, channel cuts, canals, drainage ditches, and pumping stations. In the twentieth century, levee repair and improvement has been a continuous process. (Ex. 300, pp. 4.3-13 to 4.3-14.)

The first American settlement of the Lodi area was the establishment of a school in 1859 on a site near Cherokee Lane and Turner Road, in what would become the City of Lodi. By 1869, the 160-acre town-site had been platted, and four settlers offered the Central Pacific Railroad 12 acres there for a railroad station. Once the railroad accepted, surveyors laid out the streets. Wheat was the first major crop of the area, which the railroad transported to market, processed by the Lodi Flouring Mill, set up in 1876. Grape-growing and wine-making soon came to dominate local agriculture. By 1899, over 2.3 million grapevines were growing in the area. (Ex. 300, p. 4.3-14.)

In 1906, Lodi was incorporated, with a population of nearly 2,000 persons. In 2000, Lodi's population reached 56,999. The City of Lodi now claims approximately 70,000 individuals and is considered a part of metropolitan Stockton. (Ex. 300, p. 4.3-14.)

Beside the sailing schooners and steamboats that provided transportation in the Delta itself, the Central Pacific Railroad was the most important land mode of transportation in the nineteenth century for the region in which the LEC is located. In 1909, the Western Pacific Railroad (WPRR) ran east through the Livermore Valley and over Altamont Pass to Tracy, then north to Stockton, Sacramento, and on to Salt Lake City. In the 1920s, the company's further acquisitions allowed it to expand into the growing interurban electric railway network in the valley. WPRR sold the railroad to the Union Pacific Railroad (UPRR) in 1980. UPRR immediately embarked on an improvement program for the WPRR, including improving the roadbed to accommodate heavier traffic, new ties and heavier rails. (Ex. 300, pp. 4.3-14 to 4.3-15.)

2. Cultural Resources

Applicant's records search included all known cultural resources within a one-half-mile radius of the plant site, laydown area, and appurtenant linear facilities. Sources checked included:

- The California Historical Resources Information System (CHRIS);

- Previously documented cultural resources or archaeological studies in the project area;
- National Register of Historic Places (NHRP);
- California Register of Historical Resources (CRHR);
- California Historical Landmarks;
- California Points of Historical Interest;
- Lodi Historical Society; and
- San Joaquin Historical Society and Museum

The record revealed that the existing structures at or within a radius of 0.5 mile of the LEC site were constructed less than 45 years ago, so no further survey or evaluation of the historical significance of these structures was required. (Ex. 300, pp. 4.3-17 to 4.3-20.)

On June 30, 2008, consultants for LEC requested the Native American Heritage Commission (NAHC) to search its Sacred Lands File for any Native American traditional cultural properties. The "Sacred Lands" database did not indicate the presence of Native American cultural resources in the immediate LEC vicinity. The NAHC also provided a list of Native Americans interested in being informed about development in San Joaquin County. Applicant's consultants sent a letter to each of these individuals/groups on July 11, 2008. The record discloses that no responses were received. (Ex. 300, pp. 4.3-20 to 4.3-21.)

The record indicates that background research and archaeological field surveys showed an absence of prehistoric and historic-period archaeological sites in the LEC Project area of analysis. To date, Native Americans have identified no ethnographic resources on or near the LEC Project areas. The record identified only one cultural resource in or near the LEC Project area: a built-environment resource, the WPRR, originally constructed between 1905 and 1909. (Ex. 300, pp. 4.3-21 to 4.3-22.)

Archaeological surveyors recorded a 100-foot-long segment of the WPRR rail line, limited to the 50 feet north and 50 feet south of the West Armstrong Road crossing. The evidence establishes that this segment of the WPRR is not likely to be eligible for the CRHR under any of the CRHR criteria because the segment lacks integrity due to modern improvements made by UPRR. Thus, the evidence establishes no known CRHR-eligible archaeological resources, ethnographic

resources, built-environment resources, historic districts, or cultural landscapes in or near the LEC Project areas. (Ex. 300, pp. 4.3-22 to 4.3-25.)

3. Potential Impacts

Direct impacts to cultural resources are those associated with project development, construction, and co-existence. Construction usually entails surface and subsurface disturbance of the ground, and direct impacts to archaeological resources may result from the immediate disturbance of the deposits, whether from vegetation removal, vehicle travel over the surface, earth-moving activities, excavation, or demolition of overlying structures. Construction can have direct impacts on historic resources when those structures must be removed to make way for new structures or when the vibrations of construction impair the stability of historic structures nearby. New structures can have direct impacts on historic structures when the new structures are stylistically incompatible with their neighbors and the setting, and when the new structures produce something harmful to the materials or structural integrity of the historic structures, such as emissions or vibrations. (Ex. 300, p. 4.3-25.)

Generally speaking, indirect impacts to archaeological resources are those which may result from increased erosion due to site clearance and preparation, or from inadvertent damage or outright vandalism to exposed resource components due to improved accessibility. Similarly, historic structures can suffer indirect impacts when project construction creates improved accessibility and vandalism or greater weather exposure becomes possible. (Ex. 300, p. 4.3-26.)

The undisputed evidence indicates that no significant known archaeological resources have been identified in any of the areas affected by project construction. According to the Geochronological Investigation of the LEC (Ex. 52), there is no immediate evidence available from the vicinity of the project site or the natural gas pipeline right-of-way to suggest substantive subsurface archaeological potential. Subsurface disturbance, during construction, however, has the potential to disturb as yet unknown archaeological resources. We include Conditions of Certification **CUL-1** through **CUL-7** to ensure that all impacts to cultural resources discovered during construction are mitigated below the level of significance. Mitigation measures for identifying, evaluating, and possibly mitigating impacts to previously unknown archaeological resources discovered during construction include having an archaeologist monitor all excavation activities on the project site, at the laydown areas, and along the pipeline and transmission line routes where cultural resources are uncovered;

and having a Native American monitor construction activities if prehistoric cultural resources are found. (Ex. 300, p. 4.3-28; Ex. 303, pp. 1 to 12.)

Condition of Certification **CUL-1** requires the project owner to obtain the services of a CRS and Condition **CUL-2** requires the project owner to provide the CRS with all relevant cultural resources information and maps. Condition **CUL-3** requires that the CRS write and submit for CPM approval, a Cultural Resources Monitoring and Mitigation Plan (CRMMP), including the results of the geoarchaeological study, the evaluations of any buried archaeological deposits encountered during the geoarchaeological field work, and data recovery plans for any evaluated archaeological deposits determined to be CRHR-eligible by the CPM. Condition **CUL-4** requires the CRS to write and submit to the CPM a final report on all LEC cultural resources monitoring and mitigation activities. Condition **CUL-5** requires the project owner to train workers to recognize cultural resources. Condition **CUL-6** requires archaeological monitoring if cultural resources are identified during excavations. Condition **CUL-7** requires the project owner to grant the CRS the authority to halt ground-disturbing activities in the area of an archaeological discovery, to evaluate any discovered buried resources and, if necessary, to conduct data recovery as mitigation for the project's unavoidable impacts on them. (Ex. 303, pp. 1 to 12.)

4. Cumulative Impacts

A cumulative impact refers to a project's incremental effects considered over time and together with those of other nearby, past, present, and reasonably foreseeable future projects whose impacts may compound or increase the incremental effect of the project. (Pub. Res. Code § 21083; Cal. Code Regs., tit. 14, § 15064(h), 15065(a)(3), 15130, and 15355.) The construction of other projects in the same area as the project could affect unknown subsurface archaeological deposits, both prehistoric and historic. (Ex. 300, p. 4.3-30.)

The record identified 21 projects in various stages of progress under permitting by the City of Lodi and 72 projects under consideration by San Joaquin County. Most of the projects in Lodi are zoned residential, with some mixed uses, institutional, commercial, and industrial projects also proposed. All identified projects will be located more than four miles from the LEC, except for the improvements at the White Slough WPCF, which is adjacent to the project site. The record indicates LEC, along with the other identified projects in the vicinity, is unlikely to result in significant cumulative impacts to cultural resources with the implementation of mitigation measures. Impacts to human remains can be

mitigated by following the protocols established by state law in Public Resources Code, Section 5097.98. (Ex. 52, Ex. 300, p. 4.3-31.)

Since the impacts from the LEC Project will be mitigated to a less-than-significant level by the project's compliance with Conditions of Certification **CUL-1** through **CUL-7**, and since similar protocols can be applied to other projects in the area, the record establishes that the incremental effects on cultural resources of the LEC Project will not be cumulatively considerable when viewed in conjunction with other projects.

FINDINGS OF FACT

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

1. Existing structures within a radius of 0.5 mile of the LEC site were constructed less than 45 years ago, so no further survey or evaluation of the historical significance of these structures is required.
2. The "Sacred Lands" database did not indicate the presence of Native American cultural resources in the immediate LEC vicinity.
3. Background research and archaeological field surveys showed an absence of prehistoric and historic-period archaeological sites in the LEC Project area of analysis.
4. No ethnographic resources have been identified on or near the LEC Project areas.
5. A 100-foot-long segment of the WPRR rail line was the only identified potential cultural resource in or near the LEC Project area.
6. The 100-foot-long segment of the WPRR rail line is not likely to be eligible for the CRHR under any of the CRHR criteria because the segment lacks integrity due to modern improvements made by UPRR.
7. There are no known CRHR-eligible archaeological resources, ethnographic resources, built-environment resources, historic districts, or cultural landscapes in or near the LEC Project areas.
8. Conditions of Certification **CUL-1** through **CUL-7** ensure that all impacts to cultural resources discovered during construction and operation are mitigated below the level of significance.
9. The incremental effects on cultural resources of the LEC Project will not be cumulatively considerable when viewed in conjunction with other projects.

CONCLUSIONS OF LAW

1. With implementation of the Conditions of Certification below, the LEC Project will conform to all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portion of **Appendix A** of this Decision.

2. Through implementation of the Conditions of Certification below, the project will have no significant environmental impacts.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance, the project owner shall obtain the services of a Cultural Resources Specialist (CRS), and one or more alternate CRSs, if alternates are needed. The CRS shall manage all monitoring, mitigation, curation, and reporting activities required in accordance with the Conditions of Certification (Conditions). The CRS may elect to obtain the services of Cultural Resources Monitors (CRMs) and other technical specialists, if needed, to assist in monitoring, mitigation, and curation activities. The project owner shall ensure that the CRS makes recommendations regarding the eligibility for listing in the California Register of Historical Resources (CRHR) of any cultural resources that are newly discovered or that may be affected in an unanticipated manner. No ground disturbance shall occur prior to CPM approval of the CRS and alternates, unless such activities are specifically approved by the CPM. Approval of a CRS may be denied or revoked for reasons including but not limited to non-compliance on this or other Energy Commission projects.

CULTURAL RESOURCES SPECIALIST

The resumes for the CRS and alternate(s) shall include information demonstrating to the satisfaction of the CPM that their training and backgrounds conform to the U.S. Secretary of Interior's Professional Qualifications Standards, as published in Title 36, Code of Federal Regulations, part 61. In addition, the CRS shall have the following qualifications:

1. The CRS's qualifications shall be appropriate to the needs of the project and shall include a background in anthropology, archaeology, history, architectural history, or a related field;
2. At least three years of archaeological or historical, as appropriate (per nature of predominant cultural resources on the project site), resource mitigation and field experience in California; and

3. At least one year of experience in a decision-making capacity on cultural resources projects in California and the appropriate training and experience to knowledgably make recommendations regarding the significance of cultural resources.

The resumes of the CRS and alternate CRS shall include the names and telephone numbers of contacts familiar with the work of the CRS/alternate CRS on referenced projects and demonstrate to the satisfaction of the CPM that the CRS/alternate CRS has the appropriate training and experience to implement effectively the Conditions.

CULTURAL RESOURCES MONITORS

CRMs shall have the following qualifications:

1. a B.S. or B.A. degree in anthropology, archaeology, historical archaeology or a related field and one year experience monitoring in California; or
2. an A.S. or A.A. degree in anthropology, archaeology, historical archaeology or a related field, and four years experience monitoring in California; or
3. enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historical archaeology or a related field, and two years of monitoring experience in California.

CULTURAL RESOURCES TECHNICAL SPECIALISTS

The resume(s) of any additional technical specialist(s), e.g., historical archaeologist, historian, architectural historian, and/or physical anthropologist, shall be submitted to the CPM for approval.

Verification: At least 45 days prior to the start of ground disturbance, the project owner shall submit the resume for the CRS, and alternate(s) if desired, to the CPM for review and approval.

At least 10 days prior to a termination or release of the CRS, or within 10 days after the resignation of a CRS, the project owner shall submit the resume of the proposed new CRS to the CPM for review and approval. At the same time, the project owner shall also provide to the proposed new CRS the AFC and all cultural resources documents, field notes, photographs, and other cultural resources materials generated by the project. If there is no alternate CRS in place to conduct the duties of the CRS, a previously approved monitor may serve in place of a CRS so that project-related ground disturbance may continue up to a maximum of three days without a CRS. If cultural resources are discovered then ground disturbance will remain halted until there is a CRS or alternate CRS to make a recommendation regarding significance.

At least 20 days prior to ground disturbance, the CRS shall provide a letter naming anticipated CRMs for the project and stating that the identified CRMs meet the minimum qualifications for cultural resources monitoring required by this Condition. If additional CRMs are obtained during the project, the CRS shall provide additional letters to the CPM identifying the CRMs and attesting to the qualifications of the CRMs, at least five days prior to the CRMs beginning on-site duties.

At least 10 days prior to any technical specialists beginning tasks, the resume(s) of the specialists shall be provided to the CPM for review and approval.

At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement cultural resources Conditions.

CUL-2 Prior to the start of ground disturbance, the project owner shall provide to the CRS, if the CRS has not previously worked on the project, copies of the AFC, data responses, confidential cultural resources reports, all supplements, and the Energy Commission's Staff Assessment (SA) for the project. The project owner shall also provide the CRS and the CPM with maps and drawings showing the footprints of the power plant, all linear facility routes, all access roads, and all laydown areas. Maps shall include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1" = 200') for plotting cultural features or materials. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM. The CPM shall review map submittals and, in consultation with the CRS, approve those that are appropriate for use in cultural resources planning activities. No ground disturbance shall occur prior to CPM approval of maps and drawings, unless such activities are specifically approved by the CPM.

If construction of the project would proceed in phases, maps and drawings not previously provided shall be provided to the CRS and CPM prior to the start of each phase. Written notice identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

Weekly, until ground disturbance is completed, the project construction manager shall provide to the CRS and CPM a schedule of project activities for the following week, including the identification of area(s) where ground disturbance will occur during that week.

The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: At least 40 days prior to the start of ground disturbance, the project owner shall provide copies of the AFC, data responses, confidential cultural resources documents, all supplements, and the Energy Commission FSA to the CRS (if needed) and copies of the subject maps and drawings to the CRS and CPM. The CPM will review submittals in consultation with the CRS and approve maps and drawings suitable for cultural resources planning activities.

At least 15 days prior to the start of ground disturbance, if there are changes to any project-related footprint, the project owner shall provide revised maps and drawings for the changes to the CRS and CPM.

At least 15 days prior to the start of each phase of a phased project, the project owner shall submit the appropriate maps and drawings, if not previously provided, to the CRS and CPM.

Weekly, during ground disturbance, a current schedule of anticipated project activity shall be provided to the CRS and CPM by letter, e-mail, or fax.

Within five days of changing the scheduling of phases of a phased project, the project owner shall provide written notice of the changes to the CRS and CPM.

CUL-3 Prior to the start of ground disturbance, the project owner shall submit the Cultural Resources Monitoring and Mitigation Plan (CRMMP), as prepared by or under the direction of the CRS, to the CPM for review and approval. The CRMMP shall follow the content and organization of the draft model CRMMP, provided by the CPM, and the author's name shall appear on the title page of the CRMMP. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources and shall incorporate the results of the geoarchaeological field study as reported to the CRS in the draft technical report for that study. Implementation of the CRMMP shall be the responsibility of the CRS and the project owner. Copies of the CRMMP shall reside with the CRS, alternate CRS, each CRM, and the project owner's on-site construction manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless such activities are specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures:

1. The following statement included in the Introduction: "Any discussion, summary, or paraphrasing of the Conditions of Certification in this CRMMP is intended as general guidance and as an aid to the user in understanding the Conditions and their implementation. The Conditions, as written in the Commission Decision, shall supersede any summarization, description, or interpretation of the conditions in the CRMMP. The Cultural Resources Conditions of Certification from the Commission Decision are contained in **Appendix A**."

2. An archaeological research design, scoped, to the extent feasible, to the time periods and the archaeological resource types, if any, established by the geoarchaeological field study, that includes a discussion of research questions and testable hypotheses applicable to the project's construction areas;
3. A discussion of artifact collection, retention/disposal, and curation policies as related to the research questions formulated in the research design. A prescriptive treatment plan may be included in the CRMMP for limited data types;
4. A description of the manner in which Native American observers or monitors will be included, the procedures to be used to select them, and their role and responsibilities;
5. A statement that all cultural resources encountered shall be recorded on Department of Parks and Recreation (DPR) 523 forms and mapped and photographed. In addition, all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with the California State Historical Resources Commission's *Guidelines for the Curation of Archaeological Collections*, into a retrievable storage collection in a public repository or museum;
6. A statement that the project owner will pay all curation fees for artifacts recovered, if any, and for related documentation produced during cultural resources investigations conducted for the project. The project owner shall identify three possible curation facilities that could accept cultural resources materials resulting from project activities;
7. A statement that the CRS has access to equipment and supplies necessary for site mapping, photography, and recovery of any cultural resource materials that are encountered during ground disturbance and cannot be treated prescriptively; and
8. A description of the contents and format of the final Cultural Resource Report (CRR), if any which shall be prepared according to Archaeological Resource Management Report (ARMR) guidelines.

Verification: Upon approval of the CRS proposed by the project owner, the CPM will provide to the CRS an electronic copy of the draft model CRMMP.

At least 30 days prior to the start of ground disturbance, the project owner shall submit the subject CRMMP to the CPM for review and approval of the entire CRMMP.

At least 30 days prior to the start of ground disturbance, in a letter to the CPM, the project owner shall agree to pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, and data recovery).

CUL-4 If any archaeological monitoring or data recovery activities are conducted during project construction, the project owner shall submit the final Cultural Resources Report (CRR) to the CPM for approval. The final CRR shall be written by or under the direction of the CRS and shall be provided in the ARMR format. The final CRR shall report on all field activities including dates, times and locations, evaluations, data recovery, samplings, analyses, and results. All survey reports, DPR 523 forms, data recovery reports, and any additional research reports not previously submitted to the California Historical Resource Information System (CHRIS) and the State Historic Preservation Officer (SHPO) shall be included as appendices to the final CRR.

If the project owner requests a suspension of ground disturbance and/or construction activities, then a draft CRR that covers all cultural resources activities associated with the project shall be prepared by the CRS and submitted to the CPM for review and approval on the same day as the suspension/extension request. The draft CRR shall be retained at the project site in a secure facility until ground disturbance and/or construction resumes or the project is withdrawn. If the project is withdrawn, then a final CRR shall be submitted to the CPM for review and approval at the same time as the withdrawal request.

Verification: Within 90 days after completion of ground disturbance (including landscaping), the project owner shall submit the final CRR to the CPM for review and approval. If any reports have previously been sent to the CHRIS, then receipt letters from the CHRIS or other verification of receipt shall be included in an appendix.

Within 90 days after completion of ground disturbance (including landscaping), if cultural materials requiring curation were collected, the project owner shall provide to the CPM a copy of an agreement with, or other written commitment from, a curation facility that meets the standards stated in the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections, to accept cultural materials, if any, from this project. Any agreements concerning curation will be retained and available for audit for the life of the project.

Within 10 days after CPM approval of the CRR, the project owner shall provide documentation to the CPM confirming that copies of the final CRR have been provided to the SHPO, the CHRIS, the curating institution, if archaeological materials were collected, and to the Tribal Chairpersons of any Native American groups requesting copies of project-related reports.

Within 30 days after requesting a suspension of construction activities, the project owner shall submit a draft CRR to the CPM for review and approval.

CUL-5 Prior to and for the duration of ground disturbance, the project owner shall provide Worker Environmental Awareness Program (WEAP) training to all new workers within their first week of employment at the project site, laydown area, and along the linear facilities routes. The training shall be prepared by the CRS, may be conducted by any member of the archaeological team, and may be presented in the form of a video. The CRS shall be available (by telephone or in person) to answer questions posed by employees. The training may be discontinued when ground disturbance is completed or suspended, but must be resumed when ground disturbance, such as landscaping, resumes. The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Samples or visuals of artifacts that might be found in the project vicinity;
3. A discussion of what such artifacts may look like when partially buried, or wholly buried and then freshly exposed;
4. A discussion of what prehistoric and historical archaeological deposits look like at the surface and when exposed during construction, and the range of variation in the appearance of such deposits;
5. Instruction that the CRS, alternate CRS, and CRMs have the authority to halt project-related ground disturbance in the area of a discovery to an extent sufficient to ensure that the resource is protected from further impacts, as determined by the CRS;
6. Instruction that employees are to halt work on their own in the vicinity of a potential cultural resources discovery and shall contact their supervisor and the CRS or CRM, and that redirection of work would be determined by the construction supervisor and the CRS;
7. An informational brochure that identifies reporting procedures in the event of a discovery;
8. An acknowledgement form signed by each worker indicating that they have received the training; and
9. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

No ground disturbance shall occur prior to implementation of the WEAP program, unless such activities are specifically approved by the CPM.

Verification: At least 30 days prior to the beginning of ground disturbance, the CRS shall provide the training program draft text and graphics and the informational brochure to the CPM for review and approval.

At least 15 days prior to the beginning of ground disturbance, the CPM will provide to the project owner a WEAP Training Acknowledgement form for each WEAP-trained worker to sign.

On a monthly basis, until ground disturbance is completed, the project owner shall provide in the Monthly Compliance Report (MCR) the WEAP Training Acknowledgement forms of workers who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 Based on the findings of the geoarchaeological study, no archaeological monitoring is required unless WEAP-trained construction workers identify cultural resources materials during excavations. In that event, construction shall cease in the vicinity of the discovery, the CRS shall be notified, and **CUL-7** shall apply. When construction is resumed in the vicinity of a discovery, the project owner shall ensure that the CRS, alternate CRS, or CRMs monitor ground disturbance in the vicinity of the discovery until the CRS requests approval from the CRS to change the level of monitoring. The provisions of this Condition shall apply to any monitoring necessitated by cultural resources discoveries.

The research design in the CRMMP shall govern the collection, treatment, retention/disposal, and curation of any archaeological materials encountered.

A Native American monitor shall be obtained to monitor ground disturbance if Native American artifacts are encountered during ground disturbance. Contact lists of interested Native Americans and guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM. The CPM will either identify potential monitors or will allow ground disturbance to proceed without a Native American monitor.

Full-time archaeological monitoring for this project shall be the archaeological monitoring of the earth-removing activities in the areas specified in the previous two paragraphs, for as long as the activities are ongoing. Full-time archaeological monitoring shall require at least two monitors per excavation area, where excavation equipment is actively removing dirt and hauling the excavated material further than fifty feet from the location of active excavation. In such a scenario, one monitor shall observe the location of active excavation and a second monitor shall inspect the dumped material. For excavation areas where the excavated dirt is dumped no further than 50 feet from the

location of active excavation, one monitor shall both observe the location of active excavation and inspect the dumped material.

On forms provided by the CPM, CRMs shall keep a daily log of any monitoring and other cultural resources activities and any instances of non-compliance with the Conditions and/or applicable LORS. Copies of the daily monitoring logs shall be provided by the CRS to the CPM, if requested by the CPM. From these logs, the CRS shall compile a monthly monitoring summary report to be included in the MCR. If there are no monitoring activities, the summary report shall specify why monitoring has been suspended.

During monitoring the CRS or alternate CRS shall report daily to the CPM on the status of cultural resources-related activities at the project site, unless reducing or ending daily reporting is requested by the CRS and approved by the CPM.

In the event that the CRS believes that the current level of monitoring is not appropriate in certain locations, a letter or e-mail detailing the justification for changing the level of monitoring shall be provided to the CPM for review and approval prior to any change in the level of monitoring.

The CRS, at his or her discretion, or at the request of the CPM, may informally discuss cultural resources monitoring and mitigation activities with Energy Commission technical staff.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS, or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these Conditions.

Upon becoming aware of any incidents of non-compliance with the Conditions and/or applicable LORS, the CRS and/or the project owner shall notify the CPM by telephone or e-mail within 24 hours. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the Conditions. When the issue is resolved, the CRS shall write a report describing the issue, the resolution of the issue, and the effectiveness of the resolution measures. This report shall be provided in the next MCR for the review of the CPM.

Verification: At least 30 days prior to the start of ground disturbance, the CPM will provide to the CRS an electronic copy of a form to be used as a daily monitoring log.

Monthly, while monitoring is on-going, the project owner shall include in each MCR a copy of the monthly summary report of cultural resources-related

monitoring prepared by the CRS and shall attach any new DPR 523A forms completed for finds treated prescriptively, as specified in the CRMMP.

At least 24 hours prior to implementing a proposed change in monitoring level, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for changing the monitoring level.

Daily, as long as no cultural resources are found, the CRS shall provide a statement that "no cultural resources over 50 years of age were discovered" to the CPM as an e-mail or in some other form of communication acceptable to the CPM.

At least 24 hours prior to reducing or ending daily reporting, the project owner shall submit to the CPM, for review and approval, a letter or e-mail (or some other form of communication acceptable to the CPM) detailing the CRS's justification for reducing or ending daily reporting.

No later than 30 days following the discovery of any Native American cultural materials, the project owner shall submit to the CPM copies of the information transmittal letters sent to the Chairpersons of the Native American tribes or groups who requested the information. Additionally, the project owner shall submit to the CPM copies of letters of transmittal for all subsequent responses to Native American requests for notification, consultation, and reports and records.

Within 15 days of receiving them, the project owner shall submit to the CPM copies of any comments or information provided by Native Americans in response to the project owner's transmittals of information.

CUL-7 The project owner shall grant authority to halt project-related ground disturbance to the CRS, alternate CRS, and the CRMs in the event of a discovery. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor in consultation with the CRS.

In the event a cultural resource over 50 years of age (or if younger, determined exceptionally significant by the CPM) is found, or impacts to such a resource can be anticipated, ground disturbance shall be halted or redirected in the immediate vicinity of the discovery sufficient to ensure that the resource is protected from further impacts. The halting or redirection of ground disturbance shall remain in effect until the CRS has visited the discovery, and all of the following have occurred:

1. The CRS has notified the project owner, and the CPM has been notified within 24 hours of the discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning, including a description of the discovery (or changes in character or attributes), of the action taken

(i.e., work stoppage or redirection), a recommendation of CRHR eligibility, and recommendations for data recovery from any cultural resources discoveries, whether or not a determination of CRHR eligibility has been made.

2. If the discovery would be of interest to Native Americans, the CRS has notified all Native American groups that expressed a desire to be notified in the event of such a discovery.
3. The CRS has completed field notes, measurements, and photography for a DPR 523 "Primary" form. The "Description" entry of the DPR 523 "Primary" form shall include a recommendation on the CRHR eligibility of the discovery. The project owner shall submit completed forms to the CPM.
4. The CRS, the project owner, and the CPM have conferred, and the CPM has concurred with the recommended eligibility of the discovery and approved the CRS's proposed data recovery, if any, including the curation of the artifacts, or other appropriate mitigation; and any necessary data recovery and mitigation have been completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM and CRS with a letter confirming that the CRS, alternate CRS, and CRMs have the authority to halt project-related ground disturbance in the vicinity of a cultural resources discovery, and that the project owner shall ensure that the CRS notifies the CPM within 24 hours of a discovery, or by Monday morning if the cultural resources discovery occurs between 8:00 AM on Friday and 8:00 AM on Sunday morning.

Within 48 hours of the discovery of an archaeological or ethnographic resource, the project owner shall ensure that the CRS notifies all Native American groups that expressed a desire to be notified in the event of such a discovery.

Unless the discovery can be treated prescriptively, as specified in the CRMMP, completed DPR523 forms for resources newly discovered during ground disturbance shall be submitted to the CPM for review and approval no later than 24 hours following the notification of the CPM, or 48 hours following the completion of data recordation/recovery, whichever the CRS decides is more appropriate for the subject cultural resource.

D. GEOLOGY AND PALEONTOLOGY

This section reviews the project's potential impacts on significant geological and paleontological resources. It also evaluates whether project-related activities could result in exposure to geological hazards, whether the facility design and construction can avoid any such hazards, and whether geologic or mineralogic resources are present. The analysis also examines whether fossilized remains or trace remnants of prehistoric plants or animals are present. The parties did not dispute any matters in this discipline. (Exs. 1; 10; 35; 300; 301, 1/5/10 RT 33-34, 47-48.)

This section considers two types of impacts: (1) geologic hazards, which could impact proper functioning of the proposed facility and include faulting and seismicity, liquefaction, dynamic compaction, hydrocompaction, subsidence, expansive soils, landslides, and tsunamis and seiches and (2) potential impacts the proposed facility could have on existing geologic, mineralogic, and paleontologic resources.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Site and Regional Geology

The project site is in northwest San Joaquin County, California, approximately six miles southwest of the City of Lodi, near the eastern edge of the San Joaquin and Sacramento deltas. More particularly, the LEC site is in the Great Valley Geomorphic Province. The Great Valley has dissected uplands and relatively undeformed low alluvial plains and fans, river flood plains and channels, and lake bottoms. Marine and non-marine sedimentary rocks and crystalline basement underlie much of the valley fill alluvium. (Ex. 300, p. 5.2-4.)

Four or more feet of disturbed soil and artificial fill comprise the site surface. This surface soil accumulated during agricultural and industrial development in the area. Native soil in the project area consists of two to eight feet of loose silty and clayey sands and soft to medium stiff sandy silt and silty clay. These soils are underlain by alternating layers of medium stiff to hard sandy and silty clays, sandy clayey silts, medium dense to very dense silty, clayey, and clean sand that extend to at least 71 feet below surface. (Ex 300, p. 5.2-5.)

2. Paleontologic Resources

Staff reviewed the Applicant's paleontological resources assessment and conducted its own independent evaluation. Staff determined there is no record of known

paleontological sites within a mile of the LEC site or its linears. The artificial fill and Quaternary age sediments that make up the near-surface formation are unlikely to host scientifically significant fossil remains. As a result, the potential to encounter paleontological resources during construction of the LED project is low and Conditions of Certification **PAL-1** through **PAL-7** will mitigate any potential impacts to less-than-significant levels. (Exs. 300, pp. 5.2-9, 5.2-13; 301.)

3. Seismicity

There are no documented active faults within or near the LEC site or its proposed transmission routes. As a result, Alquist-Priolo Act of 1973 and related California law do not require the project to have setbacks from occupied structures. (Ex. 300, p. 5.2-10.)

4. Liquefaction

Liquefaction is a condition in which cohesionless soils lose shear strength due to a sudden increase in pore water pressure and as a result, act as a liquid. Submerged fine-grained, poorly graded, sands and silts are most prone to liquefaction during earthquakes but testing at the LEC site indicates the subsurface formation is generally medium dense to very dense such that seismic shaking would be unlikely to cause widespread loss of shear strength. However, because loose sand layers are present as is a shallow ground water table, the site has moderate potential for liquefaction during a large earthquake. Facility design required by the California Building Code and Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **Facility Design** section of this Decision will mitigate the potential impact to less than significant. (Exs. 1, p. 5.4-7; 300, p. 5.2-10 to 5.2-11.)

Notably, although there is potential for liquefaction, the potential for lateral spreading of the site surface during seismic events is low given that the site is essentially flat. (Ex. 300, p. 5.2-11.)

5. Dynamic Compaction

Dynamic compaction of soils results when relatively unconsolidated granular materials experience vibration associated with seismic events. The vibration causes a decrease in soil volume as the soil grains rearrange into a more dense state causing an increase in soil density. The resulting decrease in volume can result in settlement of overlying structural improvements. (Ex. 300, p. 5.2-11.)

The evidence shows the potential for dynamic compaction during a large earthquake because the LEC site is underlain by artificial fill of unknown density and some layers of loose sand. The project-specific geotechnical report required by CBC and Conditions of Certification **GEN-1, GEN-5**, and **CIVIL-1** in the **Facility Design** section will mitigate the potential impact to less than significant, if dynamic compaction conditions are present. (Ex. 300, p. 5.2-11.)

6. Geologic, Mineralogic and Paleontologic Resources

The evidence further shows that there are no known viable geologic or mineralogic resources located at or immediately adjacent to the LEC site and none are expected along the proposed transmission line route. Nor do the LEC site and associated linears lie within a designated Mineral Resource Zone (MRZ). (Ex. 300, p. 5.2-13.)

The uncontrolled fill and Quaternary alluvial deposits which underlie the shallow subsurface hold little promise for production of scientifically significant fossil remains. As a result, the potential to encounter paleontological resources during construction of the LED Project is low, and Staff determined that Conditions of Certification **PAL-1** through **PAL-7** will mitigate any potential impacts to less-than-significant levels. (Exs. 300, p. 5.2-9, 5.2-13; 301.)

Finally, facility closure activities are not anticipated to impact geologic, mineralogic, or paleontologic resources because no such resources are known to exist at the power plant location or along its proposed linear facilities. (Ex. 300, p. 5.2-15.) In addition, decommissioning and closure of the power plant should not negatively affect geologic, mineralogic, or paleontologic resources since the majority of the ground disturbed in plant decommissioning and closure will be disturbed during construction and operation of the facility. (*Id*.)

7. Hydrocompaction, Landslides, and Related Matters

The evidence further reflects that the potential for hydrocompaction is minimal, the site does not appear to be susceptible to landslide activity and the potential for impacts to the site from tsunamis or seiches are negligible. (Ex. 300, p. 5.2-11 to 5.2-12.)

8. Cumulative Impacts

The evidence s shows that potential cumulative impacts, as they pertain to geologic hazards, are essentially limited to regional subsidence due to ground water withdrawal. This project will not involve the pumping of large quantities of ground water and

therefore, will not contribute to any increase in this potential hazard. (Ex. 300, p. 5.2-14.) And, any potential subsidence related to heavily loaded foundations would be effectively mitigated by including deep foundations for the project.

Furthermore, because no viable geologic, mineralogic, or paleontological resources were identified on or near the site, the potential for significant adverse cumulative impacts are low.

FINDINGS OF FACT

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

1. Although there are no known paleontologic resources on the site, such resources may be discovered during project construction. If so, any potential impacts to paleontologic resources will mitigated to less than significant through implementation of the Conditions of Certification.

2. The Conditions of Certification ensure that activities associated with construction and operation of the project will cause no significant adverse impacts to geological or paleontological resources.

3. The Conditions of Certification are sufficient to ensure that the project complies with all applicable laws, ordinances, regulations, and standards identified in the appropriate portion of **Appendix A** of this Decision.

CONCLUSION OF LAW

1. We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to geological, mineralogic, or paleontological resources.

CONDITIONS OF CERTIFICATION

PAL-1 The project owner shall provide the Compliance Project Manager (CPM) with the resume and qualifications of its Paleontological Resource Specialist (PRS) for review and approval. If the approved PRS is replaced prior to completion of project mitigation and submittal of the Paleontological Resources Report, the project owner shall obtain CPM approval of the replacement PRS. The project owner shall keep resumes on file for qualified

Paleontological Resource Monitors (PRMs). If a PRM is replaced, the resume of the replacement PRM shall also be provided to the CPM.

The PRS resume shall include the names and phone numbers of references. The resume shall also demonstrate to the satisfaction of the CPM the appropriate education and experience to accomplish the required paleontological resource tasks.

As determined by the CPM, the PRS shall meet the minimum qualifications for a vertebrate paleontologist as described in the Society of Vertebrate Paleontology (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. Institutional affiliations, appropriate credentials, and college degree;
2. Ability to recognize and collect fossils in the field;
3. Local geological and biostratigraphic expertise;
4. Proficiency in identifying vertebrate and invertebrate fossils; and
5. At least three years of paleontological resource mitigation and field experience in California and at least one year of experience leading paleontological resource mitigation and field activities.

The project owner shall ensure that the PRS obtains qualified paleontological resource monitors to monitor as he or she deems necessary on the project. Paleontologic Resource Monitors (PRMs) shall have the equivalent of the following qualifications:

- BS or BA degree in geology or paleontology and one year of experience monitoring in California; or
- AS or AA in geology, paleontology, or biology and four years' experience monitoring in California; or
- Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work. Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, maps and drawings showing the footprint of the power plant, construction laydown areas, and all related facilities. Maps shall identify all areas of the project where ground disturbance is anticipated. If the PRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the PRS and CPM. The site grading plan and plan and profile drawings for the utility lines would be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and be at a scale

between 1 inch = 40 feet and 1 inch = 100 feet. If the footprint of the project or its linear facilities change, the project owner shall provide maps and drawings reflecting those changes to the PRS and CPM.

If construction of the project proceeds in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Before work commences on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the project owner shall ensure that the PRS or PRM consults weekly with the project superintendent or construction field manager to confirm area(s) to be worked the following week and until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings to the PRS and CPM.

If there are changes to the footprint of the project, revised maps and drawings shall be provided to the PRS and CPM at least 15 days prior to the start of ground disturbance.

If there are changes to the scheduling of the construction phases, the project owner shall submit a letter to the CPM within five days of identifying the changes.

PAL-3 If after review of the plans provided pursuant to **PAL-2**, or during subsequent construction, the PRS determines that materials with moderate or high paleontological sensitivity could be impacted, the project owner shall ensure that the PRS prepares, and the project owner submits to the CPM for review and approval, a paleontological resources monitoring and mitigation plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. The PRMMP shall function as the formal guide for monitoring, collecting, and sampling activities and may be modified with CPM approval. This document shall be used as the basis of discussion when on-site decisions or changes to mitigation or monitoring procedures are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of Vertebrate Paleontology (SVP 1995) and shall include, but not be limited to, the following:

1. Assurance that the performance and sequence of project-related tasks, such as any literature searches, pre-construction surveys, worker environmental training, fieldwork, flagging or staking, construction monitoring, mapping and data recovery, fossil preparation and collection, identification and inventory, preparation of final reports, and transmittal of materials for curation will be performed according to PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and the names and qualifications of paleontological resource monitors (PRMs);

3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained units;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed plan for monitoring and sampling;
6. A discussion of procedures to be followed in the event of a significant fossil discovery, halting construction, resuming construction, and how notifications will be performed;
7. A list of equipment and supplies necessary for collection of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meet the Society of Vertebrate Paleontology's standards and requirements for the curation of paleontological resources;
9. Identification of the institution that will be approached to receive data and fossil materials collected, requirements or specifications for materials delivered for curation, and how they will be met, and the name and phone number of the contact person at the institution; and
10. A copy of the paleontological Conditions of Certification.

Verification: Not more than 5 days after notice from the PRS that paleontologically sensitive sediments are, or are likely to be impacted, the project owner shall provide a copy of the PRMMP to the CPM. The PRMMP shall include an affidavit of authorship by the PRS and acceptance of the PRMMP by the project owner evidenced by a signature.

PAL-4 If after review of the plans provided pursuant to **PAL-2**, the PRS determines that materials with moderate or high paleontological sensitivity could be impacted then, prior to ground disturbance and for the duration of construction activities involving ground disturbance, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for the following workers: project managers, construction supervisors, foremen, and general workers involved with or who operate ground-disturbing equipment or tools. Workers shall not excavate in sensitive units prior to receiving CPM-approved worker training. Worker training shall consist of a CPM-approved video or in-person presentation. The training program may be combined with other training programs prepared for cultural and biological

resources, hazardous materials, or other areas of interest or concern. No ground disturbance shall occur prior to CPM approval of the Worker Environmental Awareness Program (WEAP), unless specifically approved by the CPM.

The WEAP shall address the possibility of encountering paleontological resources in the field, the sensitivity and importance of these resources, and legal obligations to preserve and protect these resources.

The training shall include:

1. A discussion of applicable laws and penalties under the law;
2. Good quality photographs or physical examples of vertebrate fossils for project sites containing units of high paleontologic sensitivity;
3. Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;
4. Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;
5. An informational brochure that identifies reporting procedures in the event of a discovery;
6. A WEAP certification of completion form signed by each worker indicating that he/she has received the training; and
7. A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: Not more than 5 days after implementation of a PRMMP, the project owner shall submit the proposed WEAP, including the brochure, with the set of reporting procedures for workers to follow.

Not more than 20 days after implementation of a PRMMP, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning to use a video for interim training.

If the owner requests an alternate paleontological trainer, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval prior to installation of an alternate trainer. Alternate trainers shall not conduct training prior to CPM authorization.

In the monthly compliance report (MCR), the project owner shall provide copies of the WEAP certification of completion forms with the names of those trained and the trainer or type of training (in-person or video) offered that month. The MCR shall also include a running total of all persons who have completed the training to date.

PAL-5 Subject to **PAL-3,** the project owner shall ensure that the PRS and PRM(s) monitor consistent with the PRMMP all construction-related grading, excavation, trenching, and augering in areas where potential fossil-bearing

materials have been identified, both at the site and along any constructed linear facilities associated with the project.

Upon the implementation of a PRMMP (see **PAL-3**), the project owner shall ensure that the PRS and PRM(s) have the authority to halt or redirect construction if paleontological resources are encountered. The project owner shall ensure that there is no interference with monitoring activities unless directed by the PRS. Monitoring activities shall be conducted as follows:

1. Any change of monitoring from the accepted schedule in the PRMMP shall be proposed in a letter or email from the PRS and the project owner to the CPM prior to the change in monitoring and will be included in the monthly compliance report. The letter or email shall include the justification for the change in monitoring and be submitted to the CPM for review and approval.
2. The project owner shall ensure that the PRM(s) keeps a daily monitoring log of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.
3. The project owner shall ensure that the PRS notifies the CPM within 24 hours of the occurrence of any incidents of non-compliance with any paleontological resources Conditions of Certification. The PRS shall recommend corrective action to resolve the issues or achieve compliance with the Conditions of Certification.
4. For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM within 24 hours, or Monday morning in the case of a weekend event where construction has been halted because of a paleontological find.

Upon implementation of a PRMMP, the project owner shall ensure that the PRS prepares a summary of monitoring and other paleontological activities placed in the monthly compliance reports. The summary will include the name(s) of PRS or PRM(s) active during the month; general descriptions of training and monitored construction activities; and general locations of excavations, grading, and other activities. A section of the report shall include the geologic units or subunits encountered, descriptions of samplings within each unit, and a list of identified fossils. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring, including any incidents of non-compliance or any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the report shall include an explanation in the summary as to why monitoring was not conducted.

Verification: After implementation of a PRMMP, the project owner shall ensure that the PRS submits the summary of monitoring and paleontological activities in the MCR. When feasible, the CPM shall be notified 10 days in advance of any proposed changes in monitoring different from the plan identified in the PRMMP. If there is any

unforeseen change in monitoring, the notice shall be given as soon as possible prior to implementation of the change.

PAL-6 The project owner, through the designated PRS, shall ensure that all components of the PRMMP are adequately performed including collection of fossil materials, preparation of fossil materials for analysis, analysis of fossils, identification and inventory of fossils, the preparation of fossils for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during project construction.

Verification: The project owner shall maintain in his/her compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after project completion and approval of the CPM-approved paleontological resource report (see **PAL-7**). The project owner shall be responsible for paying any curation fees charged by the museum for fossils collected and curated as a result of paleontological mitigation. A copy of the letter of transmittal submitting the fossils to the curating institution shall be provided to the CPM.

PAL-7 The project owner shall ensure preparation of a Paleontological Resources Report (PRR) by the designated PRS. The PRR shall be prepared following completion of the ground-disturbing activities. The PRR shall include an analysis of the collected fossil materials and related information and submit it to the CPM for review and approval.

The report shall include, but is not limited to, a description and inventory of recovered fossil materials; a map showing the location of paleontological resources encountered; determinations of sensitivity and significance; and a statement by the PRS that project impacts to paleontological resources have been mitigated below the level of significance.

Verification: Within 90 days after completion of ground-disturbing activities, including landscaping, the project owner shall submit the PRR under confidential cover to the CPM.

Certification of Completion
Worker Environmental Awareness Program
Lodi Energy Center (08-AFC-10)

This is to certify these individuals have completed a mandatory California Energy Commission-approved Worker Environmental Awareness Program (WEAP). The WEAP includes pertinent information on cultural, paleontological, and biological resources for all personnel (that is, construction supervisors, crews, and plant operators) working on site or at related facilities. By signing below, the participant indicates that he/she understands and shall abide by the guidelines set forth in the program materials. Include this completed form in the Monthly Compliance Report.

No.	Employee Name	Title/Company	Signature
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Cultural Trainer: _____ Signature: _____ Date: ___/___/___

PaleoTrainer: _____ Signature: _____ Date: ___/___/___

Biological Trainer: _____ Signature: _____ Date:___/___/___

VII. LOCAL IMPACT ASSESSMENT

In the following sections of this Decision, we review whether the Lodi Energy Center Project (LEC or "project") will result in significant local impacts such as public health or safety hazards, adverse traffic or visual effects, unmitigated noise, or an excessive burden on local community services. These potential impacts are discussed under the technical topics of land use, traffic and transportation, socioeconomics, noise, and visual resources.

A. LAND USE

The evidence on land use was undisputed. (Ex. 1, § 5.6, Appendix 5.6A; Exs. 10, 35, 39, 44, 49; Ex. 300, p. 4.5-1 et seq.; 01/05/10 RT 41-42.)

Summary and Discussion of the Evidence

According to CEQA Guidelines,[26] a project results in significant land use impacts if it would:

- Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use.
- Conflict with existing zoning for agricultural use or a Williamson Act contract.
- Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural uses.
- Physically disrupt or divide an established community.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction, or that would normally have jurisdiction, over the project. This includes, but is not limited to, a General Plan, community or specific plan, local coastal program, airport land use compatibility plan, or zoning ordinance.

[26] Title 14, Cal. Code Regs., Section 15000 et seq., Appendix G, Sections II, IX, XVI.

- Create individual environmental effects which, when considered with other impacts from the same project or in conjunction with impacts from other closely related past, present, and reasonably foreseeable future projects, are considerable, compound, or increase other environmental impacts. (Ex. 300, p. 4.5-5)

Local ordinances and policies applicable to the project include the City of Lodi General Plan and Municipal Code (*Title 15, Chaps. 15.16.140 and 15.60 - Flood Zone and Title 17 Zoning Ordinance*); the San Joaquin County General Plan 2010 and Title 9 Zoning Conservation and Open-Space Plan, and the San Joaquin County Council of Governments Airport Land Use Compatibility Plan (ALUCP). (Ex. 11, § 5.6.3.3.)

1. The Site

The 4.4-acre LEC site and the 9.8-acre temporary laydown and parking areas are located on land owned by the City of Lodi, six miles west of the city center, on the west side of Interstate 5 (I-5), less than two miles south of State Route 12 (SR 12). The city's White Slough Water Pollution Control Facility (WPCF) is adjacent to the site on the east. The WPCF's treatment and holding ponds are situated to the north. The existing NCPA Combustion Turbine Project #2 (STIG power plant) is adjacent to the site on the west with a 230-kV PG&E overhead electrical transmission line aligned further to the west. The San Joaquin County Mosquito and Vector Control District facility is to the south. (Ex. 300, p. 4.5-2; Ex. 1, § 5.6.1.1.)

The LEC gas pipeline will be aligned within the existing STIG gas pipeline corridor, east of the site following the boundaries between seven agricultural fields, crossing two agricultural fields, and passing by rural residential land uses on West Armstrong Road, terminating at the railroad line. The Kingdon Airport is located north of and adjacent to the pipeline route. (Ex. 1, § 5.6.1.1.)

The LEC site, laydown and parking areas, and portions of the gas pipeline route are situated on land designated Public/Quasi-Public by the City of Lodi General Plan, and zoned Public and Community Facilities (PF) under the city's Zoning Ordinance (Municipal Code, Title 17). The PF zoning district applies to areas suitable for public land uses, and allows power plants and gas pipelines under the category of "Utility Facility." (*Lodi Municipal Code Title 17, Chapter 17.26, Table 2-8*.)

Most of the gas pipeline route is located in unincorporated San Joaquin County on land designated General Agriculture. Under the San Joaquin County Development Title 9 (Zoning), "Utility Services" are a permitted use in the General Agriculture zone subject to site approval. (Ex. 300, p. 4.5-4; Ex. 1, § 5.6.1.3.2, **Table 5.6-4**.)

2. Potential Impacts

Applicant's **Figure 5.6-1**, replicated at the end of this section, shows existing land uses at the site and surrounding areas that could be affected by the project. (Ex. 1, § 5.6, Figure 5.6-1.)

Conversion of Farmland. The site is not currently subject to a Williamson Act contract. (Ex. 1, § 5.6.1.2, **Table 5.6-2**, § 5.6.2.2.4.)

The California Department of Conservation (CDC) Farmland Mapping and Monitoring Program has designated the project site and laydown and parking areas as "Urban and Built-Up Land," indicating that construction of the LEC next to the STIG plant will not convert any Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use. (Ex. 300, p. 4.5-6.)

The LEC's gas pipeline route crosses land in San Joaquin County that is designated "Unique Farmland." Several segments of the route are subject to Williamson Act contracts. Utility Services are a permitted use on Williamson Act properties. (Ex. 39; *San Joaquin County Development Title 9 (Zoning), Chap. 9, § 9-1810.3(b)(1)(Z).*)

The LEC's pipeline route is adjacent to the existing STIG pipeline corridor, which is separated from agricultural operations and follows a straight alignment along agricultural field boundaries. Installation of the LEC pipeline will not convert farmland to non-agricultural use because the pipeline will not interfere with agricultural operations. To ensure that no permanent impacts result from installation, the topsoil removed during excavation will be used to restore the land to its pre-construction condition. (Ex. 300, p. 4.5-6; Ex. 1, § 5.6.1.2, **Table 5.6-2**, §§ 5.6.2.2.2,, 5.6.2.2.4, 5.6.2.3, **Table 5.6-6**; Condition of Certification **BIO-6**.)

Division of Existing Community. There is no evidence that the project will physically divide or disrupt an established community. Given its location in an industrial area adjacent to the WPCF wastewater treatment plant and the STIG power plant, the project does not alter existing residential, recreational,

commercial, institutional, or other industrial land use patterns in the area. (Ex. 1, § 5.6.2.2.1; Ex. 300, p. 4.5-6.)

Conflict with Habitat or Conservation Plan. The project is subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP), which is administered by the San Joaquin County Council of Governments (SJCOG). There is no evidence that site conflicts with any species identification or mitigation requirements because it is located on previously mitigated land uses and does not adversely affect SJCOG's ability to implement the SJMSCP. (Ex. 1, § 5.6.2.2.3; Ex. 300, p. 4.5-6.) See the **Biological Resources** section of this Decision for discussion of mitigation measures required for the gas pipeline and transmission line installation. (Ex. 1, § 5.6.4.)

3. Consistency with Land Use LORS.

Staff reviewed the use permit findings that the city and county would have made but for the Energy Commission's exclusive jurisdiction and found that the project would be eligible for use permits under local land use LORS.[27] There was no evidence presented to refute Staff's conclusions. The city did not respond to Staff's request for recommendations on permit conditions and the county stated that no specific conditions were required for pipeline installation other than the mitigation measures described above to restore the land to its pre-construction condition. (Ex. 300, p. 4.5-7; Ex. 39.)

The project site is located within the 100 year floodplain (Zone A) as designated by the Federal Emergency Management Agency (FEMA). The city requires that construction within the 100-year floodplain must comply with FEMA regulations. (*Lodi Municipal Code, Title 15 Buildings and Construction, Chapters 15.16.140 and 15.60 Flood Damage Prevention,* and *Title 17 Zoning, Chapter 17.51 FP Floodplain District*.) Condition of Certification **LAND-1** ensures that the project will be consistent with FEMA requirements for floodplain construction. (Ex. 300, p. 4.5-12.)

As discussed in the **Traffic and Transportation** section of this Decision, the LEC does not pose a hazard to aircraft operations at the Kingdon Airport and is not inconsistent with the Airport Land Use Compatibility Plan (ALUCP). The majority of the gas pipeline will be located beneath land designated as Traffic

[27] The Commission's regulations direct Staff to give due deference to a local agency's recommendations regarding matters within that agency's jurisdiction. [Cal. Code Regs., tit. 20, §§ 1714.5(b) and 1744(e).]

Pattern Zone (Zone 7) of the Kingdon Airport. However, small portions of the pipeline will be located beneath land designated as Runway Protection Zone (Zone 1), Inner Approach/Departure Zone (Zone 2), and Inner Turning Zone (Zone 3). Under the ALUCP, gas and petroleum pipelines are prohibited uses in Zones 1, 2, and 3 if the pipelines are less than 36 inches below ground level. Since the LEC gas line will be buried at a depth greater than 36 inches, it will comply with ALUCP requirements. (Ex. 10.)

Staff's **Land Use Table 2**, replicated at the end of this section, summarizes the project's compliance with applicable land use LORS. (Ex. 300 pp. 4.5-8 to 4.5-11.)

4 Land Use Compatibility

Zoning ordinances are designed to ensure the compatibility of adjacent zoning districts by limiting uses that would result in adverse impacts to surrounding properties. A project may be considered an incompatible use if it introduces a new source of pollution or hazard within close proximity to sensitive receptors, including residential areas, schools, day-care centers, hospitals, and nursing homes. Proximity is defined as "within 1,000 feet" of a school (Health & Safety Code, §§ 42301.6–9) or within 0.25 mile of a sensitive receptor under CEQA. Proximity is not necessarily a determining factor for a potentially significant impact, but it is the threshold generally used to require further evaluation. (Ex. 300, pp. 4.5-11, 4.5-12.)

There are no schools, day-care facilities, hospitals, or nursing homes within one mile of the proposed site. Three residences are located approximately 0.75 miles north of the site; and a housing development along Eight Mile Road is located about two miles south of the site. As discussed in the **Air Quality, Hazardous Materials Management, Noise, Public Health, Traffic and Transportation, and Visual Resources** sections of this Decision, there is no evidence that the project will result in any unmitigated public health or environmental impacts to sensitive receptors within a one-mile radius of the site. (Ex. 300, p. 4.5-12.)

The power plant site is adjacent to similar industrial land uses, including the adjacent STIG power plant. Given the industrial land uses surrounding the site, the distance and separation from residential areas, and the project's consistency with local LORS, we find that the project is compatible with surrounding uses and

zoning districts. (Ex. 300, p. 4.5-12.) See Staff's **Land Use Table 2** at the end of this section.

5. Cumulative Impacts

A project may result in a significant adverse cumulative impact where its effects are cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. (Cal. Code Regs., tit. 14, § 15130.)

The evidentiary record indicates that both the city and the county have recently processed dozens of new projects for consistency with land use LORS, including residential, office, institutional, commercial, and industrial development several miles from the site, except for upgrades at the adjacent White Slough WPCF. Since the LEC is an allowable land use and does not result in significant unmitigated adverse land use impacts, it will not likely combine with effects of the other permitted projects to result in significant cumulative impacts. (Ex. 300, p. 4.5-13; Ex. 1, § 5.6.3.)

Further, the project will not result in a significant contribution to regional impacts related to new development and growth.[28] The project is planned to serve the existing and anticipated electrical needs of the growing population in the project area by connecting to the existing electric system and other utility infrastructure. The land use effects of the project in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable. Therefore, cumulative land use impacts will not be significant. (Ex. 300, p. 4.5-13.)

FINDINGS OF FACT

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

1. Local land use ordinances and policies applicable to the Lodi Energy Center (LEC) include the City of Lodi General Plan and Municipal Code, the San Joaquin County General Plan 2010, San Joaquin County

[28] Although the LEC changes disturbed open space land to industrial land use, the site is designated in the General Plan and zoned for non-agricultural uses. It is therefore consistent with local land use planning and does not contribute to cumulative impacts. (Ex. 1, § 5.6.3.)

Development Title 9 (Zoning Ordinance), and the San Joaquin County Council of Governments Airport Land Use Compatibility Plan (ALUCP).

2. The LEC site, laydown and parking areas, and portions of the gas pipeline route are situated on land designated Public/Quasi-Public by the city's General Plan, and zoned Public and Community Facilities (PF), which allows power plants and gas pipelines under the category of "Utility Facility."

3. Most of the gas pipeline route is located in unincorporated San Joaquin County on land designated General Agriculture; however, under San Joaquin County Development Title 9, "Utility Services" are a permitted use in the General Agriculture zone subject to site approval.

4. The LEC site is not subject to a Williamson Act contract and will not result in conversion of farmland to non-agricultural uses.

5. The LEC's natural gas pipeline crosses agricultural properties in San Joaquin County that are subject to Williamson Act contracts; however, "Utility Services" are a permitted use on Williamson Act properties.

6. Construction of the LEC's gas pipeline within the existing STIG gas pipeline corridor will not convert farmland to non-agricultural uses because the corridor follows a straight alignment along agricultural field boundaries and does not interfere with agricultural operations.

7. To ensure that no permanent impacts to agriculture result from installation of the LEC's gas pipeline, the topsoil removed during excavation will be used to restore the land to its pre-construction condition.

8. There is no evidence that the project will physically divide or disrupt an established community.

9. The LEC is subject to the San Joaquin County Multi-Species Habitat Conservation and Open Space Plan (SJMSCP) but construction at the site does not require mitigation because the site has been disturbed by adjacent industrial development, which has already provided SJMSCP mitigation; however, construction of the LEC's gas pipeline and transmission line on agricultural land requires mitigation as described in the **Biological Resources** section of this Decision

10. The LEC is consistent with applicable land use LORS.

11. The LEC is compatible with surrounding industrial uses and will not result in any unmitigated public health or environmental impacts to sensitive receptors.

12. The LEC will comply with City of Lodi requirements for 100-year floodplain construction as described in Condition **LAND USE-1**, below.

13. The LEC gas pipeline will comply with the San Joaquin County's Airport Land Use Compatibility Plan (ALUCP) requirements for installation of the pipeline more than 36 inches below ground level to avoid conflict with Kingdon Airport safety concerns.

14. There is no evidence of any direct, indirect, or cumulative land use impacts resulting from development of the Lodi Energy Center.

CONCLUSIONS OF LAW

1. With implementation of the mitigation measures specified in this Decision, and in the Condition of Certification below, we conclude that construction and operation of the Lodi Energy Center will not result in significant adverse direct, indirect, and cumulative land use impacts.

2. The record contains an adequate analysis of the land use laws, ordinances, regulations, and standards that are relevant to the project and establishes that the project will not create any unmitigated, significantly adverse land use effects as defined under the California Environmental Quality Act.

3. The Condition of Certification, below, ensures that Lodi Energy Center will be designed, constructed, and operated in conformance with the applicable land use laws, ordinances, regulations, and standards identified in the evidentiary record and listed in the pertinent portion of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

LAND-1 The project owner shall design and construct the project in accordance with applicable development standards in the *City of Lodi Municipal Code, Title 15 Buildings and Construction, Chapters 15.16.140 and 15.60 Flood Damage Prevention,* and *Title 17 Zoning, Chapter 17.51 FP Floodplain District* and all other applicable LORS.

1. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy.

2. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage using methods and practices that minimize flood damage.

3. All new construction and substantial improvements shall be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities that are designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

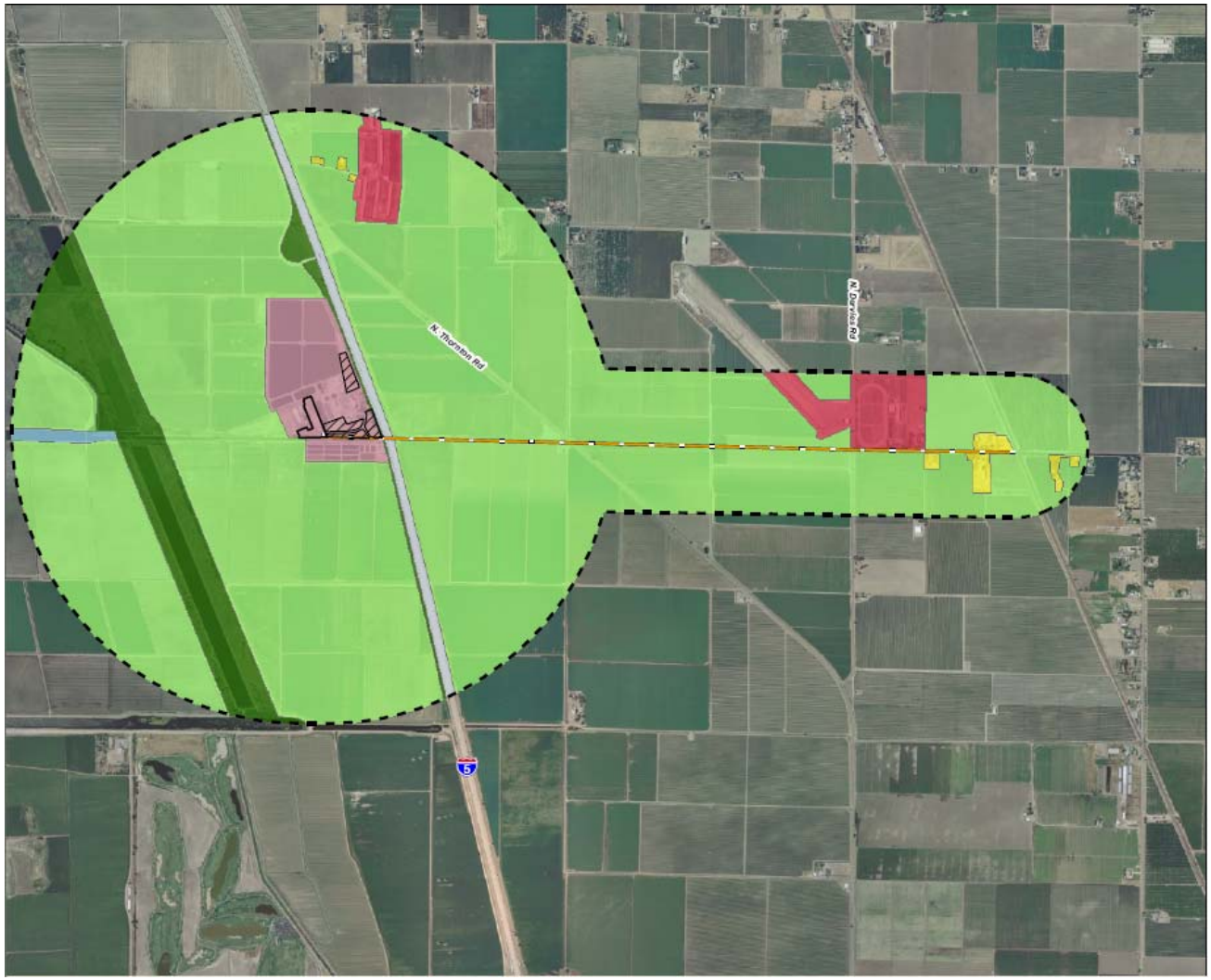
4. New construction and substantial improvement of any structure shall have the lowest floor, including basement, elevated to or above the base flood elevation. Nonresidential structures may meet the standards in paragraph 2, above, of Condition **LAND-1**. Upon the completion of the structure the elevation of the lowest floor including basement shall be certified by a registered professional engineer or surveyor, or verified by the community building inspector to be properly elevated. Such certification or verification shall be provided to the floodplain administrator.

5. Nonresidential construction shall either be elevated in conformance with paragraphs 1 and 2, above, of Condition **LAND-1**, or together with attendant utility and sanitary facilities: (a) be flood proofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water; (b) have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy; and (c) be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the floodplain administrator. New nonresidential structures shall be flood proofed or elevated eighteen inches or more above the level of the base flood.

6. Require, for all new construction and substantial improvements, that fully enclosed areas below the lowest floor that are subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or meet or exceed the following minimum criteria: either a minimum of two openings having a total net area of not less than one square inch for every square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. Openings may be equipped with screens, louvers, valves or other coverings or devices; provided, that they permit the automatic entry and exit of floodwaters; or are certified to comply with a local flood proofing standard approved by the Federal Insurance Administration.

Verification: At least 60 days prior to the start of construction the project owner shall submit to the Compliance Project Manager (CPM) written documentation including evidence of review by the city of Lodi that the project

conforms to the standards in the *City of Lodi Municipal Code, Title 15 Buildings and Construction, Chapters 15.16.140 and 15.60 Flood Damage Prevention,* and *Title 17 Zoning, Chapter 17.51 FP Floodplain District* and all other applicable LORS.



LEGEND
Natural Gas Pipeline Route
Proposed Laydown and/or Parking
Proposed Plant Site
*Buffer

Existing Land Use
Agricultural
Commerical
Freeway
Open Space
Residential
Wastewater Treatment Plant
Water

Notes:
1. * 1 mile around Project Site, 1/4 mile around NG Pipeline.

This map was compiled from various scale source data and maps and is intended for use as only an approximate representation of actual locations.

0 1,000 2,000
Feet

FIGURE 5.6-1
EXISTING LAND USE WITHIN ONE MILE OF SITE
LODI ENERGY CENTER
LODI, CALIFORNIA

Source: Ex. 1, § 5.6.

Land Use Table 2
Project Compliance with Adopted Applicable Land Use LORS

LORS	Goals/Objectives/Policy	Consistency Determination
City of Lodi General Plan Section 3 Land Use and Growth Management Element	Goal A. The City shall ensure the maintenance of ample buffers between incompatible land uses. Goal B: To preserve agricultural land surrounding Lodi and to discourage premature development of agricultural land with non-agricultural uses, while providing for urban needs.	The power plant would be located on an existing industrial site and adjacent to the WPCF and the STIG Plant, which are compatible uses. As a result, it would not affect the existing buffers. The project would not affect the city's ability to preserve agricultural land surrounding the city.
City of Lodi General Plan Section 3 Land Use and Growth Management Element	1. The City shall encourage the preservation of agricultural land surrounding the City. 5. The City shall promote land use decisions within the designated urbanized area that allow and encourage the continuation of viable agricultural activity around the city. 6. The City shall encourage San Joaquin County to retain agricultural uses on lands adjacent to the City. Goal C3. The City shall promote the development of clean industries that do not create problems or pose health risks associated with water and air pollution or potential leaks or spills.	The project would not affect the city's ability to encourage and preserve agriculture surrounding the city. The power plant has been sited adjacent to other existing industrial development (i.e. the STIG plant and the WPCF) to separate it from the nearby agricultural land uses, and the gas pipeline has been sited to minimize impacts to agricultural uses by following agricultural field boundaries to the extent possible. The project would not affect the city's ability to encourage the county to retain agricultural uses on lands adjacent to the city. Refer to the **WATER RESOURCES, AIR QUALITY**, and **HAZARDOUS MATERIALS** sections for discussions of the potential effects and measures to minimize those effects.

LORS	Goals/Objectives/Policy	Consistency Determination
	Goal H: To provide adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses. 3. The City shall designate adequate appropriately located land for quasi-public uses such as hospital, churches, private school facilities, and utility uses.	The project would be consistent with this goal. The power plant would be sited on land that allows utility uses. In addition, the power plant would be located adjacent to other industrial, and compatible, land uses.
1991 City of Lodi General Plan land use designation:PQP Public/Quasi-Public	This designation provides for government-owned facilities, public and private schools, and quasi-public uses such as hospitals and churches.	The proposed LEC would be consistent with the City of Lodi General Plan.
Lodi Municipal Code Title 15 Buildings and Construction, Chapter 15.60 Flood Damage Prevention	City of Lodi General Plan (1991) states that the city shall only permit development in the 100-year floodplain consistent with Federal Emergency Management Agency (FEMA) regulations.	The project shall follow the City of Lodi requirements for construction within a special flood hazard zone, as stated in proposed Condition of Certification **LAND-1**. Adherence to the city's floodplain development requirements will render the project consistent with FEMA requirements.
Title 17 Zoning, Chapter 17.51 FP Floodplain District	This chapter establishes specific restrictions on the use of those properties or portions of properties which are situated within the city and within the Mokelumne River floodplain and in the special flood hazard areas as defined in this chapter. Special regulation is necessary for the protection of the public health, safety and general welfare, and of property and improvements both within and without the areas described in subsection A of this section from hazards and damage resulting from floodwaters and to promote the open space	The project shall follow the City of Lodi requirements for construction within a special flood hazard zone, as stated in proposed Condition of Certification **LAND-1**. Adherence to the city's floodplain development requirements will render the project consistent with FEMA requirements.

LORS	Goals/Objectives/Policy	Consistency Determination
	conservation element policies of the city's general plan.	
City of Lodi Municipal Code Title 17 Zoning and Subdivision Ordinance	Table 2-8 in Chapter 17.26 (Special Purpose Zoning Districts) of the Lodi Municipal Code Title 17 Zoning and Subdivision Ordinance shows that power plants and gas pipelines (Utility Facility) are allowable uses in the zoning designation.	The proposed LEC would be consistent with the city of Lodi zoning.
San Joaquin County General Plan *Chapter VI Resources* Agricultural Lands Objectives	1. To protect agricultural lands needed for the continuation of commercial agricultural enterprises, small-scale farming operations, and the preservation of open space. 3. To minimize the impact on agriculture in the transition of agricultural areas to urban development.	The project would not affect the county's ability to protect agricultural lands from urban development. The project would not affect the county's ability to protect agricultural lands from urban development.
San Joaquin County General Plan *Chapter VI Resources* Agricultural Policies	5. Agricultural areas shall be used principally for crop production, ranching, and grazing. All agricultural support activities and non-farm uses shall be compatible with agricultural operations and shall satisfy the following criteria: (a) The use requires a location in an agricultural area because of unusual site area requirements, operational characteristics, resource orientation, or because it is providing a service to the surrounding agricultural area; (b) The operational characteristics of the use will not have a detrimental	The gas pipeline would be sited to allow for a connection to an existing gas pipeline. In addition, the gas pipeline would follow an existing gas pipeline route that is currently aligned with agricultural field boundaries to the extent possible. Operation of the power plant would not affect agricultural operations. Operation of the gas pipeline would not result in impacts to the agricultural parcels it would cross. Siting of the power plant would not affect agricultural operations. Construction of the gas pipeline would result in only temporary impacts to the agricultural parcels it would cross. The project would have no effect on transportation facilities. Refer to the Air Quality section for a discussion of

LORS	Goals/Objectives/Policy	Consistency Determination
	impact on the management or use of surrounding agricultural properties; (c) The use will be sited to minimize any disruption to the surrounding agricultural operations; and (d) The use will not significantly impact transportation facilities, increase air pollution, or increase fuel consumption.	project air emissions and measures to minimize potential air quality impacts.
	8. To protect agricultural land, non-agricultural uses which are allowed in the agricultural areas should be clustered, and strip or scattered development should be prohibited. 10. Non-agricultural land uses at the edge of agricultural areas shall incorporate adequate buffers (e.g., fences and setbacks) to prevent conflicts with adjoining agricultural operations.	Siting the power plant adjacent to the existing wastewater treatment plant and mosquito and vector control district meets this requirement. The power plant site would be fenced, and would be adjacent to other industrial land uses.
San Joaquin Council of Governments Airport Land Use Commission (ALUC)	California state statutes require every county with an airport served by one or more commercial air carriers to have an Airport Land Use Commission (ALUC). For San Joaquin County, the San Joaquin Council of Governments (SJCOG) Board of Directors is the designated ALUC. State statutes require each County's ALUC to prepare an Airport Land Use Compatibility Plan (ALUCP). The ALUCP for San Joaquin County was prepared and adopted in	Because the proposed LEC site is within 20,000 feet of the Kingdon Airpark, an FAA Notice Criteria evaluation was performed for the 150-foot-tall exhaust stack. Based on the results of this evaluation, a FAA Form 7460-1, Notice of Proposed Construction or Alteration has been filed with the FAA. The evaluation demonstrates that the LEC does not pose a hazard to aircraft operations therefore its location in the conical zone is not inconsistent with the ALUCP. However, utility use is not allowed in the Runway Protection Zone, and natural gas and petroleum pipelines are prohibited uses within the Inner Approach Zone. Please refer to the **TRAFFIC AND**

LORS	Goals/Objectives/Policy	Consistency Determination
	1983, was revised and updated in 1993, and is being updated as of January 2008. An ALUCP provides for the orderly growth of an airport including the area surrounding the airport referred to as the respective airport's "Area of Influence". Its primary function is to safeguard the general welfare of people residing within the vicinity of the airport and the public in general.	**TRANSPORTATION** section of this document for a discussion of the proposed gas pipeline's conformity with the Runway protection and Approach Zones.

B. TRAFFIC AND TRANSPORTATION

This section addresses the extent to which the project will affect the local area's transportation network. The evidence includes an analysis of: (1) the roads and routings that are proposed to be used for construction and operation; (2) potential traffic-related problems associated with the use of those routes; (3) the anticipated encroachment upon public rights-of-way during the construction of the project and associated facilities; (4) the frequency of trips and probable routes associated with the delivery of hazardous materials; and (5) the possible effect of project operations on local airport flight traffic. The evidence is undisputed on these matters. (1/5/10 RT 29-30, 47-48; Exs. 1; 10; 49; 300; 301.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Project Site and Vicinity

The LEC site is approximately six miles southwest of the City of Lodi and two miles north of the City of Stockton, in San Joaquin County. The project site is adjacent to the City of Lodi's White Slough Water Pollution Control Facility (WPCF) to the east, treatment and holding ponds associated with WPCF to the north, the existing Northern California Power Agency Combustion Turbine Project #2 to the west, and the San Joaquin Mosquito and Vector Control facility to the south. The project will be situated between White Slough and Interstate 5 (I-5). (Ex. 300, pp. 4.10-2 through 4.10-3.)

The nearest airport facility is the Kingdon Airport, a privately-owned airport located approximately 1.4 miles east of the LEC site. Lodi Airpark, also a privately-owned airport, is located approximately 3.6 miles east of the LEC site. (Ex. 300, p. 4.10-7.)

2. Transportation Routes, Levels of Service, and Public Transportation

Transportation routes in the project area include freeways, highways, and local roadways. Plant construction and operation traffic will use the existing area roadways, which include North Thornton Road, West Eight Mile Road, De Broggi Road, North Devries Road, and Cord Road. I-5 and State Route (SR) 12 are the principal highways in the area to provide access to the site. Other critical roads providing access to the LEC site include State Routes 4 and 160. (Exs. 1, pp. 5.12-1 to 5.12-2; 300, pp. 4.10-3 to 4.10-4.)

Construction access to the project site will be primarily from the following routes:

- From Sacramento and points north: from I-5 exit at the SR 12 interchange, then turn south onto North Thornton Road, east on I-5 Frontage Road, and north on Cord Road which is a private roadway to the project site.

- From Stockton and points south: from I-5 exit (West) Eight Mile Road, proceed west on Eight Mile Road, north on North Thornton Road, east on I-5 Frontage Road, and north on Cord Road which is a private roadway to the project site. (Ex. 300, p. 4.10-9.)

Levels of service for several roadways and intersections were evaluated. The operating conditions of a roadway (surface street) system, including intersections, are described using the term "level of service." Level of service (LOS) is a description of a driver's experience at an intersection or roadway based on the level of congestion (delay). LOS can range from "A," representing free-flow conditions with little or no delay to "F," representing saturated conditions with substantial delay. (Ex. 300, p. 4.10-4.)

The LOS requirements as specified in the Circulation Element of the City of Lodi General Plan are LOS C as the minimum to achieve on all roadway links and intersections. The San Joaquin County Traffic Impact Study Guidelines indicate that all County roads and roadways must operate at LOS C or better and all intersections must operate at LOS D or better on minor arterials and roadways of higher classification. All freeways and state highways must operate at LOS D or better. (Ex. 1, p. 5.12-7.)

The record shows that without the project, all area roadways operate at an acceptable LOS with the exception of North Thornton Road between: (1) West Eight Mile Road and North Devries Road (LOS E), (2) North Devries Road and Frontage Road (LOS D), and (3) De Broggi Road and SR 12 (LOS F). (Exs. 1, pp. 5.12-8 to 5.12-10; 300, p. 4.10-6.)

The evidence also shows that without the project, all intersections operate at an acceptable LOS. (Exs. 1, pp. 5.12-8, 5.12-13; 300, p. 4.10-7.)

3. Construction and Operation Impacts to LOS and Mitigation

The Applicant anticipates a 24-month construction period. Most construction workers will probably come from Sacramento and San Joaquin County, while

some might come from areas such as Lodi, Modesto, the foothills, and the San Francisco bay area. (Ex. 300, p. 4.10-9.)

There will be an average of 166 construction workers and the peak workforce will consist of approximately 305 workers in construction month 16. Total average construction traffic impact (including workforce and trucks) would be 365 vehicle trips (160 on-way worker trips plus 45 passenger car equivalent (PCE) for truck and delivery trips[29]. Total peak construction impact would be 558 vehicle round trips (225 worker trips plus 54 PCE truck and delivery trips). The workers will park at laydown areas within existing project site boundaries. (Ex. 300, pp. 4.10.9 to 4.10-10.)

Traffic impacts from LEC construction were analyzed under the worst-case scenario of peak construction traffic. **Traffic and Transportation Table 1** below reflects the peak hour intersection LOS and average vehicle delay during project construction conditions. All study intersections are forecast to operate at LOS C or better during construction conditions. (Ex. 300, p. 4.10-12.)

Traffic and Transportation Table 1
Peak Hour Intersection Level of Service
Project Construction Conditions

Intersection	***Movement***	***Delay***	***LOS***
SR 12 and Flag City Boulevard	Northbound Approach	17	C
West Eight Mile Road and SB I-5 Ramps	Entire Intersection	28	C
SR 12 and SB I-5 On-Ramp	Entire Intersection	9	A
West Eight Mile Road and North Thornton Road	Entire Intersection	26	C
North Devries Road and North Thornton Road	Westbound Approach	10	B
North Thornton Road and De Broggi Road	Eastbound Approach	11	B
West Eight Mile Road and NB I-5 Ramps	Entire Intersection	9	A

Source: Ex. 300, p. 4.10-12.

[29] A passenger car equivalent of three cars per truck was used to determine the traffic impacts of trucks and heavy equipment deliveries.

With a few exceptions, average daily traffic volumes along the freeway and roadway segments during construction will operate at an acceptable LOS.

Specifically, North Thornton Road between West Eight Mile Road and North Devries Road degrades from LOS E to LOS F, North Thornton Road between North Devries Road and Frontage Road will continue to operate at LOS D, and North Thornton Road between De Broggi Road and SR 12 will continue to operate at LOS F. **Traffic and Transportation Table 2** below shows the freeway/roadway segment LOS year 2009 under project construction conditions. (Exs. 1, pp. 5.12-16 to 5.12-17; 300, pp. 4.10-10 to 4.10-11.)

Traffic and Transportation Table 2
Freeway/Roadway Segment Level of Service Year 2009
Project Construction Conditions

Roadway Segment		***Between***	***Added Vehicles***	***Percentage of Existing Daily Demand***	***Daily V/C***	***LOS***
Local Roadway Segments	N. Cord Road	Frontage Road and WPCF access road	284	660%	0.03	A
	W. Eight Mile Road	Interstate 5 at N. Thornton Rd.	86	<1%	0.30	A
	De Broggi Road	North Thornton Road at Star Street	113	19%	0.06	A
	Flag City Boulevard	SR 12 and De Broggi Rd.	28	4%	0.60	A
	Star Street	De Broggi Road and SR 12	85	-	-	-
	North Thornton Road	W. Eight Mile Road and N. Devries Rd.	86	<1%	1.01	F[a,b]
	North Thornton Road	N. Devries Road and Frontage Rd.	86	<1%	0.85	D[a]
	North Thornton Road	Frontage Road and De Broggi Rd.	198	5%	0.33	A
	North Thornton Road	De Broggi Road and SR 12	85	<1%	1.07	F

Traffic and Transportation Table 2 (cont.)
Freeway/Roadway Segment Level of Service Year 2009
Project Construction Conditions

Roadway Segment		Between	Added Vehicles	Percentage of Existing Daily Demand	Daily V/C	LOS
Freeway Segments	SR 4	Hillcrest Avenue, Antioch and Junction SR 160	56	<1%	0.49	A
	SR 12	Junction SR 160 and junction with I-5	56	<1%	0.59	A
	SR 12	Junction I-5 and Thornton Rd.	170	<1%	0.23	A
	SR 12	Thornton Road and Lower Sacramento Rd.	28	<1%	0.40	A
	SR 160	Junction SR 4 and Sacramento /Contra Costa County Line	56	<1%	0.43	A
	SR 160	Contra Costa/Sacramento County Line and junction Route 12	56	<1%	0.39	A
	Interstate 5	Hammer Lane, Stockton and Eight Mile Road	86	<1%	0.88	D
	Interstate 5	Eight Mile Road and Junction with Route 12	0	0%	0.69	B
	Interstate 5	Junction Route 12 and Peltier Rd.	114	<1%	0.58	A

a Segment already operates at an unacceptable LOS
b Segment LOS degraded
Source: Ex. 1, p. 5.12-17, **Table 5.12-6.**

The Applicant proposed the temporary use of heavy hauls routes during construction, which would require an approved encroachment permit from Caltrans. Heavy Haul Route 1 would require the construction of a new temporary access road connecting the on-ramp to the southbound lanes of I-5 from eastbound SR12. Heavy Haul Route 2 would use North Thornton Road for delivery of heavy equipment and require a Transportation Permit for Oversized Loads from San Joaquin County. (Ex. 300, pp. 4.10-9 to 4.10-10; 301, p. 8.)

During project operation, seven full-time employees will generate 14 one-way trips to and from the site daily. Other project-related trips such as delivery trucks, visitors, and other business-related trips are expected to be minimal and would occur during regular business hours. The evidence assumes that operational workers would follow the same routes as the construction workers. (Ex. 300, p. 4.10-13.)

Thus, the evidence indicates that LEC-related operation traffic will not significantly impact the LOS for any roadways or intersections in the local area. (Ex. 300, pp. 4.10-10 to 4.10-12.)

Implementation of Conditions of Certification **TRANS-1** and **TRANS-2** will ensure that any construction or operation-related impacts, including construction for the new gas line, are mitigated to less than significant. Condition of Certification **TRANS-1** requires a traffic and transportation control plan prepared in coordination with the City of Lodi, San Joaquin County, and Caltrans. Condition of Certification **TRANS-2** requires the repair of damage to North Cord Road, West Eight Mile Road, De Broggi Road, and North Thornton Road from construction traffic, particularly from heavy trucks. (Ex. 300, p. 4.10-10.)

4. Public Transportation Impacts

Neither project construction nor operations are expected to adversely impact public transportation in the area.

Lodi City Grape Line and the San Joaquin Regional Transit District provide public transportation in the area, but the closest routes are approximately two miles away from the project site. There are no school bus routes or stops within the routes that would be used by the workforce going to and from the project site or along the truck routes proposed for use during construction of the project. (Ex. 300, p. 4.10-7.)

There are two rail services serving the Lodi area; however, neither provides passenger service. Although the nearest train route is approximately 2 miles from the LEC site, there is no indication in the record that the project will use the railroad system for delivery of heavy equipment. (Exs. 1, p. 5.12-14; 300, p. 4.10-8.)

Finally, there is a Class III bikeway near the LEC site on Devries Road between North Thornton Road and Armstrong Road. A Class III bikeway is a rural bike lane generally designated by a white line along the edge of the freeway. Surrounding roadways around the Devries Road bikeway would require significant improvements to accommodate bike lanes. (Exs. 1, p. 5.12-14; 300, p. 4.10-7.)

5. Deliveries and Transport of Hazardous Materials and Waste

Deliveries to the LEC site during construction would include small quantities of hazardous materials such as diesel and oils, citric acid, sodium carbonate, and sodium nitrate. (Ex. 1, p. 5.12-18.) LEC operation would require use of hazardous substances including sulfuric acid and cleaning and water treatment chemicals. A maximum of six delivery/service trucks are expected per week, with a maximum of two deliveries per month of anhydrous ammonia. A licensed hazardous waste transporter will haul any hazardous waste from the LEC site to one of three identified Class 1 hazardous waste landfills. (Exs. 300, pp. 4.10-13 to 4.10-14; 301, p. 8.)

Compliance with existing federal and state standards established to regulate the transportation of hazardous substances will mitigate potential impacts to a less than significant level. (Ex. 300, p. 4.10-13.)

6. Airport and Aviation Safety Impacts

As discussed above, the privately-owned Kingdon and Lodi airports are located within 4 miles of the LEC site. The evidence shows, however, the existing flight pattern does not bring aircraft over the project site at low altitude. The evidence further shows that the heights of the LEC's combustion turbine generator stacks, cooling tower, electrical transmission line poles, and heat recovery system generator (HRSG) stack will not cause Federal Acquisition Regulations (FAR) Part 77 impacts. FAR Part 77 establishes standards for determining obstructions to air navigation. (Exs. 1, pp. 5.12-22 to 5.12-25; 300, p. 4.10-14.)

The California Highway Patrol (CHP) monitors road traffic from the air and is expected to continue to do so from directly above I-5 and SR 12 and not fly east or west toward the LEC site. The evidence established that the LEC plumes would not affect CHP operations. (Ex. 300, p. 4.10-14.)

7. Water Vapor Plumes

Seasonal and Annual Cooling Tower Impact (SACTI) modeling was performed for the LEC's cooling tower. The modeling results indicate a very low potential for ground level fogging during LEC operation and as a result, the LEC's cooling towers would generate a less than significant impairment of visibility to motorists on nearby public roads and highways. (Ex. 300, p. 4.10-14, pp. 4.12-32 to 4.12-36; 300.)

In addition, visible water vapor plumes from the LEC gas turbine/HRSG exhausts are predicted to occur infrequently and would occur well below 20 percent of seasonal daylight clear hours. (Ex. 1, pp. 4.12-32 to 4.12-36.)

8. Cumulative Impacts

Several commercial, industrial, and residential projects are proposed for development four or more miles away from the LEC site. These projects, in combination with the LEC Project, could contribute to cumulative impacts. However, given the distance of these projects from the LEC site and the fact the projects have not yet been developed, it appears that the future construction of the proposed projects will not result in a significant cumulative impact to the traffic flow during LEC construction or operation. Moreover, because the LEC will implement a traffic control plan as required by Condition of Certification **TRANS-1**, we do not consider possible cumulative traffic impacts to be significant. (Ex. 300, p. 4.10-15.)

FINDINGS OF FACT

Based on the uncontroverted evidence, we find and conclude as follows:

1. The total average construction traffic impact will be 365 vehicle trips with a total peak construction impact of 558 vehicle round trips.
2. Development and implementation of a construction traffic control program will offset any temporary, short-term increases in congestion resulting from construction of the project and its linear facilities.

3. During operation, seven full-time employees will generate 14 one-way trips to and from the site daily.

4. The additional traffic associated with construction and operation of the LEC Project will not have a significant adverse effect on existing levels of service for roads and intersections in the project vicinity.

5. Potential adverse impacts associated with the transportation of hazardous materials during construction and operation of the project will be mitigated to insignificance by compliance with applicable federal and state laws.

6. The project will not result in significant impacts to nearby airports or aviation safety.

CONCLUSION OF LAW

1. The LEC will comply with all applicable laws, ordinances, regulations, and standards regarding traffic and transportation as identified in the pertinent portion of **Appendix A** of this Decision

2. Construction and operation of the LEC 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.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall submit the proposed traffic control and implementation plan to the affected local jurisdiction, San Joaquin County, the California Highway Patrol, and Caltrans for review and comment. If no comments are received from the County, the California Highway Patrol, or Caltrans within 30 days of submittal, the project owner may proceed with preparation of final documents. The project owner shall provide to the CPM a copy of the transmittal letter submitted to the affected local jurisdiction, the California Highway Patrol, and Caltrans requesting their review of the traffic control and implementation plan. The project owner shall provide any comment letters to the CPM for review and approval.

Verification: At least 60 days prior to start of site mobilization, the project owner shall provide to the city of Lodi and county of Joaquin, Caltrans, and the California Highway Patrol for review and comment and to the CPM for review and approval, a copy of the construction traffic control plan. The plan must document consultation with these agencies. The CPM shall review and approve the final traffic control plan within thirty (30) days of submission.

TRANS-2 Prior to site mobilization activities, the project owner shall prepare a mitigation plan for Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road. The intent of this plan is to ensure that if these roadways are damaged by project construction, they will be repaired and reconstructed to original or as near original condition as possible. This plan shall include:

- Documentation of the pre-construction condition of Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road. Prior to the start of site mobilization, the project owner shall provide to the CPM photographs or videotape of these roadways.
- Documentation of any portions of Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road that may be inadequate to accommodate oversize or large construction vehicles and identification of necessary remediation measures; and
- Reconstruction of portions of Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road that are damaged by project construction due to oversize or overweight construction vehicles.

Verification: At least 90 days prior to the start of site mobilization, the project owner shall submit a mitigation plan focused on restoring Eight Mile Road, North Thornton Road, I-5 Frontage Road, and Cord Road to its pre-project condition to the San Joaquin County Planning Department for review and comment and to the CPM for review and approval. If no comments are received from the County Planning Department and the CPM within 30 days of submittal, the project owner may proceed with preparation of final documents.

C. SOCIOECONOMICS

The first portion of the this topic focuses on pertinent demographic information within a six-mile radius of the project site, evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities and other public services, as well as the fiscal and physical capacities of local government to meet those needs. The public benefits of the project are also reviewed. As part of this review, the analysis examines both the beneficial impacts on local finances from property and sales taxes as well as the potential adverse impacts upon public services. The evidence of record is undisputed on these matters (1/5/10 RT 20, 36-37, 47; Exs. 1; 38; 41; 49; 300.)

This section also contains a discussion concerning the Environmental Justice aspects and the analysis 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

1. Demographics, Services, and Finances

The construction phase is typically the focus of this stage of the Socioeconomics analysis because of the potential influx of workers into the area. Impacts are considered significant if a large influx of non-resident workers and dependents occurs in the project area, thus increasing demand for community resources.

The evidence establishes that the majority of the construction workforce is likely to be local, coming primarily from within San Joaquin County. Since work assignments during construction typically last from a matter of days to a matter of weeks, the vast majority of the workforce will likely commute to the job and not displace the local population. (Exs. 1, pp. 5.10-15 to 5.10-16; 300, 4.8-6.)

Project construction is expected to occur over a 24-month period. The greatest number of construction workers will occur in the 16th month of construction. The number of construction workers will vary in range during the first and last few months of construction to 305 workers at peak construction. There will be an average of 168 workers per month during construction. (Exs. 1, p. 5.10-13; 300, p. 4.8-5.)

During operation of the project, about five to seven workers will be needed. Most of the operational workers are expected to come locally from San Joaquin County. The evidence establishes that this small increase in employment will have little effect on employment rates. (Exs. 1, pp. 5.10-13, 5.10-8; 300, pp. 4.8-6, 4.8-7.)

The capital costs for the LEC are approximately $298 million; of this, construction materials and supplies are estimated at approximately $275 million. The total construction payroll is estimated at $26.8 million. (Exs. 1, pp. 5.10-16, 5.10-17; 300, p. 4.8-11.)

The total sales tax estimated during construction is expected to be between $155,000 and $310,000. (Ex. 300, p. 4.8-11.) The LEC is not expected to pay property taxes because the property is owned by the City of Lodi. (Ex. 41, p. 34; Attachment DA5.10-1.)

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The following table provides a summary of the economic effects of the LEC.

Socioeconomics Table 5
LEC Economic Benefits (2008 dollars)

Fiscal Benefits	
Estimated annual property taxes	None[1]
State and local sales taxes: Construction	$155,000 – $310,000
State and local sales taxes: Operation	$170,500
School Impact Fee	$2,350
Non-Fiscal Benefits	
Total capital costs	$298 million
Construction payroll	$26.8 million
Annual Operations and Maintenance	$3.5 million
Construction materials and supplies	$275 million
Operations and maintenance supplies	$2.9 million
Direct, Indirect, and Induced Benefits	
Estimated Direct Employment	
Construction	305 jobs (maximum)
Operation	7 jobs (maximum)
Estimated Indirect Employment	
Jobs	29 jobs
Income	$1.1 million
Estimated Induced Employment	
Jobs	61 jobs
Income	$2.1 million

1 LEC is not expected to pay property taxes since the City of Lodi is one of the Northern California Power Agency (NCPA) project participants for the LEC project (State of California 2008).

Source: Ex. 300, p. 4.8-11.

The analysis of record characterizes the increase in employment and the increase in sales tax and generation of secondary jobs and income. (Ex. 300, p. 4.8-7.) The evidence further establishes that since the workforce will likely commute to the project, neither the construction nor the operation workers will place an undue stress upon available housing. Similarly, the evidence shows that existing educational, police, medical and emergency services will not be adversely impacted. (Ex. 300, pp. 4.8-7 to 4.8-9.)

Finally, the evidence shows that the size of the available workforce in the San Joaquin County area ensures that LEC construction, in conjunction with other projects planned or in process, will not put a strain on the types of workers needed to complete all other identified projects. Because the LEC will not result in any significant adverse socioeconomic impacts to population, housing, or public services due to the small size and temporary nature of construction, it is unlikely that it will contribute significantly to cumulative socioeconomic impacts. Thus, the LEC's impact on socioeconomics, when combined with the existing impact of other projects, is not cumulatively considerable. (Ex. 300, pp. 4.8-9 to 4.8-10.)

2. Environmental Justice Aspects

Section 65040.12 (e) of the Government Code defines "environmental justice" to mean "fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." In addition, federal guidelines encourage governmental agencies to incorporate environmental justice principles in the environmental review of this project.

The steps recommended by these guidance documents to assure that environmental justice concerns are addressed include: (1) outreach and involvement; (2) a demographic screening to determine the existence of a minority or low-income population; and (3) if warranted, a detailed examination of the distribution of impacts on segments of the population.

The evidence of record contains a demographic screening conducted in accordance with information contained in two documents: *Environmental Justice: Guidance Under the National Environmental Policy Act* (Council on Environmental Quality, 1997) and *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses* (National Council on Environmental Quality, 1998). (Ex. 300, p. 4.8-2.) The purpose of the

demographic screening is to determine whether there exists a minority or low-income population within the potentially affected area. Minority populations exist, for purposes of an environmental justice analysis, where either:

- The minority population of the affected area is greater than 50 percent of the affected area's general population; or
- The minority population percentage of the area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis; or
- One or more U.S. Census blocks in the affected area have a minority population greater than 50 percent.

Minority individuals, for present purposes, are those who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. The below poverty-level-population was also based on the 2000 U.S. Census.

The evidence shows that Census 2000 information indicates a minority population by census block of 43.3 percent within a six-mile radius of the LEC. (Ex. 300, p. 4.8-2, **Socioeconomics Figure 1**.) In addition, there are pockets (census blocks) with greater than 75 percent minority population within the six-mile radius. Census 30 data by census block group shows that the low-income population is 12.9 percent within the six-mile radius of LEC. (Ex. 300, pp. 4.8-2, 4.8-3.).

FINDINGS OF FACT

Based on the persuasive weight of the evidence, we find as follows:

1. The LEC will draw primarily upon the local labor force from San Joaquin County for the construction and the operation workforce.
2. The project will not cause an influx of a significant number of construction or operation workers into the local area.
3. The project is not likely to have a significant adverse effect upon local employment, housing, schools, medical resources, or fire and police protection.
4. The project will have a construction payroll of approximately $26.8 million.

5. LEC will result in local direct, indirect, and induced benefits – both fiscal and non-fiscal.
6. The project will likely result in generation of secondary jobs and income and increased revenue from sales taxes due to construction activities.
7. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.
8. Federal environmental justice guidelines are not binding in this case. Nevertheless, the analysis of record has been performed in conformity therewith.
9. Minority and low income populations exist within a six mile radius of the site; however, the LEC will not cause or contribute to disproportionate impacts upon minority or low income groups
10. Siting of the LEC, and the analysis thereof, are consistent with the principles underlying environmental justice.
11. The LEC's contribution to cumulative impacts, in conjunction with the impacts from other reasonably foreseeable projects, is adequately addressed in the evidence of record and in appropriate portions of this Decision.

CONCLUSION OF LAW

1. We therefore conclude that the project construction and operation activities will create some degree of benefit to the local area and will conform to principles of environmental justice. No Conditions of Certification are required for this topic because no significant adverse socioeconomics impacts will occur as a result of construction and operation of the LEC.

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. 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. The analysis of record summarized below evaluates whether noise and vibration produced during project construction and operation will be sufficiently mitigated to comply with applicable law. The evidence presented was uncontested. (Exs. 1, 49; 300; 1/5/10 RT 38, 47-48.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The LEC will be constructed on land located approximately six miles to the southwest of the City center and two miles north of the City of Stockton, in San Joaquin County. The project site is adjacent to the City of Lodi's White Slough Water Pollution Control Facility (WPCF) to the east, treatment and holding ponds associated with WPCF to the north, the existing Northern California Power Agency Combustion Turbine Project #2 to the west, and the San Joaquin Mosquito and Vector Control facility to the south. The project will be situated between White Slough and Interstate 5 (I-5). (Ex. 300, p. 4.6-4.)

New off-site linear facilities include a 2.7-mile-long natural gas pipeline. The Applicant intends to construct a new water supply pipeline from the WPCF and use existing transmission lines connecting to an adjacent switchyard. (Ex. 300, p. 4.6-8.)

The ambient noise in the project vicinity consists primarily of highway traffic. The nearest sensitive noise receptor is a residence located approximately 4,250 feet north of the project site. (Ex. 300, p. 4.6-4.)

To establish a baseline for comparison of predicted project noise to existing ambient noise, the Applicant presented the results of an ambient noise survey conducted from July 7, 2008 through July 9, 2008. Measurements were taken at various times throughout the day and night at the following sensitive receptor locations:

- ***Location M1***: Near the closest residence to the project, which is a single-family residence located within San Joaquin County, approximately 4,250

feet north of the northern project boundary. I-5 runs between the project site and the residence.

- ***Location M2***: Near a residence located approximately 5,500 feet north east of the project's eastern boundary, on the opposite side of I-5.
- ***Location M3***: Near a residence located approximately 7,000 feet to the southeast of the eastern project boundary on the opposite side of I-5.
- ***Location M4***: A golf course adjacent to a residential development located approximately two miles south of the project that stands between the project and the residences. (Exs. 1, p. 5.7-4 to 5.7-10; 300, pp. 4.6-5 to 4.6-7.)

The ambient noise monitoring surveys recorded L_{eq} (energy average) and L_{90} (background) noise levels and resulted in the measurements shown below in **Noise Table 1**:

Noise Table 1
Summary of Measured Ambient Noise Levels

Measurement Location	***Measured Noise Levels, dBA***		
	L_{eq} – Daytime[1]	***L_{eq} – Nighttime[2]***	***L_{90} – Nighttime[3]***
M1: Nearest Residence	63	64	56
M2: Northeast Residence	54	53	44
M3: Southeast Residence	54	55	42
M4: Southern Residential Development	59	48	38

Source: (Ex. 300, p. 4.6-6.)
1. Staff calculations of average of 15 daytime hours
2 Staff calculations of average of nine nighttime hours
3. Staff calculations of average of four consecutive quietest hours of the nighttime

1. Noise

a. Construction

Construction noise is a temporary event, in this case expected to last about 24 months. Construction of the LEC is expected to be typical of similar projects in terms of schedule, equipment used, and other types of activities. (Ex. 300, p. 4.6-7.)

The evidence predicts the noise impacts of project construction on the nearest sensitive receptors. A comparison of construction noise estimates to measured ambient conditions is summarized below in **Noise Table 2**. (Exs. 1, 5.7-7 to 5.7; 300, p. 4.6-7.)

Noise Table 2
Maximum Allowable Noise Exposure: Stationary Noise Sources

	Daytime (7 a.m. to 10 p.m.)	Nighttime (10 p.m. to 7 a.m.)
Hourly Equivalent Sound Level (L_{eq}), dB	50	45
Maximum Sound Level (L_{max}), dB	70	65

Source: (Ex. 300, p. 4.6-3.)

As seen in the last column of the table, the highest increase in the ambient noise levels at the project's noise-sensitive receptors will be 1 dBA. An increase of 1 dBA will not be noticeable; therefore, the noise effects of plant construction are considered to be less than significant at the above receptors. Nonetheless, Conditions of Certification **NOISE-1, NOISE-2,** and **NOISE-8** will ensure that LEC construction, including construction of the offsite linear facilities, will create less than significant adverse impacts at the most noise-sensitive receptors. **NOISE-1** and **NOISE-2**, which will establish a notification process and a noise complaint process to resolve any complaints regarding construction noise. **NOISE-8** will ensure that LEC construction activities will comply with the San Joaquin County LORS regarding the allowable times to perform noisy construction work. (Ex. 300, pp. 4.6-7 through 4.6-8.)

Typically, the loudest noise encountered during construction, inherent in building any project incorporating a steam turbine, is created by the steam blows. If the plant were started up without thoroughly cleaning out feed-water and steam systems, accumulated debris will find its way into the steam turbine, quickly destroying the machine. In order to prevent such damage, series of short flushing actions (referred to as steam blows), lasting two or three minutes each, are performed several times daily over a period of two or three weeks. High pressure steam blows, if unsilenced, can typically produce noise levels as high as 129 dBA at a distance of 50 feet; this will amount to roughly 90 dBA at the nearest receptor, with consideration for distance and ground attenuation effects. With a temporary silencer installed on the steam blow piping – as required by Condition of Certification **NOISE-6** the noise level can be attenuated by 20 to 30 dBA. (Ex. 300, pp. 4.6-8 to 4.6-9.)

The evidence addressed the need to protect construction workers from noise hazards and has recognized those applicable LORS that would protect construction workers. Condition of Certification **NOISE-3** will ensure that construction workers are adequately protected. (Ex. 300, p. 4.6-10.)

Should pile driving be required for construction of the LEC, the noise from this operation could be expected to reach 104 dBA at a distance of 50 feet. Pile driving noise will thus be projected to reach levels of 65 dBA at location M1, the nearest residential receptor. The evidence further shows that the greatest increase over ambient noise levels resulting from pile driving will occur at location M2 with an increase of 10 dBA. While this will produce a noticeable impact, Staff determined that implementation of Condition of Certification **NOISE-8**, which limits the temporary pile driving to daytime hours, will result in less than significant impacts. (Ex. 300, p. 4.6-9.)

b. Operation

The primary noise sources of the LEC include combustion turbine generators, steam turbine generators, compressors, heat recovery system generators (HRSGs), transformers, and a cooling tower. (Ex. 300, p. 4.9-10.) The Applicant has incorporated noise reduction measures into the design of the project to ensure that there will not be a substantial increase in noise levels at the nearest receptors.

The Applicant submitted evidence of noise modeling to determine the project's noise impacts on sensitive receptors and predicted operational noise levels as summarized in **Noise Table 3** below. (Exs. 1, pp. 5.7-14 to 5.7-15; 300, p. 4.6-10.)

Noise Table 3
Predicted Operational Noise Levels and Noise LORS

Receptor	***Project Alone Operational Noise Level L_{eq} (dBA)[1]***	***City of Lodi General Plan, CNEL (dBA)***	***San Joaquin County Code, L_{eq} (dBA)[2]***
M1	45	60	50 day/ 45 night
M2	45	60	50 day/ 45 night
M3	44	60	50 day/ 45 night
M4	42	60	50 day/ 45 night

Sources: [1] 300, p. 4.6-10
[2] **Noise Table 1**, above

As shown by the table, the project will not exceed the prescribed limits at any of the sensitive receptors. Condition of Certification **NOISE-4** will fully ensure compliance with local LORS.

The evidence has addressed predicted operational noise by comparing predicted power plant noise levels to the ambient night-time background noise levels at the nearest sensitive receptors. The predicted operational noise levels are shown in **NOISE Table 4** below. (Exs. 1, pp. 5.7-7 to 5.7-10, 5.7-14 to 5.7-15; 300, p. 4.6-11 to 4.6-12.)

Noise Table 4
Predicted Operational Noise Levels and CEQA

Receptor	***Project Alone Operational Noise Level L_{eq} (dBA)[1]***	***Measured Existing Ambient, Average Nighttime L_{90} (dBA)[2]***	***Project Plus Ambient L_{90} (dBA)***	***Change in Ambient Level***
M1	45	56	56	+0
M2	45	44	48	+4
M3	44	42	46	+4
M4	42	38	43	+5

Source: 300, p. 4.6-12

Combining ambient noise levels with project noise levels at M2 and M3 results in an increase of 4 dBA above the ambient. We regard an increase of up to 5 dBA as a less-than-significant impact. Therefore, these noise impacts at M1, M2 and M3 are less than significant. Combining the ambient noise level with the project noise level will result in an increase of 5 dBA above the ambient. While this is a noticeable increase, it is still within a range deemed less than significant. Additionally, this increase will comply with the 5 dBA maximum noise level increase at sensitive receptors set forth in the City of Lodi Municipal Code. Condition of Certification **NOISE-4** will ensure that all of the above-discussed noise levels are not further exceeded. (Ex. 300, pp. 4.6-11, 4.6-12.)

All gas piping will lie underground and will be silent during operation. Noise effects from the electrical interconnection line typically do not extend beyond the right-of-way easement of the line and will thus be inaudible to any receptors (Ex. 300, p. 4.6-12.)

2. Vibration

a. Construction

Staff determined that pile driving is the only construction operation likely to produce vibration that could be perceived off-site. However, because vibration attenuates (or diminishes) rapidly, Staff concluded that no vibration will be perceptible at any appreciable distance from the project site. (Ex. 300, p. 4.6-9.)

b. Operation

Vibration from an operating power plant could be ground-borne or air-borne. In Staff's view, because the operating components of a combined cycle plant must be carefully balances and affixed with permanent vibration sensors, the ground-borne vibrations from LEC will be undetectable by any likely receptor. (Ex. 300, p. 4.6-12.)

The LEC's primary source of airborne vibration will be the gas turbines' exhaust. However, because LEC is a combined cycle plant, the exhaust must pass through the HRSGs and the stack silencers before it reaches the atmosphere, the HRSGs function as efficient mufflers. Therefore, it is unlikely that that the LEC will cause perceptible airborne vibration effects. (Ex. 300, p. 4.6-13.)

3. Cumulative Impacts

Section 15130 of the CEQA Guidelines (Cal. Code Regs., tit. 14) requires a discussion of cumulative environmental impacts. Cumulative impacts are two or more individual impacts that, when considered together, are considerable or that compound or increase other environmental impacts.

The Applicant has identified twenty-one projects in the vicinity of the LEC. With the exception of the neighboring WPCF, all of these projects are more than four miles away from the LEC site, which is too far to cause cumulative impacts when combined with the LEC. The plans to modify the WPCF include the addition of process equipment. However, given the relatively far distances to the LEC Project receptors, cumulative impacts are not expected. (Ex. 300, p. 4.6-13.)

FINDINGS OF FACT

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

1. Construction and operation of the LEC will not significantly 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 employing measures such as sound reduction devices and limiting construction to day-time hours in accordance with local noise control laws and ordinances.

3. Measures contained in the Conditions of Certification and compliance with local LORS will assure that pile driving activities are mitigated to below a level of significance.

4. Operational noise will not cause significant adverse impacts to nearby residences.

5. The project owner will implement measures to protect workers from injury due to excessive noise levels.

6. The LEC will not create ground or airborne vibrations which cause significant off-site impacts.

7. Implementation of the Conditions of Certification, below, ensure that project-related noise emissions will not cause significant adverse impacts to sensitive noise receptors.

CONCLUSION OF LAW

1. The Commission concludes that implementation of the following Conditions of Certification ensure that the LEC will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portion of **Appendix A** of this Decision, and that the project will not cause indirect, direct, or cumulative significant adverse noise impacts.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents within two miles of the site and one mile of the linear facilities, by mail or other effective means, of the commencement of project construction. At the same time, the project

owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project and include that telephone number in the above notice. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: Prior to ground disturbance, the project owner shall transmit to the Compliance Project Manager (CPM) a statement, signed by the project owner's project manager, stating that the above notification has been performed and describing the method of that notification, verifying that the telephone number has been established and posted at the site, and giving that telephone number.

NOISE COMPLAINT PROCESS

NOISE-2 Throughout the construction and operation of The LEC, the project owner shall document, investigate, evaluate, and attempt to resolve all project-related noise complaints. The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (below), or a functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- Take all feasible measures to reduce the noise at its source if the noise is project related; and
- Submit a report documenting the complaint and the actions taken. The report shall include: a complaint summary, including final results of noise reduction efforts, and if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within five days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a three-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is implemented.

NOISE-3 The project owner shall submit to the CPM for review and approval a noise control program and a statement, signed by the project owner's project manager, verifying that the noise control program will be implemented throughout construction of the project. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal/OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the noise control program and the project owner's project manager's signed statement. The project owner shall make the program available to Cal/OSHA upon request.

NOISE RESTRICTIONS

NOISE-4 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the noise levels due to operation of the project alone will not exceed: an hourly average of 45 dBA, measured at or near monitoring locations M1 (approximately 4,250 feet north of the project site boundary) and M2 (approximately 5,500 feet northeast of the project site boundary); an hourly average of 44 dBA, measured at or near monitoring location M3 (approximately 7,000 feet southeast of the project site boundary); and an hourly average of 42 dBA, measured at or near monitoring location M4 (approximately 10,000 feet south of the project site boundary).

No new pure-tone components shall be caused by the project. No single piece of equipment shall be allowed to stand out as a source of noise that draws legitimate complaints.

A. When the project first achieves a sustained output of 85 percent or greater of rated capacity, the project owner shall conduct a community noise survey at monitoring location M4, or at a closer location acceptable to the CPM. This survey during the power plant's full-load operation shall also include measurement of one-third octave band sound pressure levels to ensure that no new pure-tone noise components have been caused by the project.

During the period of this survey, the project owner shall conduct a survey of noise at monitoring locations M1, M2, and M3, or at closer locations acceptable to the CPM. The short-term noise measurements at this location shall be conducted during the night-time hours of 10:00 p.m. to 7:00 a.m.

The measurement of power plant noise for the purposes of demonstrating compliance with this Condition of Certification may alternatively be made at a location, acceptable to the CPM, closer to the plant (e.g., 400 feet from the plant boundary) and this measured level then mathematically extrapolated to determine the

plant noise contribution at the affected residence. The character of the plant noise shall be evaluated at the affected receptor locations to determine the presence of pure tones or other dominant sources of plant noise.

B. If the results from the noise survey indicate that the power plant noise at the affected receptor sites exceeds the above values, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

C. If the results from the noise survey indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: The survey shall take place within 30 days of the project first achieving a sustained output of 85 percent or greater of rated capacity. Within 15 days after completing the survey, the project owner shall submit a summary report of the survey to the CPM. Included in the survey report shall be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limit, and a schedule, subject to CPM approval, for implementing these measures. When these measures are in place, the project owner shall repeat the noise survey.

NOISE-5 Following the project's first achieving a sustained output of 85 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 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.

STEAM BLOW RESTRICTIONS

NOISE-6 The project owner shall equip the steam blow piping with a temporary silencer. The project owner shall conduct steam blows only during the hours of 7:00 a.m. to 9:00 p.m.

Verification: At least 15 days prior to the first steam blow, the project owner shall submit to the CPM drawings or other information describing the temporary steam blow silencer and a description of the steam blow schedule.

NOISE-7 At least 15 days prior to the first steam blow(s), the project owner shall notify all residents or business owners within one miles of the site of the planned steam blow activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within five days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam blow activities, including a description of the method(s) of that notification.

CONSTRUCTION TIME RESTRICTIONS

NOISE-8 Heavy equipment operation and noisy construction work relating to any project features shall be restricted to the times delineated below:

- Any Day: 6:00 a.m. to 9:00 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Verification: Prior to ground disturbance, the project owner shall transmit to the CPM a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

EXHIBIT 1 - NOISE COMPLAINT RESOLUTION FORM

Lodi Energy Center (08-AFC-10)
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 three feet from noise source _____dBA Date: _____ Initial noise levels at complainant's property: _____ dBA Date: _____ Final noise levels at three 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).

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 percent, 50 percent and 90 percent of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the noise level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: Guidelines for the Preparation and Content of Noise Elements of the General Plan, Model Community Noise Control Ordinance, California Department of Health Services 1976, 1977.

E. VISUAL RESOURCES

Visual resources are the features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts in order to determine whether the project has the potential to cause substantial degradation to the existing visual character of the site and its surroundings, substantially affect a scenic vista or damage scenic resources, or create a new source of substantial light or glare affecting day or nighttime views in the area. (Cal. Code Regs., tit. 14 § 15382, Appen. G.) The evidence contained in the record is undisputed. (Exs. 1; 2; 4; 5; 10; 29; 34; 35; 49; 300; 302; 01/05/10 RT 39-40.)

Key Observation Points (KOPs) represent the most critical locations from which the project would be seen. These reflect, in particular, those key sensitive viewer groups most likely to be affected by the project. Assessments of project impact are determined from these KOPs.

KOPs are rated for their level of visual sensitivity to impact. Visual simulations of the project as seen from KOPs, along with field observations, are used to evaluate the projected levels of project contrast, dominance, and view blockage. In addition, the project is evaluated for conformance with applicable LORS. Local public policy pertaining to visual resources is also taken into account in determining levels of viewer concern.

As needed, Conditions of Certification are imposed to mitigate potentially significant impacts, and to ensure LORS conformance.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The Lodi Energy Center (LEC) is to be located on a 4.4-acre site in the city of Lodi, one-fourth mile southwest of Interstate 5 (I-5) on North Cord Road. The project site, leased from the city of Lodi, contains a 49 MW steam-injected combustion turbine (STIG) plant owned by the Northern California Power Authority (NCPA) and is located next to the city's White Slough Water Pollution Control Facility (WPFC); White Slough Wildlife Area; and the Woodbridge Ecological Reserve. Primary access to the LEC is North Thornton Road from I-5. Lodi's central city is located about 6 miles northeast on State Highway 99. See **Visual Resources Figure 1.** (Ex. 300 p. 4.12-3.)

Both I-5 and Eight Mile Road have been designated as scenic highways in the *San Joaquin County General Plan 2010* for their agricultural views. Eight Mile Road is located about two miles south of the plant. (Ex. 300 p. 4.12-3.)

VISUAL RESOURCE - FIGURE 1

Lodi Energy Center - Location Map

Source: Exhibit 300, Visual Resources – Figure 1

Visually, the primary LEC features to be introduced to the site include:

1. 150-foot high exhaust stack
2. 105-foot high and 150-foot wide heat recovery steam generator (HRSG)
3. 70-foot CTG (combustion turbine generator) inlet air housing
4. 46-foot high and 337-feet long cooling tower
5. 40-foot high and 160-foot wide water treatment building.

   (Ex. 300 p. 4.12-3)

1. Direct/Indirect Impacts and Mitigation

   a. Construction Impacts

Construction activities will occur over approximately 24-months. Activities include installation of the gas turbine generators and power train foundations; erecting of the heat recovery steam generators; installation of pipe supports, liner plates and baffles and aboveground electrical equipment; exhaust stack fabrication and condenser work; and installation of the air cooled condenser, aboveground tanks and prefabricated buildings. As project structures are erected that exceed the height of the adjacent orchards, they will become visible to the public. Construction materials, heavy equipment, trucks, modular offices, and parked vehicles on the construction site and the laydown area will have limited public visibility due to the nearby orchard. (Ex. 300 pp. 4.12-7 to 4.12-8.)

Project construction activities will take place primarily during daylight hours. Lighting that may be required to facilitate night time construction activities will, to the extent feasible and consistent with worker safety codes, be directed toward the center of the construction site and shielded to prevent light from straying offsite. Task-specific construction lighting will be used where feasible. The use of shielded directional exterior lights and fixtures of a non-glare type on the construction site and laydown area will minimize off-site light and glare impacts. We adopt Condition of Certification **VIS-2** to formalize appropriate construction lighting measures. (Ex. 300, p. 4.12-8.)

Construction laydown and parking areas will be located on four parcels (Laydown Area A through Area D) totaling 9.8 acres located within the site boundaries of the White Slough Pollution Control Facility. Two construction laydown and parking areas (Area A and Area B) are located directly west of I-5, which is a San

Joaquin County-designated scenic highway. However, because of existing trees that screen Area A and Area B, those areas will not be visible to motorists traveling on the highway. During the construction phase of the project, those two areas will be used to store construction equipment, trucks, and parked vehicles. See **Visual Resources Figure 2.** (Ex. 300, p. 4.12-8.)

VISUAL RESOURCE - FIGURE 2

Lodi Center – Construction Laydown and Parking Areas

Source: Exhibit 300, Visual Resources – Figure 2

Three transmission poles and the turning pole and lines will be installed on the east side of the property. Two transmission poles and lines will be installed on the north side of the property to tie into the existing 230-kilovolt (kV) switchyard adjacent to the STIG plant. The new plant will use existing nearby infrastructure and utility corridors to tie into the switchyard as well as for access to sewer connections. A new gas pipeline, which will extend beyond the project site, and recycled water pipeline, will be constructed below ground. (Ex. 300, p. 4.12-8.)

Installing the poles and lines is a four-step process. During installation, construction materials, equipment, trucks, and vehicles will be visible from I-5, but only for a short, four-week period. Because of the constant movement of crews from one pole to another, the viewer exposure, and viewer sensitivity is low. The newly-installed transmission lines will visually blend with the existing transmission structures and wires currently used by the existing STIG plant. (Ex. 300, p. 4.12-8.)

During pipeline construction, the ground surface along the alignments will be temporarily disrupted by the presence of construction equipment, excavated piles of dirt, concrete and pavement, and construction personnel and vehicles. Along the construction route, visibility from nearby areas will be of a short duration, as each pipeline segment is generally constructed and installed within a few days, before proceeding to the next segment's installation. After construction, the ground surfaces will be restored. The restored ground surfaces and buried pipelines will not create a change to the existing visual condition. (Ex. 300, p. 4.12-9.)

We find that construction activities will not result in a long-term visual degradation. Overall, the project's construction activities generate a less than significant visual effect.

b. Operation Impacts

Before considering individual KOPs, we consider generally whether the project will substantially affect a scenic vista or damage scenic resources, or create a new source of substantial light or glare affecting day or night time views in the area. A *scenic vista* is defined as a distant view of high pictorial quality perceived through and along a corridor or opening. No scenic vistas exist in the **KOP 1**, **KOP 2**, and **KOP 3** viewsheds. (Ex. 300, p. 4.12-6.)

Scenic resources include a unique water feature such as a waterfall; transitional water such as river mouth ecosystems, lagoons, coastal lakes, and brackish wetlands; or part of a stream, river, or estuary. No state highways near the LEC are listed as eligible for designation by the California Department of Transportation (CalTrans) as a state scenic highway. However, because of their agricultural views, I-5 is listed as a scenic highway in the *San Joaquin County General Plan 2010* as is Eight Mile Road. I-5 is approximately one-fourth mile from the project site and Eight Mile Road, approximately two miles. (Ex. 300, p. 4.12-6 to p. 4.12-7.)

In addition, LEC is situated next to the Sacramento-San Joaquin Delta, an estuary that, at its closest point, is located about one-half mile from the LEC. The Sacramento-San Joaquin Delta estuary, home to about 500 species of wildlife and 20 endangered species, includes lands used by migratory birds, including snow geese, swans, and the greater and lesser Sandhill Cranes. (Ex. 300, p. 4.12-7.)

The White Slough Wildlife Area is part of the estuary as is the Woodbridge Ecological Reserve. At its closest point the wildlife area is located about one-half mile from the southern boundary of the site. This area is included on the Delta Protection Commission's Inventory of Recreational Facilities for San Joaquin County and is also listed in San Joaquin County's *General Plan 2010* as a significant resource for recreation. The White Slough Recreational Area (borrow ponds) is listed as a regional park. See **Visual Resources Figure 3.** (Ex. 300, p. 4.12-7.)

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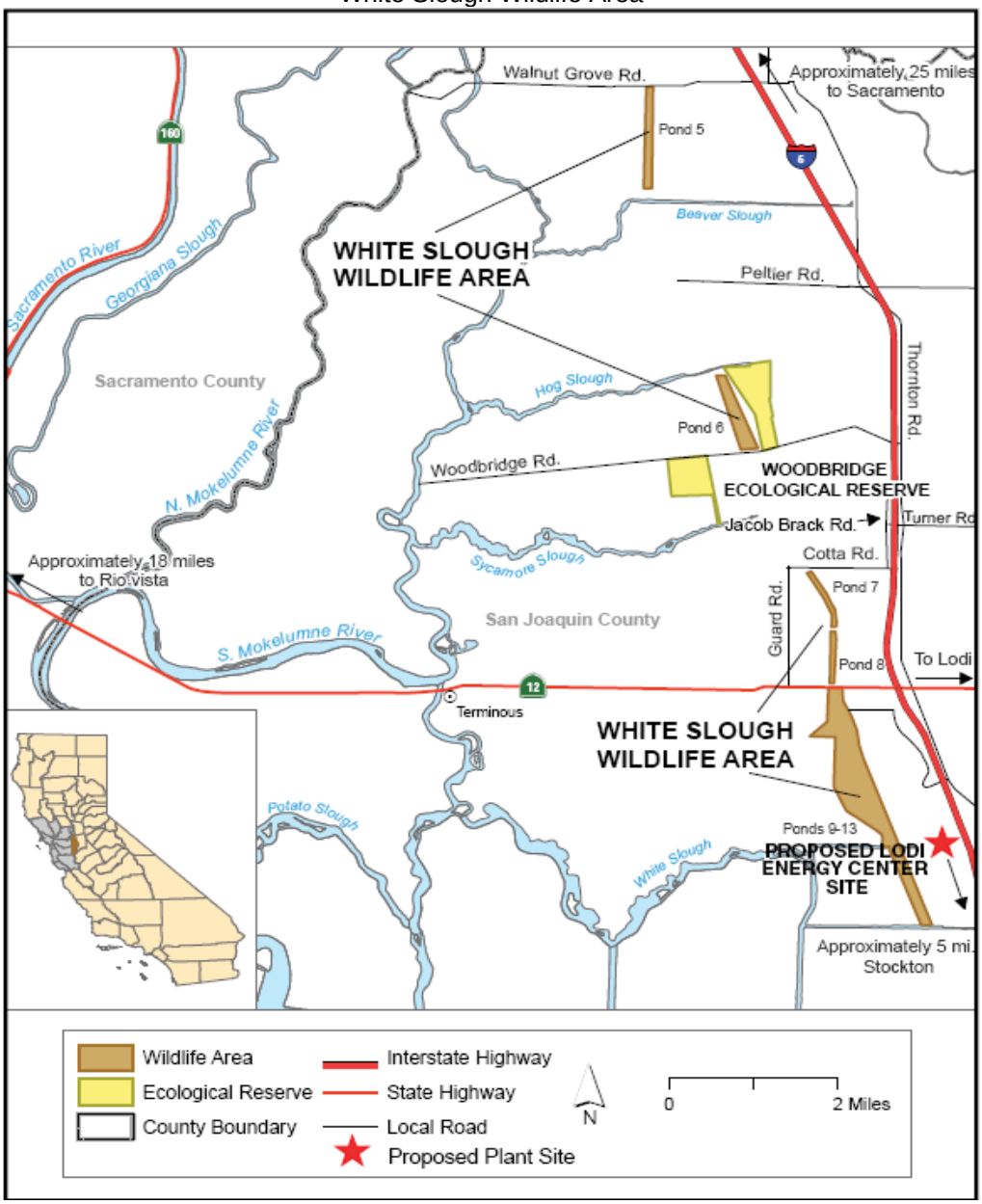
VISUAL RESOURCE - FIGURE 3

White Slough Wildlife Area



Source: Exhibit 300, Visual Resources – Figure 3

During operation, the project has the potential to introduce new night-time light to the property because of safety and security needs. Condition of Certification **VIS-4** minimizes to the greatest extent possible the impacts of operational lighting on the surrounding areas. Condition of Certification **VIS-5** ensures that power plant structures will not be a source of substantial glare that could adversely affect daytime views. With these two Conditions of Certification in place, the evidence establishes that LEC will not result in a substantial new source of light and glare that could adversely affect day-time and night-time views. (Ex. 300, p. 4.12-17.)

The NCPA's STIG plant already exists at this location and, along with its transmission lines and towers, is clearly visible from I-5 and from the White Slough Recreational Area. Consequently, based on the uncontroverted evidence, the addition of the LEC to the site will not create a new source of substantial light or glare affecting day or night time views in the area nor will it have a significant impact on scenic resources, including the county-designated scenic highway, I-5, and the Sacramento-San Joaquin Delta estuary. Still, Condition of Certification **VIS-1**, will require modifications to the brightness, shielding, direction, and use of lighting to ensure that all lighting impacts including any cumulative impact will be less than significant. (Ex. 300, pp. 4.12-7 and 4.12-18.)

The following KOPs were selected for this project:

- ***KOP 1 -*** View from I-5, Southbound, One-Half Mile North of Site
- ***KOP 2 -*** View from White Slough Wildlife Area, One-Half Mile Northwest of Site
- ***KOP 3 -*** View from Eight Mile Road, Two Miles Southwest of Site (Ex. 300, p. 4.12-5.)

The location of the KOPs in relation to the project site are shown on **Visual Resources Figure 5** which includes **KOP 4** and **KOP 5.** We do not discuss **KOP 4** and **KOP 5** because they were not evaluated as KOPs by the parties. (Ex. 300, p. 4.12-9.)

VISUAL RESOURCE - FIGURE 5

Lodi Energy Center – KOP Location Map

Source: Exhibit 300, Visual Resources – Figure 5

KOP 1, View from I-5, Southbound, One-Half Mile North **KOP 1** (**Visual Resources Figure 6**) represents the existing view, a view of moderate visual quality. This view, which already includes the STIG plant, will be seen primarily by I-5 freeway travelers as well as daily commuters and local residents from both north and south directions. (Ex. 300, p. 4.12-10.)

VISUAL RESOURCE - FIGURE 6
Lodi Energy Center – **KOP 1** – Existing View
View from I-5, Southbound One Half Mile Northeast of Site

Source: Exhibit 300, Visual Resources – Figure 6

Visual Sensitivity

The STIG plant is located in the middle of a 4.5 mile stretch of agricultural land on either side of I-5 (from the Route 12 interchange to West Eight Mile Road, which is also a county scenic highway) with few visual interruptions. Agricultural land continues primarily on the west side of I-5 for 36 miles until I-5 merges with the West Side Freeway, one of California's scenic highways because of its agricultural character. However, because the STIG plant has been operating at this location since 1996, viewer concern is moderate. (Ex. 300, p. 4.12-10.)

The record establishes that about 64,000 vehicles per day, traveling both north and south, passed by this site in 2006. These travelers have a relatively unobstructed and extended view of the LEC for at least two miles from both north and south directions. Thus, visibility is moderately high. The number of viewers;

freeway travelers as well as daily commuters, is high. However, the duration of their view is moderately low. The level of viewer exposure at this KOP is moderate. Visual sensitivity for this KOP is moderate. (Ex. 300, p. 4.12-10.)

Visual Change

VISUAL RESOURCE - FIGURE 7
Lodi Energy Center – **KOP 1** Simulated View –
View from I-5, Southbound One-half Mile Northeast of Site

Source: Exhibit 300, Visual Resources – Figure 7

Visual Resources Figure 7 is a visual simulation of the project's structures as viewed from **KOP 1**. The project will introduce to the site 11 new structures, including a 150-foot tall exhaust stack; a 105-foot tall heat recovery steam generator (HRSG); and 70-foot tall combustion turbine generator (CTG); 46-foot tall cooling tower; 40-foot tall water treatment building; 40-foot tall raw/fire water storage tank; 40-foot tall storage tank; 35-foot tall steam turbine; and a 35-foot tall combustion turbine. (Ex. 300, p. 4.12-11.)

The contrast resulting from the introduction of the new elements on the site is low. In terms of form, line, and color, the HRSG at 105 feet high and 150 feet in length and its 150-foot tall exhaust stack combined with the 70-foot tall CTG do not stand out from the existing STIG plant and related structures. At this KOP, the LEC dominates the existing STIG plant but is co-dominant with other structures on the site, including the transmission towers. (Ex. 300, p. 4.12-11.)

Mountains and sky are visible from this KOP. However, as a unit, the LEC and the STIG plant do not block a significant portion of either the mountains or sky. Hence, view blockage is moderately low. (Ex. 300, p. 4.12-11.)

Impact Significance

In this view from **KOP 1**, 230-kV and 500-kV transmission lines and accompanying towers as well as the 49 MW STIG plant are clearly visible. Water treatment ponds and farmland, visible in the foreground, provides visual relief from the industrialized character of the power plant and transmission towers and lines. (Ex. 300, p. 4.12-9.)

The new LEC is somewhat larger in scale than the existing STIG plant, but overall, it is subordinate to the landscape. Consequently, visual change caused by the introduction of the project's structures into the view is considered to be moderately low as a result of low visual contrast, moderate visual scale, and moderately low view blockage. From this KOP visual sensitivity is moderate, and visual change is moderately low. The record establishes that these two ratings result in an impact that is less than significant. (Ex. 300, p. 4.12-11.)

KOP 2, View from White Slough Wildlife Area, One-Half Mile Northwest

Visual Resources Figure 8 is a visual simulation of the existing project as viewed from **KOP 2**. This KOP represents a view recreationists would see from Pond 11 of the White Slough Wildlife Area, approximately one mile northwest of the site. However, the wildlife area consists of 13 ponds stretching in a north-south pattern for about three miles. Pond 13 is located approximately one-half mile from the project site. (Ex. 300, p. 4.12-11.)

VISUAL RESOURCE - FIGURE 8
Lodi Energy Center – **KOP 2** Existing View –
View from White Slough Wildlife Area, One-Half Mile Northwest of the Site

Source: Exhibit 300, Visual Resources – Figure 8

Visual Sensitivity

KOP 2 represents a view of moderate visual quality as seen by recreationists from Pond 11, located approximately one-mile from the site. However, the recreational area continues for approximately three-quarter miles south, ending in Pond 13, which is located about one-half mile from the project site. Recreationists typically are sensitive to their surroundings. Because the White Slough Wildlife Area offers various recreational activities including hunting; fishing; bird watching and butterfly-watching; walking; and hiking, viewer concern ranges from moderate to high. Recreationists who are hunting, fishing, or bird watching are generally focused on the immediate environment, while walkers and hikers tend to pay attention to their surroundings. (Ex. 300, pp. 4.12-12 to 4.12-13.)

From this KOP visibility is low to high, depending on the observer's position on the trail. From Pond 11, visibility is low due to vegetation and brush; from Pond 13, approximately one-half mile from the site, visibility is high due to low-lying grasses and water treatment ponds. (Ex. 300, p. 4.12-13.)

In 2006, according to the Department of Water Resources, 12,000 people or 33 people per day visited the White Slough Wildlife Area. However, the figures are estimates because no daily count of visitors was taken. Based on the counts published by the Department of Water Resources, the number of visitors will be moderately low. The record shows that even during Lodi's annual Sandhill Crane Festival, the number of yearly viewers may rise slightly to approximately 37 people per day. However, for this area, the number of visitors will remain moderately low. (Ex. 300, p. 4.12-13.)

The duration of view from the wildlife area could range from high to low depending on the point on the trail and the activity in which the observers are engaged. Pond 9 is located about two miles from the project site; Pond 13, about one-half mile. Walkers and hikers are likely to have a high duration of view simply because they are likely to be more aware of their surroundings, even stopping to look around. The view of other recreationists—people fishing, bird watching, or hunting—will be low. The record indicates that from this KOP as well as from Pond 13, overall viewer sensitivity is moderate. (Ex. 300, p. 4.12-13.)

Visual Change

VISUAL RESOURCE - FIGURE 9
Lodi Energy Center – **KOP 2** Simulated View –
View from White Slough Wildlife Area, One-Half Mile Northwest of the Site

Source: Exhibit 300, Visual Resources – Figure 9

Visual Resources Figure 9 is a visual simulation of the project's structures as seen from **KOP 2**. From this KOP, which is located approximately one mile from the site, the LEC blends into the landscape and with the existing structures. The line of the new 150-foot exhaust stack blends in with the lines of the telephone poles and transmission towers; and the 105-foot HRSG blends in with the boxy buildings located on the site. In addition, the project's structures are obscured from view by vegetation and trees. It can be seen but does not attract attention. Consequently, at this KOP, contrast is low in terms of form, line, and color. (Ex. 300, p. 4.12-14.)

In addition, at this KOP, the LEC appears to be co-dominant with the existing STIG plant. As a result, view blockage from this KOP is low. From this KOP the new LEC blends into this highly industrial view, with telephone poles and transmission towers as well as the existing STIG plant and related buildings. In addition, the LEC does not add sufficient mass and form to block views. Consequently, from this KOP visual change will be low as a result of low visual contrast, low visual dominance, and low view blockage. (Ex. 300, p. 4.12-14.)

Impact Significance

From **KOP 2** visual sensitivity is moderate; visual change is low. Those two ratings result in a visual impact that is less than significant. However, at Pond 13, which is about one-half mile from the site, viewers will have a clear view of the new project. As a result, from Pond 13, the LEC will appear dominant. The structure's geometric form and prominent horizontal and vertical lines will contrast with the form and lines of the existing STIG plant as well as the flat, agricultural lands and water treatment ponds. In addition, introduction of the LEC to the site blocks a portion of views. Therefore, visual dominance will be high; visual contrast will be high; and view blockage, moderate. Consequently, visual sensitivity is moderate. Visual change is moderately high. The evidence indicates that those two ratings result in a visual impact that, though adverse, is less than significant. (Ex. 300, p. 4.12-14.)

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KOP 3 – View from Eight Mile Road, Two Miles Northwest

Visual Resources Figure 10 is a visual simulation of the view of the existing project from Eight Mile Road, looking toward the project site from approximately two miles south of the site. Eight Mile Road is listed as a Scenic Route by San Joaquin County for its agricultural views. (Ex. 300, p. 4.12-14.)

VISUAL RESOURCE - FIGURE 10
Lodi Energy Center – **KOP 3** Existing View –
View from Eight Mile Road, Two Miles Southwest of the Site

Source: Exhibit 300, Visual Resources – Figure 10

Visual Sensitivity

KOP 3 represents a view of moderately low visual quality. Photographed about two miles from the LEC site, this view is seen primarily by local residents and visitors traveling to and from housing developments and various recreational areas located nearby. Agricultural use of the land is combined with industrial uses: transmission towers and lines extend from the south side of Eight Mile Road (which is identified as a scenic highway in the San Joaquin County General Plan) to the LEC site and coexist with the agricultural plantings. (Ex. 300, p. 4.12-15.)

In this KOP, the field in which the corn is planted, approximately one quarter mile long, is in production at least six months out of the year. When fully grown, corn is approximately six- to seven-feet tall. (Ex. 300, p. 4.12-15.)

Residential and recreational viewers are generally sensitive to the environment. However, the STIG plant and transmission lines were in existence before the housing development was constructed. Hence, the views are familiar to both recreational and residential driver. (Ex. 300, p. 4.12-15.)

Viewer concern is moderately low to moderate for both residents and travelers. From this KOP transmission towers and lines, which coexist with agricultural plantings, dominate the view. Those transmission towers and lines combined with the agricultural use of the land adjoining Eight Mile Road renders the visibility of the LEC site moderately low from this KOP. (Ex. 300, p. 4.12-15.)

The number of viewers from this KOP is moderately high. However, the duration of view is moderately low. The view is seen primarily by drivers and passengers either going back and forth to their residences or to recreational areas located nearby. As a result, motorists are more interested in getting to their destination rather than focusing on the views. Instead, they are focused on the road ahead of them. (Ex. 300, p. 4.12-15.)

From this KOP visual sensitivity is moderate as a result of the moderately low visual quality, moderately low to moderate viewer concern, and moderate viewer exposure. (Ex. 300, p. 4.12-15.)

Visual Change

VISUAL RESOURCE - FIGURE 11

Lodi Energy Center – **KOP 3** Simulated View –
View from Eight Mile Road, Two Miles Southwest of the Site

Source: Exhibit 300, Visual Resources – Figure 11

Visual Resources Figure 11 represents a simulated view of the project's visible structures. From this KOP contrast of the LEC with the existing STIG plant is low. In terms of form, line, and color, the LEC blends with the existing STIG plant. The most noticeable addition to the site, the 150-foot tall exhaust stack blends with the transmission towers that stretch across most of the background in this KOP. (Ex. 300, pp. 4.12-15 to 4.12-16.)

Dominance of the LEC in this KOP is low. The project is located two miles north of this KOP. Consequently, in this KOP grass dominates the foreground; crops dominate the midground; and the background is dominated by trees and transmission towers. When the fields are fallow, about six months during the year, residents and travelers will have a less obstructed view of the project. However, the STIG plant and related transmission towers and wires were in existence before the housing development was built. That fact, combined with the distance of the LEC and transmission lines and towers from the viewers—about two miles—will result in a dominance rating of low to moderately low. (Ex. 300, p. 4.12-16.)

Because the project is located about two miles north of this KOP, it appears subordinate to other elements in the background, including the transmission towers and trees. (Ex. 300, p. 4.12-16.)

Impact Significance

Overall, visual change caused by the introduction of the project's structures into the view is considered to be low as a result of low visual contrast, low visual scale, and low visual blockage. The combination of moderate visual sensitivity and low visual change results in an impact that is less than significant. (Ex. 300, p. 4.12-16.)

2. Visible Vapor Plumes

The record indicates that the combustion turbine generators (CTGs) include a cooling tower which will result in minimal plume formation and less than significant visible plume frequencies. (Ex. 300, pp. 4.12-17 and 4.12-36.)

A visible plume frequency of 20 percent of seasonal (November through April) daylight clear hours was used as a plume impact study threshold trigger. Base load operation with or without duct firing is predicted to produce infrequent visible

gas turbine/HRSG plumes, well below 20 percent of seasonal daylight clear hours. See **Visible Plume Table 1**:

Visible Plume Table 1
Staff-Predicted Hours with HRSG Steam Plumes
Sacramento 1990-1993 Meteorological Data

Case	Available (hr)	Full Load with Duct Firing		Full Load with No Duct Firing	
		Plume (hr)	Percent	Plume (hr)	Percent
All Hours	34,980	7,423	21.22%	4,372	12.50%
Daylight Hours	17,865	1,704	9.54%	982	5.50%
Daylight No Rain No Fog	16,028	517	3.23%	199	1.24%
Seasonal Daylight No Rain No Fog*	6,123	485	7.92%	194	3.17%
Seasonal Daylight Clear**	3,475	259	7.45%	126	3.63%

*Seasonal conditions occur anytime from November through April.
**Available hours based on seasonal daylight clear hours. (Ex. 300, p. 4.12-36.)

Subsequent to the preparation of this table, Applicant revised the turbine design to one that will not include duct firing. The evidence indicates that this new turbine selection will not change the impact determination for the HRSG visible plumes, as the impact remains less than significant due to low visible plume frequency potential for the turbine/HRSG exhaust.

Nevertheless, to ensure that the operation of the LEC will not result in significant visible water vapor plumes, Condition of Certification **VIS-3** will ensure that the cooling tower operation does not create visible plumes that could result in (1) a significant impact on visual quality; that is, substantially degrade the existing visual character or quality of the site and its surroundings; and (2) plume ground-fogging events that will create significant traffic safety impacts on I-5. With these mitigation measures, we find that visible vapor plumes will not cause significant visual impacts. (Ex. 300, p. 4.12-36.)

3. Project Linears

Three transmission poles and the turning pole and lines will be installed on the east side of the property. Two transmission poles and lines will be installed on the north side of the property. The poles are shorter than the existing transmission line corridors already existing on the site. These lines will tie into the existing 230-kV line located west of the project site, adjacent to the STIG plant. (Ex. 300, p. 4.12-16.)

Other linears include a gas pipeline as well as pipelines for sewer and recycled water. The gas pipeline will be constructed underground and will connect the LEC to PG&E's high-pressure natural gas pipeline located 2.5 miles east of the project site. The sewer and recycled-water pipelines will be provided through a utility corridor that links the power plant to the WPCF. (Ex. 300, p. 4.12-16.)

The construction activities will create a temporary visual disturbance along Frontage Road and I-5. We find no long-term visual impacts will occur as a result of the construction of the pipeline and transmission line. (Ex. 300, p. 4.12-16.)

4. Cumulative Impacts and Mitigation

According to the evidentiary record, 21 residential, office, mixed use, institutional, commercial, and industrial projects were in various stages of progress in the city of Lodi in July 2008. All of these projects are located more than four miles from the LEC, except for the improvements at the White Slough WPCF, which is adjacent to the project site. According to the City of Lodi Public Works Department, the improvements to the White Slough WPCF are scheduled to begin in 2010. (Ex. 300, p. 4.12-18.)

In July 2008, 72 projects were processed with the San Joaquin County Building Department. These projects are located in Acampo, Escalon, Farmington, French Camp, Linden, Lockeford, Manteca, Ripon, Stockton, and Tracy. The types of projects included new residential projects, additions, and remodels to existing residences, mobile home renovations, pool construction, administration buildings, barns, a riding arena, storage buildings, warehouses, office building conversions, and institutional projects such as classroom relocation and facilities to house animals. (Ex. 300, p. 4.12-18.)

We find the visual effects of the LEC in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable because the projects are not in the same viewshed as the LEC. Therefore, cumulative impacts will be less than significant.

5. LORS compliance

Both San Joaquin County and the city of Lodi have adopted a general plan which requires projects to avoid adverse visual impacts. The record establishes and,

accordingly, we find that implementation of Conditions of Certification which incorporate various visual impact mitigation measures will result in the LEC project being in compliance with all state, federal, and local LORS.

FINDINGS OF FACT

Based on the evidence of record, we find and conclude as follows:

1. Construction will occur over approximately 24-months.
2. The newly-installed transmission lines will visually blend with the existing transmission structures and wires currently used by the existing STIG plant.
3. Construction activities will not result in a long-term visual degradation.
4. The project's potential impacts on visual resources were analyzed from three defined key observation points (KOP) at different locations surrounding the project site
5. No scenic vistas exist in the **KOP 1**, **KOP 2**, and **KOP 3** viewsheds.
6. LEC will not result in a substantial new source of light and glare that could adversely affect day-time and night- time views.
7. LEC will not have a significant impact on scenic resources, including the county-designated scenic highway, I-5, and the Sacramento-San Joaquin Delta estuary.
8. LEC will not result in a significant visual impact from any of the KOPs.
9. The combustion turbine generators (CTGs) include a cooling tower which will result in minimal plume formation and less than significant visible plume frequencies.
10. The project owner will treat project surfaces with colors that minimize visual intrusion and contrast.
11. No long-term visual impacts will occur as a result of the construction of the pipeline and transmission line.
12. The visual effects of the LEC in combination with past, present, and reasonably foreseeable projects in the area will not be cumulatively considerable because the projects are not in the same viewshed as the LEC.

CONCLUSIONS OF LAW

1. Implementation of the following Conditions of Certification will result in the project causing no significant direct, indirect, or cumulative impacts to visual resources.

2. The project will comply with all applicable laws, ordinances, regulations and standards regarding project design, architecture, landscaping, signage, and other requirements related to Visual Resources.

CONDITIONS OF CERTIFICATION

CONSTRUCTION LIGHTING

VIS-1 The project owner shall ensure that lighting for construction of the power plant is used in a manner that minimizes potential night lighting impacts, as follows:

a. All lighting shall be of minimum necessary brightness consistent with worker safety and security.

b. All fixed position lighting shall be shielded/hooded, and directed downward and toward the area to be illuminated to prevent direct illumination of the night sky and direct light trespass (direct light extending outside the boundaries of the power plant site or the site of construction of ancillary facilities, including any security related boundaries).

c. Wherever feasible and safe and not needed for security, lighting shall be kept off when not in use.

Verification: Within seven days after the first use of construction lighting, the project owner shall notify the CPM that the lighting is ready for inspection. If the CPM requires modifications to the lighting, 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.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the General Conditions section including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be included in the subsequent Monthly Compliance Report.

LANDSCAPE SCREENING

VIS-2 Deleted.

PLUME FORMATION

VIS-3 The project owner shall ensure that the cooling tower is designed and operated as presented to the Energy Commission during the licensing of the Lodi Energy Center Power Plant Project.

Verification: The cooling tower shall be designed and operated to meet the plume fogging frequency curve received into evidence as **Exhibit 5** at the evidentiary hearing held at the Energy Commission on January 5, 2010.

At least 90 days prior to ordering the cooling tower, the project owner shall provide to the CPM for review the final design specifications of the cooling tower to confirm that the fogging frequency curve for the cooling tower cells matches **Exhibit 5**. The project owner shall not order the cooling tower until notified by the CPM that this design requirement has been satisfied.

The project owner shall provide the CPM written documentation demonstrating that the cooling tower has consistently been operated to meet above-specified fogging frequency curve (except as necessary to prevent damage to the cooling tower) in the project's Annual Compliance Report and at anytime as requested by the CPM. If requested by the CPM, the project owner shall provide the requested cooling tower operating data to the CPM at a date determined by the CPM.

If determined that the cooling tower has not operated within the specified design parameters, the project owner shall provide proposed remedial actions for CPM review and approval.

PERMANENT EXTERIOR LIGHTING

VIS-4 To the extent feasible, consistent with safety and security considerations, the project owner shall design and install all permanent exterior lighting such that (a) lamps and reflectors are not visible from beyond the project site, including any off-site security buffer areas; (b) lighting does not cause excessive reflected glare; (c) direct lighting does not illuminate the nighttime sky; (d) illumination of the project and its immediate vicinity is minimized, and (e) the plan complies with local policies and ordinances.

The project owner shall submit to the CPM for review and approval and simultaneously to city of Lodi Community Development Department and San Joaquin County Community Development Department for review and comment a lighting mitigation plan that includes the following:

a) Location and direction of light fixtures shall take the lighting mitigation requirements into account.

b) Lighting design shall consider setbacks of project features from the site boundary to aid in satisfying the lighting mitigation requirements.

c) Lighting shall incorporate fixture hoods/shielding, with light directed downward or toward the area to be illuminated.

d) Light fixtures that are visible from beyond the project boundary shall have cutoff angles that are sufficient to prevent lamps and reflectors from being visible beyond the project boundary, except where necessary for security.

e) All lighting shall be of minimum necessary brightness consistent with operational safety and security.

f) Lights in high illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have (in addition to hoods) switches; timer switches, or motion detectors so that the lights operate only when the area is occupied.

Verification: At least 90 days prior to ordering any permanent exterior lighting, the project owner shall contact the CPM to discuss the documentation required in the lighting mitigation plan.

At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and approval and simultaneously to city of Lodi Community Development Department and San Joaquin County Community Development Department for review and comment a lighting mitigation plan.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a revised plan for review and approval by the CPM.

The project owner shall not order any exterior lighting until receiving CPM approval of the lighting mitigation plan.

Prior to commercial operation, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If after inspection the CPM notifies the project owner that modifications to the lighting are needed, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed and are ready for inspection.

Within 48 hours of receiving a lighting complaint, the project owner shall provide the CPM with a complaint resolution form report as specified in the Compliance General Conditions including a proposal to resolve the complaint, and a schedule for implementation. The project owner shall notify the CPM within 48 hours after completing implementation of the proposal. A copy of the complaint resolution form report shall be submitted to the CPM within 30 days.

SURFACE TREATMENT OF PROJECT STRUCTURES AND BUILDINGS

VIS-5 The project owner shall treat the surfaces of all project structures and buildings on site, including those of the existing power plant, visible to the public such that (a) their colors minimize visual intrusion and contrast by blending with the landscape; (b) their colors and finishes do

not create excessive glare; and (c) their colors and finishes are consistent with local policies and ordinances. The transmission line conductors shall be nonspecular and nonreflective; and the insulators shall be nonreflective and nonrefractive.

Verification: The project owner shall submit for CPM review and approval, a specific surface treatment plan that will satisfy these requirements. The treatment plan shall include:

a. Description of the overall rationale for the proposed surface treatment, including the selection of the proposed colors and finishes

b. List of each major project structure, building, tank, pipe, and wall; the transmission line towers and/or poles; and fencing, specifying the color(s) and finish proposed for each. Colors must be identified by vendor, name, and number; or according to a universal designation system

c. One set of color brochures or color chips showing each proposed color and finish

d. One set of 11" x 17" color photo simulations at life size scale, of the treatment proposed for use on project structures, including structures treated during manufacture as well as those of the existing on-site power plant, from Key Observation Points 1 and 2 (locations shown on **Figure 1** of the Preliminary Staff Assessment)

e. Specific schedule for completion of the treatment

f. Procedure to ensure proper treatment maintenance for the life of the project

The project owner shall not specify to the vendors the treatment of any buildings or structures treated during manufacture, or perform the final treatment on any buildings or structures treated in the field, until the project owner receives notification of approval of the treatment plan by the CPM. Subsequent modifications to the treatment plan are prohibited without CPM approval.

At least 90 days prior to specifying to the vendor the colors and finishes of the first structures or buildings that are surface treated during manufacture, the project owner shall submit the proposed treatment plan to the CPM for review and approval and simultaneously to the city of Lodi Community Development Department and San Joaquin County Community Development Department for review and comment.

If the CPM determines that the plan requires revision, the project owner shall provide to the CPM a plan with the specified revisions for review and approval by the CPM before any treatment is applied. Any modifications to the treatment plan must be submitted to the CPM for review and approval.

Prior to the start of commercial operation, the project owner shall notify the CPM that surface treatment of all listed structures and buildings has been completed

and they are ready for inspection and shall submit one set of electronic color photographs from the same key observation points identified in (d) above.

The project owner shall provide a status report regarding surface treatment maintenance in the Annual Compliance Report. The report shall specify (a): the condition of the surfaces of all structures and buildings at the end of the reporting year; (b) maintenance activities that occurred during the reporting year; and (c) the schedule of maintenance activities for the next year.

Appendix A: *Exhibit List*

Appendix B: *Laws, Ordinances, Regulations, and Standards*

Appendix C: *Proof of Service List*

APPENDICES

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

APPLICATION FOR CERTIFICATION FOR THE

LODI ENERGY CENTER

DOCKET NO. 08-AFC-10

EXHIBIT LIST

APPLICANT'S EXHIBITS

EXHIBIT 1 Application for Certification Volume I & II; docketed 9-10-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 2 Table DR71-1 (Cooling Tower Parameters); docketed 12-21-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 3 Figure Identifying the LEC General Arrangement; docketed 12-18-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 4 Letter from the City of Lodi Regarding Removal of Condition of Certification **VIS-2**; docketed 12-17-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 5 Fogging Frequency Curve; docketed 12-16-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 6 NCPA's Comments on the Final Determination of Compliance; dated 12-14-2009, docketed 12-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 7 Preliminary Endangerment Assessment; dated 11-02-2009, docketed 12-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 8 Preliminary Endangerment Workplan; dated 11-02-2009, docketed 12-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 9 Letter from Department of Toxic Substances Control (DTSC) Determination of No Further Action for the LEC Site; dated 12-10-2009, docketed 12-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 10 NCPA's Comments on the Staff Assessment; docketed 12-10-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 11 San Joaquin Valley Unified Air Pollution Control District's Final Determination of Compliance; docketed 11-19-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 12 NCPA's Withdrawal of PSD; docketed 11-13-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 13 San Joaquin Council of Governments Minute Resolution 09-03; dated 10-26-2009, docketed 10-28-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 14 USFWS Response to NCPA's Request for Project Inclusion under the Intra-Service Biological & Conference Opinion on Issuance of a Section 10(a)(1)(B); dated 10-22-2009, docketed 10-26-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 15 United States Environmental Protection Agency (EPA) Public Notice of Intent to Issue UIC Permit; dated 1-16-2009, docketed 10-19-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 16 Department of Toxic Substances Control's Approval of Final Workplan for the Preliminary Endangerment Assessment; docketed 9-03-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 17 NCPA's Lodi Energy Center BACT: Limit for CO; docketed 8-24-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 18 Supplement D Air Quality Modeling Files; docketed 7-28-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 19 Supplement D Changes to Equipment and Project Fenceline; docketed 7-27-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 20 Comments from EPA Region 9 on the LEC PDOC; dated 6-02-2009, docketed 6-03-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 21 Applicant Data Responses Set 6 – Responses to CEC Request 1 & 2; docketed 5-22-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 22 NCPA's Comments on the PDOC; dated 5-18-2009, docketed 5-20-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 23 Data Response Set 5, Revised Responses to CEC Staff Data Requests 75 & 78, docketed 4-17-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 24 Meeting Agenda – NCPA Voluntary Cleanup Agreement; docketed 4-16-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 25 San Joaquin Valley Unified Air Pollution Control District's Preliminary Determination of Compliance; docketed 4-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 26 Objections by NCPA to CEC's Data Request Set 3; docketed 4-15-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 27 Applicant Data Responses Set 4; docketed 4-14-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 28 USACE Finding of No Water of the United States; dated 3-19-2009, docketed 4-02-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 29 Data Response Set 3, Responses to CEC Staff Workshop Inquiries 3 through 27; docketed 3-24-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 30 Supplement C – Natural Gas Supply Line Route Change; docketed 3-19-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 31 Data Responses Set 1C, Data Request 52 and 56; docketed 3-02-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 32 NCPA's Data Response Set 1B to Staff Data Request 13 & 37; docketed 2-19-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 33 San Joaquin County Environmental Health Department (EHD) Comments Regarding Notice of Public Site Visit; docketed 2-17-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 34 NCPA's Data Response Set 2, Responses to CEC Staff Data Requests 56B-74; docketed 2-16-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 35 Data Response Set 1A (1 through 56); docketed 2-05-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 36 Letter Regarding AFC for the NCPA Lecture Demonstration of Compliance with District Rule 4703; docketed 1-14-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 37 Wetland Concerns – Technical Memorandum; docketed 1-12-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 38 Comment of Lodi Unified School District Re: Lodi Energy Center Project; docketed 12-17-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 39 San Joaquin County Community Development Letter; docketed 12-08-2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 40 USACE Finding of No Discharge to Waters of the US; dated 10-28-2009, docketed 11-03-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 41 Supplement B – Data Adequacy Response; docketed 10-24-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 42 SJMSCP Response to Lead Agency Advisory Agency Notice to SJCOG, Inc.; docketed 10-10-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 43 Permit Application for Class 1 Underground Injection Well; docketed 10-10-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 44 Email re San Joaquin County Environmental Health Department; docketed 9-30-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 45 Compliance Statement; docketed 9-26-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 46 Air Quality Modeling Files; docketed 9-10-2008. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 47 Email message from Nancy Matthews to Brewster Birdsall and Matthew Layton, transmitting CO emissions calculations, dated August 28, 2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 48 EPA Office of Enforcement and Compliance Assurance Guidance letter to Regions regarding Guidance an Enforceability Requirements for Limiting Potential to Emit, January 25, 1995. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 49 NCPA Testimony Package, docketed December 22, 2009. Sponsored by Applicant, and admitted into evidence on January 5, 2010.

EXHIBIT 50 San Joaquin Valley Air Pollution Control District - Final Determination of Compliance, dated January 22, 2010. Sponsored by Applicant, and admitted into evidence on January 28, 2010.

EXHIBIT 51 San Joaquin Valley Air Pollution Control District, 2008 PM2.5 Plan – Adopted April 30, 2008. Sponsored by Applicant, and admitted into evidence on January 28, 2010.

EXHIBIT 52 CH2MHILL Geochronological Investigations of the Proposed Lodi Energy Center Site. Dated January 27, 2010. Sponsored by Applicant, and admitted into evidence on January 28, 2010.

ENERGY COMMISSION STAFF'S EXHIBITS

EXHIBIT 300 Final Staff Assessment for the Lodi Energy Center Project, dated December 24, 2009, docketed December 24, 2009. Sponsored by Staff; and received into evidence on January 5, 2010.

EXHIBIT 301 Changes to Conditions of Certification accepted by Staff, dated December 24, 2009, docketed December 24, 2009. Sponsored by Staff; and received into evidence on January 5, 2010.

EXHIBIT 302 Changes to Conditions of Certification not accepted by Staff, dated December 24, 2009, docketed December 24, 2009. Sponsored by Staff; and received into evidence on January 5, 2010.

EXHIBIT 303 Addendum to Staff Assessment; Revised Air Quality and Cultural Resources Testimony, dated January 2010. Sponsored by Staff; and received into evidence on January 28, 2010.

AIR QUALITY

Applicable LORS	***Description***
Federal	**U.S. Environmental Protection Agency**
Federal Clean Air Act Amendments of 1990, Title 40 Code of Federal Regulations (CFR) Part 50	National Ambient Air Quality Standards (NAAQS).
Clean Air Act (CAA) § 160-169A and implementing regulations, Title 42 United State Code (USC) §7470-7491 40 CFR 51 & 52 (Prevention of Significant Deterioration Program)	Requires prevention of significant deterioration (PSD) review and facility permitting for construction of new or modified major stationary sources of pollutants that occur at ambient concentrations that attain the NAAQS. The applicant expects that operation of the facility would not trigger the need for a PSD permit, because annual emissions from the proposed LEC project would be below the trigger levels for a new major stationary source (exceeding 100 tons per year) (NCPA2009b). The PSD program is within the jurisdiction of the U.S. EPA.
CAA §171-193, 42 USC §7501 et seq. (New Source Review)	Requires new source review (NSR) facility permitting for construction or modification of specified stationary sources. NSR applies to sources of designated nonattainment pollutants. This requirement is addressed through SJVAPCD Rule 2201.

Applicable LORS	***Description***
40 CFR 60, Subpart KKKK	Standards of Performance for Stationary Combustion Turbines, New Source Performance Standard (NSPS). Requires the proposed combined cycle system to achieve 15 parts per million (ppm) NOx and achieve fuel sulfur standards.
40 CFR 60, Subpart Dc	Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units. Requires monitoring of the natural gas fuel source for the proposed auxiliary boiler.
CAA §401 (Title IV), 42 USC §7651(Acid Rain Program)	Requires reductions in NOx and SO_2 emissions, implemented through the Title V program. This program is within the jurisdiction of the SJVAPCD with U.S. EPA oversight [SJVAPCD Rule 2540].
CAA §501 (Title V), 42 USC §7661(Federal Operating Permits Program)	Establishes comprehensive federal operating permit program for major stationary sources. Application required within one year following start of operation. This program is within the jurisdiction of the SJVAPCD with U.S. EPA oversight [SJVAPCD Rule 2520].
State	**California Air Resources Board and Energy Commission**
California Health & Safety Code (H&SC) §41700 (Nuisance Regulation)	Prohibits discharge of such quantities of air contaminants that cause injury, detriment, nuisance, or annoyance.
H&SC §40910-40930	Permitting of source needs to be consistent with approved clean air plan. The SJVAPCD New Source Review program is consistent with regional air quality management plans.
California Public Resources Code §25523(a); 20 CCR §1752, 2300-2309 (CEC & CARB Memorandum of Understanding)	Requires that Energy Commission decision on AFC include requirements to assure protection of environmental quality.
California Code of Regulations for Off-Road Diesel-Fueled Fleets (13 CCR §2449, et seq.)	General Requirements for In-Use Off-Road Diesel-Fueled Fleets – Requires owners and operators of in-use (existing) off-road diesel equipment and vehicles to begin reporting fleet characteristics to CARB in 2009 and meet fleet emissions targets for diesel particulate matter and NOx in 2010.
Airborne Toxic Control Measure for Idling (ATCM, 13 CCR §2485)	ATCM to Limit Diesel-Fueled Commercial Motor Vehicle Idling – Generally prohibits idling longer than five minutes for diesel-fueled commercial motor vehicles.

Applicable LORS	***Description***
Local	**San Joaquin Valley Air Pollution Control District**
SJVAPCD Rule 2201 (New and Modified Stationary Sources)	Establishes the pre-construction review requirements for new, modified or relocated emission sources, in conformance with NSR to ensure that these facilities do not interfere with progress in attainment of the ambient air quality standards and that future economic growth in the San Joaquin Valley is not unnecessarily restricted. Establishes the requirement to prepare a Preliminary Determination of Compliance (PDOC) and Final Determination of Compliance (FDOC) during District review of an application for a power plant. This regulation establishes Best Available Control Technology (BACT) and emission offset requirements. The LEC project net emission increase of NOx would exceed the federal major modification threshold (40 CFR 51.165). The SJVAPCD classifies the project as a Federal Major Modification for NOx, and public notification requirements are triggered (SJVAPCD 2010a).
SJVAPCD Rule 2520 (Federally Mandated Operating Permits)	Establishes the permit application and compliance requirements for the federal Title V federal permit program. LEC must submit an application to modify the existing Title V permit.
SJVAPCD Rule 2540 (Acid Rain Program)	Implements the federal Title IV Acid Rain Program, which requires subject facilities to obtain emission allowances for SOx emissions and requires fuel sampling and/or continuous monitoring to determine SOx and NOx emissions.
SJVAPCD Regulation IV (Prohibitions)	Sets forth the restrictions for visible emissions, odor nuisance, various air emissions, and fuel contaminants. Regulation IV incorporates the NSPS provisions of 40 CFR 60, including standards for stationary combustion turbines (Subpart KKKK). These rules limit emissions of NOx, VOC, CO, particulate matter, and sulfur compounds.
SJVAPCD Rules 4306 and 4320 (Boilers, Steam Generators and Process Heaters)	Limits NOx and CO emissions from boilers, steam generator and process heaters. The proposed auxiliary boiler is subject to NOx limit of 9 parts per million by volume (ppmv) and CO limit of 400 ppmv.
SJVAPCD Rule 4703 (Stationary Gas Turbines)	Limits the proposed stationary gas turbine emissions of NOx to 5 ppmv over a 3-hour averaging period and CO to 25 ppmv. Provided certain demonstrations are made, the emission limits do not apply during startup, shutdown, or reduced load periods (defined as “transitional operation periods”).
SJVAPCD Regulation VIII (Fugitive PM10 Prohibition)	Requires control of fugitive PM10 emissions from various sources.

Greenhouse Gas

Applicable Law	Description
State	
California Global Warming Solutions Act of 2006, AB 32 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)	California Global Warming Solutions Act of 2006. This act requires the California Air Resources Board (ARB) to enact standards that will reduce GHG emissions to 1990 levels. Electricity production facilities will be regulated by the ARB.
California Code of Regulations, tit. 17, Subchapter 10, Article 2, sections 95100 et. seq.	ARB regulations implementing mandatory GHG emissions reporting as part of the California Global Warming Solutions Act of 2006 (Stats. 2006; Chapter 488; Health and Safety Code sections 38500 et seq.)
Title 20, California Code of Regulations, section 2900 et seq.; CPUC Decision D0701039 in proceeding R0604009	The regulations prohibit utilities from entering into long-term contracts with any base load facility that does not meet a greenhouse gas emission standard of 0.5 metric tonnes carbon dioxide per megawatt-hour (0.5 MTCO2/MWh) or 1,100 pounds carbon dioxide per megawatt-hour (1,100 lb CO_2/MWh)

ALTERNATIVES

California Environmental Quality Act (CEQA)

Energy Commission staff is required by agency regulations to examine the "feasibility of available site and facility alternatives to the Applicant's proposal which substantially lessen the significant adverse impacts of the proposal on the environment." (Cal. Code Regs., tit. 20, § 1765.)

The "Guidelines for Implementation of the California Environmental Quality Act," Title 14, California Code of Regulations, Section 15126.6(a), requires 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 analysis should identify and compare the impacts of the various alternatives, but analysis of alternatives need not be in as much detail as the analysis of the proposed project.

The range of alternatives is governed by the "rule of reason," which requires consideration only of those alternatives necessary to permit informed decision making and public participation. CEQA states that an environmental document does not have to consider an alternative if its effect cannot be reasonably ascertained and if its implementation is remote and speculative. (Cal. Code Regs., tit. 14, § 15126.6[f][3].) However, if the range of alternatives is defined too narrowly, the analysis may be inadequate. (*City of Santee v. County of San Diego* [4th District, 1989] 214 Cal. App. 3d 1438.)

BIOLOGICAL RESOURCES

Applicable LORS	***Description***
Federal	
Endangered Species Act (Title 16, United States Code, section 1531 *et seq*.; Title 50, Code of Federal Regulations, part 17.1 *et seq*.)	Designates and provides for the protection of federally listed threatened and endangered plant and animal species, and their designated critical habitat. The administering agency is USFWS.
Migratory Bird Treaty Act (Title 16, United States Code, sections 703-711)	Prohibits the take or possession of any migratory nongame bird (or any part of such migratory nongame bird), including nests with viable eggs. The administering agency is USFWS.
Clean Water Act (Title 33, United States Code, sections 1251 through 1376, and Code of Federal Regulations, part 30, section 330.5(a)(26)))	Requires the permitting and monitoring of all discharges to surface water bodies. Section 404 requires a permit from the USACE for a discharge from dredged or fill materials into waters of the U.S., including wetlands. Section 401 requires a permit from a Regional Water Quality Control Board (RWQCB) for the discharge of pollutants. By federal law, every applicant for a federal permit or license for an activity that may result in a discharge into a California water body, including wetlands, must request state certification that the proposed activity will not violate state and federal water quality standards.
State	
California Endangered Species Act (Fish and Game Code, sections 2050 et seq.)	Protects California's rare, threatened, and endangered species.
California Code of Regulations (Title 14, sections 670.2 and 670.5)	Lists the plants and animals that are classified as rare, threatened, or endangered in California.
Fully Protected Species (Fish and Game Code, sections 3511, 4700, 5050, and 5515)	Designates certain species as fully protected and prohibits take of such species or their habitat. The administering agency is CDFG.
California Native Plant Protection Act of 1977 (Fish and Game Code, section 1900 *et seq*.)	Designates rare, threatened, and endangered plants in California, prohibits the taking of listed plants. The administering agency is CDFG.
Nest or Eggs (Fish and Game Code, section 3503)	Prohibits take, possession, or needless destruction of the nest or eggs of any bird. The administering agency is CDFG.
Migratory Birds (Fish and Game Code, section 3513)	Prohibits take or possession of any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird. The administering

Applicable LORS	***Description***
	agency is CDFG.
Significant Natural Areas (Fish and Game Code, section 1930 *et seq*.)	Designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.
Local	
San Joaquin County Multi-Species Habitat Conservation and Open Space Plan	Outlines conservation measures for both federally listed and state listed special-status species and significant natural community types in San Joaquin County. SJCOG, Inc. administers the plan.
San Joaquin County General Plan	Protects significant oak groves, heritage trees, native oak trees, and riparian habitats in San Joaquin County.
Protection of City Trees, Shrubs, and Plants (City of Lodi Ordinance 1652)	Prohibits the removal or damage to any trees, shrubs, and plants which are located on City property or within the public right of way without prior authorization.

CULTURAL RESOURCES

Applicable LORS	***Description***
State	
Public Resources Code 5097.98(b) and (e)	Requires a landowner on whose property Native American human remains are found to limit further development activity in the vicinity until he/she confers with the Native American Heritage Commission-identified Most Likely Descendents (MLDs) to consider treatment options. In the absence of MLDs or of a treatment acceptable to all parties, the landowner is required to reinter the remains elsewhere on the property in a location not subject to further disturbance.
California Health and Safety Code, Section 7050.5	Makes it a misdemeanor to disturb or remove human remains found outside a cemetery. This code also requires a project owner to halt construction if human remains are discovered and to contact the county coroner.
Local	
San Joaquin County General Plan (San Joaquin County 1992)	Heritage Resources, Objective 1: To protect San Joaquin County's valuable architectural, historical, archaeological and cultural resources; Policies: • The County will encourage efforts, both public and private, to preserve its historical and cultural heritage. • The County will identify and protect from destruction significant archaeological and historical resources. • The County will not knowingly destroy any significant cultural resources. • The County will support historic preservation.
City of Lodi General Plan (City of Lodi 1991)	Urban Design and Cultural Resources Element, Goal J: To preserve and enhance Lodi's historical heritage; Policies: The City will develop a historic preservation ordinance in coordination with the State Historic Preservation Office. The City will work with property owners to list historic structures as State Landmarks or on the National Register of Historic Places. The City will consult with the California Archeological Inventory, Central California Information Center, at Stanislaus State University, on any project that could have an impact on cultural resources and implement the center's recommended mitigation measures.

FACILITY DESIGN

Applicable LORS	***Description***
Federal	Title 29 Code of Federal Regulations (CFR), Part 1910, Occupational Safety and Health standards
State	2007 California Building Standards Code (CBSC) (also known as Title 24, California Code of Regulations)
Local	San Joaquin County regulations and ordinances city of Lodi regulations and ordinances
General	American National Standards Institute (ANSI) American Society of Mechanical Engineers (ASME) American Welding Society (AWS) American Society for Testing and Materials (ASTM)

GEOLOGY AND PALEONTOLOGY

Applicable LORS	***Description***
Federal	
	The proposed LEC project is not located on federal land. There are no federal LORS for geologic hazards and resources for this site.
State	
California Building Code (2007)	The CBC (2007) includes a series of standards that are used in project investigation, design, and construction (including grading and erosion control). The CBC has adopted provisions in the International Building Code (ICC 2006).
Alquist-Priolo Earthquake Fault Zoning Act, Public Resources Code (PRC), sections 2621–2630	The act mitigates against surface fault rupture of known active faults beneath occupied structures. Requires disclosure to potential buyers of existing real estate and a 50-foot setback for new occupied buildings. The project site is not located within a designated Alquist-Priolo Fault Zone.
The Seismic Hazards Mapping Act, PRC sections 2690–2699	Areas are identified that are subject to the effects of strong ground shaking, such as liquefaction, landslides, tsunamis, and seiches.
PRC, Chapter 1.7, sections 5097.5 and 30244	The code regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.
Warren-Alquist Act, PRC, sections 25527 and 25550.5(i)	The Warren-Alquist Act requires the Energy Commission to “give the greatest consideration to the need for protecting areas of critical environmental concern, including, but not limited to, unique and irreplaceable scientific, scenic, and educational wildlife habitats; unique historical, archaeological, and cultural sites…” With respect to paleontologic resources, the Energy Commission relies on guidelines from the Society for Vertebrate Paleontology (SVP), indicated below.
California Environmental Quality Act (CEQA), PRC sections 15000 et seq., Appendix G	The act mandates that public and private entities identify the potential impacts on the environment during proposed activities. Appendix G outlines the requirements for compliance with CEQA and provides a definition of significant impacts on a fossil site.
Society for Vertebrate Paleontology (SVP), 1995	The “Measures for Assessment and Mitigation of Adverse Impacts to Non-Renewable Paleontological Resources: Standard Procedures” is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. The measures were adopted in October 1995 by the SVP, a national organization of professional scientists.
Local	
2007 California Building Code	These codes address the excavation, grading, and earthwork construction, not limited to construction relating to earthquake safety and seismic activity hazards.

Applicable LORS	***Description***
County of San Joaquin General Plan (1992),	The section requires a general plan for long-term development. Under this plan, paleontological resources shall be protected and preserved.

HAZARDOUS MATERIALS MANAGEMENT

Applicable LORS	***Description***
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 that store, handle, or produce significant quantities of extremely hazardous materials.
The CAA section on risk management plans (42 USC §112(r)	Requires states to implement a comprehensive system informing local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531, et seq.
49 CFR 172.800	The U.S. Department of Transportation (DOT) requirement that suppliers of hazardous materials prepare and implement security plans.
49 CFR Part 1572, Subparts A and B	Requires suppliers of hazardous materials to ensure that all their hazardous materials drivers are in compliance with personnel background security checks.
The Clean Water Act (CWA) (40 CFR 112)	Aims to prevent the discharge or threat of discharge of oil into navigable waters or adjoining shorelines. Requires a written spill prevention, control, and countermeasures (SPCC) plan to be prepared for facilities that store oil that could leak into navigable waters.
Title 49, Code of Federal Regulations, Part 190	Outlines gas pipeline safety program procedures.
Title 49, Code of Federal Regulations, Part 191	Addresses 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 DOT of any reportable incident by telephone and then submit a written report within 30 days.
Title 49, Code of Federal Regulations, Part 192	Addresses transportation of natural and other gas by pipeline and minimum federal safety standards, specifies minimum safety requirements for pipelines including material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use that characterize the surrounding land. This part also contains regulations governing pipeline construction (which must be followed for Class 2 and Class 3 pipelines) and the requirements for preparing a pipeline integrity management program.

Applicable LORS	***Description***
Federal Register (6 CFR Part 27) interim final rule	A regulation of the U.S. Department of Homeland Security that requires facilities that use or store certain hazardous materials to submit information to the department so that a vulnerability assessment can be conducted to determine what certain specified security measures shall be implemented.
State	
Title 8, California Code of Regulations, section 5189	Requires facility owners to develop and implement effective safety management plans that ensure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the Risk Management Plan (RMP) process.
Title 8, California Code of Regulations, section 458 and sections 500 to 515	Sets forth requirements for the design, construction, and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code, the American National Standards Institute (ANSI) K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia.
California Health and Safety Code, section 25531 to 25543.4	The California Accidental Release Program (CalARP) requires the preparation of a Risk Management Plan (RMP) and off-site consequence analysis (OCA) and submittal to the local Certified Unified Program Agency for approval.
California Health and Safety Code, section 41700	Requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
California Safe Drinking Water and Toxic Enforcement Act (Proposition 65)	Prevents certain chemicals that cause cancer and reproductive toxicity from being discharged into sources of drinking water.
California Public Utilities Commission General Order 112-E and 58-A	Contains standards for gas piping construction and service.
Local	
San Joaquin County CUPA Program (Health and Safety Code Section 25180; San Joaquin County	To consolidate, coordinate and make consistent the administrative requirements, permitting, inspection, activities, and fees for hazardous waste and hazardous materials programs in each jurisdiction.

Applicable LORS	***Description***
Board of Supervisors Resolution R-95-760)	
San Joaquin County Environmental Health Emergency Response Program (California Health and Safety Code Sections 25200 et seq. and 101040)	Interagency emergency response team guidelines for incidents involving hazardous material spills or releases, including health assessments to evaluate actual or potential environmental contamination and/or human exposure, recommendations for short and long-term cleanup, and oversight of the cleanup activities performed by the responsible parties or environmental assessment firms. The San Joaquin County Environmental Health Dept. was approved by the State as the CUPA for San Joaquin County in January of 1997 but the SJC Office of Emergency Services is a Participating Agency (PA) administering the Hazardous Material Release Response Plan and Inventories and the Accidental Release Prevention (Cal-ARP) programs.

The Certified Unified Program Agency (CUPA) with the responsibility to review Risk Management Plans (RMPs) and Hazardous Materials Business Plans (HMBPs) is the San Joaquin County Office of Emergency Services (SJCOES). With regard to seismic safety issues, the site is located in Seismic Risk Zone 4. Construction and design of buildings and vessels storing hazardous materials will meet the seismic requirements of the California Code of Regulations Title 24 and the 2007 California Building Code (LEC 2008a, Section 2.4.1.2).

LAND USE

Applicable LORS	*Description*
Federal	None
State	
	California Land Conservation Act (Gov. Code § 51200-51297.4)
Local	
	City of Lodi General Plan and Title 17 Zoning San Joaquin County General Plan and Title 9 Zoning Conservation and Open-Space Plan; San Joaquin County Council of Governments Airport Land Use Compatibility Plan (ALUCP)

Project Compliance with Adopted Applicable Land Use LORS

LORS	Goals/Objectives/Policy	Consistency Determination
City of Lodi General Plan Section 3 Land Use and Growth Management Element	Goal A. The City shall ensure the maintenance of ample buffers between incompatible land uses. Goal B: To preserve agricultural land surrounding Lodi and to discourage premature development of agricultural land with non-agricultural uses, while providing for urban needs.	The power plant would be located on an existing industrial site and adjacent to the WPCF and the STIG Plant, which are compatible uses. As a result, it would not affect the existing buffers. The project would not affect the city's ability to preserve agricultural land surrounding the city.
City of Lodi General Plan Section 3 Land Use and Growth Management Element	1. The City shall encourage the preservation of agricultural land surrounding the City. 5. The City shall promote land use decisions within the designated urbanized area that allow and encourage the continuation of viable agricultural activity around the city. 6. The City shall encourage San Joaquin County to retain agricultural	The project would not affect the city's ability to encourage and preserve agriculture surrounding the city. The power plant has been sited adjacent to other existing industrial development (i.e. the STIG plant and the WPCF) to separate it from the nearby agricultural land uses, and the gas pipeline has been sited to minimize impacts to agricultural uses by following agricultural field boundaries to the extent possible. The project would not affect the city's ability to encourage the

LORS	Goals/Objectives/Policy	Consistency Determination
	uses on lands adjacent to the City. Goal C3. The City shall promote the development of clean industries that do not create problems or pose health risks associated with water and air pollution or potential leaks or spills.	county to retain agricultural uses on lands adjacent to the city. Refer to the **WATER RESOURCES, AIR QUALITY**, and **HAZARDOUS MATERIALS** sections for discussions of the potential effects and measures to minimize those effects.
	Goal H: To provide adequate land for development of public and quasi-public uses to support existing and new residential, commercial, and industrial land uses. 3. The City shall designate adequate appropriately located land for quasi-public uses such as hospital, churches, private school facilities, and utility uses.	The project would be consistent with this goal. The power plant would be sited on land that allows utility uses. In addition, the power plant would be located adjacent to other industrial, and compatible, land uses.
1991 City of Lodi General Plan land use designation:PQP Public/Quasi-Public	This designation provides for government-owned facilities, public and private schools, and quasi-public uses such as hospitals and churches.	The proposed LEC would be consistent with the City of Lodi General Plan.
Lodi Municipal Code Title 15 Buildings and Construction, Chapter 15.60 Flood Damage Prevention	City of Lodi General Plan (1991) states that the city shall only permit development in the 100-year floodplain consistent with Federal Emergency Management Agency (FEMA) regulations.	The project shall follow the City of Lodi requirements for construction within a special flood hazard zone, as stated in proposed Condition of Certification **LAND-1**. Adherence to the city's floodplain development requirements will render the project consistent with FEMA requirements.
Title 17 Zoning, Chapter 17.51 FP Floodplain District	This chapter establishes specific restrictions on the use of those properties or portions of properties which are situated within the city and within the Mokelumne River floodplain and in the special flood hazard areas as defined in this chapter. Special regulation is necessary for the protection of the public health, safety and general welfare, and of property and improvements both within and without the areas described in subsection A of this section from hazards and damage resulting from	The project shall follow the City of Lodi requirements for construction within a special flood hazard zone, as stated in proposed Condition of Certification **LAND-1**. Adherence to the city's floodplain development requirements will render the project consistent with FEMA requirements.

LORS	Goals/Objectives/Policy	Consistency Determination
	floodwaters and to promote the open space conservation element policies of the city's general plan.	
City of Lodi Municipal Code Title 17 Zoning and Subdivision Ordinance	Table 2-8 in Chapter 17.26 (Special Purpose Zoning Districts) of the Lodi Municipal Code Title 17 Zoning and Subdivision Ordinance shows that power plants and gas pipelines (Utility Facility) are allowable uses in the zoning designation.	The proposed LEC would be consistent with the city of Lodi zoning.
San Joaquin County General Plan ***Chapter VI Resources*** **Agricultural Lands Objectives**	1. To protect agricultural lands needed for the continuation of commercial agricultural enterprises, small-scale farming operations, and the preservation of open space. 3. To minimize the impact on agriculture in the transition of agricultural areas to urban development.	The project would not affect the county's ability to protect agricultural lands from urban development. The project would not affect the county's ability to protect agricultural lands from urban development.
San Joaquin County General Plan ***Chapter VI Resources*** **Agricultural Policies**	5. Agricultural areas shall be used principally for crop production, ranching, and grazing. All agricultural support activities and non-farm uses shall be compatible with agricultural operations and shall satisfy the following criteria: (a) The use requires a location in an agricultural area because of unusual site area requirements, operational characteristics, resource orientation, or because it is providing a service to the surrounding agricultural area; (b) The operational characteristics of the use will not have a detrimental impact on the management or use of surrounding agricultural properties; (c) The use will be sited to minimize any disruption to the surrounding agricultural operations; and (d) The use will not significantly impact transportation facilities, increase air pollution, or increase	The gas pipeline would be sited to allow for a connection to an existing gas pipeline. In addition, the gas pipeline would follow an existing gas pipeline route that is currently aligned with agricultural field boundaries to the extent possible. Operation of the power plant would not affect agricultural operations. Operation of the gas pipeline would not result in impacts to the agricultural parcels it would cross. Siting of the power plant would not affect agricultural operations. Construction of the gas pipeline would result in only temporary impacts to the agricultural parcels it would cross. The project would have no effect on transportation facilities. Refer to the Air Quality section for a

LORS	Goals/Objectives/Policy	Consistency Determination
	fuel consumption.	discussion of project air emissions and measures to minimize potential air quality impacts.
	8. To protect agricultural land, non-agricultural uses which are allowed in the agricultural areas should be clustered, and strip or scattered development should be prohibited. 10. Non-agricultural land uses at the edge of agricultural areas shall incorporate adequate buffers (e.g., fences and setbacks) to prevent conflicts with adjoining agricultural operations.	Siting the power plant adjacent to the existing wastewater treatment plant and mosquito and vector control district meets this requirement. The power plant site would be fenced, and would be adjacent to other industrial land uses.
San Joaquin Council of Governments Airport Land Use Commission (ALUC)	California state statutes require every county with an airport served by one or more commercial air carriers to have an Airport Land Use Commission (ALUC). For San Joaquin County, the San Joaquin Council of Governments (SJCOG) Board of Directors is the designated ALUC. State statutes require each County's ALUC to prepare an Airport Land Use Compatibility Plan (ALUCP). The ALUCP for San Joaquin County was prepared and adopted in 1983, was revised and updated in 1993, and is being updated as of January 2008. An ALUCP provides for the orderly growth of an airport including the area surrounding the airport referred to as the respective airport's "Area of Influence". Its primary function is to safeguard the general welfare of people residing within the vicinity of the airport and the public in general.	Because the proposed LEC site is within 20,000 feet of the Kingdon Airpark, an FAA Notice Criteria evaluation was performed for the 150-foot-tall exhaust stack. Based on the results of this evaluation, a FAA Form 7460-1, Notice of Proposed Construction or Alteration has been filed with the FAA. The evaluation demonstrates that the LEC does not pose a hazard to aircraft operations therefore its location in the conical zone is not inconsistent with the ALUCP. However, utility use is not allowed in the Runway Protection Zone, and natural gas and petroleum pipelines are prohibited uses within the Inner Approach Zone. Please refer to the **TRAFFIC AND TRANSPORTATION** section of this document for a discussion of the proposed gas pipeline's conformity with the Runway protection and Approach Zones.

NOISE

Applicable LORS	*Description*
Federal	
(OSHA): 29 U.S.C. § 651 et seq.	Under the Occupational Safety and Health Act of 1970 (29 USC § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations designed to protect workers against the effects of occupational noise exposure (29 CFR § 1910.95). 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 only guidance available for evaluation of power plant vibration is guidelines published by the Federal Transit Administration (FTA) for assessing the impacts of groundborne vibration associated with construction of rail projects. These guidelines have been applied by other jurisdictions to assess groundborne vibration of 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 groundborne vibration. The FTA measure of the threshold of perception is 65 VdB,[1] 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.

[1] VdB is the common measure of vibration energy.

Applicable LORS	***Description***
State	
(Cal/OSHA): Cal. Code Regs., tit. 8, §§ 5095–5099	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 California Occupational Safety and Health Administration (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 the **WORKER SAFETY AND FIRE PROTECTION** section of this document, and **Noise Appendix A, Table A4**).
Local	
San Joaquin County Ordinance Code (Title 9 – Development Regulations §9-1025.9 Noise)	Title 9 of the San Joaquin County Ordinance Code sets various performance standards; section 9-1025.5 addresses vibration, and section 9-1025.9 addresses noise (SJC 1995). Section 9-1025.9(b)(2) requires new stationary noise sources to mitigate noise emissions so that noise levels at noise sensitive land uses do not exceed the noise level standards presented in Table 9-1025.9, Section 9-1025.9(c)(3) exempts from these limits any construction noise, provided it does not take place before 6:00 a.m. or after 9:00 p.m.
City of Lodi General Plan, Noise Element	The city of Lodi has established land use compatibility guidelines in its general plan noise element (city of Lodi 1991: Policy A-1). The noise levels considered generally acceptable and conditionally acceptable for residences are 60 dB L_{dn}/CNEL and 65 dB $_{Ldn}$/CNEL, respectively.

Applicable LORS	***Description***
City of Lodi Municipal Code, Noise Regulation (Title 9, Chapter 9.24)	Noise regulations applicable to the construction and operation of the project are set forth in the city of Lodi Municipal Code (city of Lodi 2008). Regulation Section 9.24.030 limits incremental noise level variation during nighttime hours; stating the following: (C) It is unlawful for any person, firm, or corporation to cause, permit, or generate any noise or sound as described herein between the hours of 10 p.m. and 7 a.m. which exceeds the ambient noise level at the property line of any residential property…as determined at the time of such reading by more than 5 dB.

POWER PLANT EFFICIENCY

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

POWER PLANT RELIABILITY

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

PUBLIC HEALTH

Applicable LORS	*Description*
Federal	
Clean Air Act section 112 (42 U.S. Code section 7412)	Requires new sources which emit more than 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 mandated 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 required that the new source review rule for each air pollution control district include regulations that require new or modified procedures for controlling the emission of toxic air contaminants.
California Health and Safety Code section 41700	This section states that “no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”
California Code of Regulations, Title 22, Section 60306	Requires that whenever a cooling system uses recycled water in conjunction with an air conditioning facility and a cooling tower that creates a mist that could come into contact with employees or members of the public, a drift eliminator shall be used and chlorine, or other, biocides shall be used to treat the cooling system re-circulating water to minimize the growth of Legionella and other micro-organisms.
Local	
San Joaquin Valley Air Pollution Control District (SJVAPCD) Rule 2201.	Requires safe exposure limits for Toxic Air Pollutants (TACs), use of best Available Control Technology (BACT) and New Sources Review (NSR).

SOCIOECONOMICS

Applicable LORS	*Description*
State	
California Education Code, Section 17620	The governing board of any school district is authorized to levy a fee, charge, dedication, or other requirement for the purpose of funding the construction or reconstruction of school facilities.
California Government Code, Sections 65996-65997	Except for a fee, charge, dedication, or other requirement authorized under Section 17620 of the Education Code, state and local public agencies may not impose fees, charges, or other financial requirements to offset the cost for school facilities.
Local	**None**

SOIL AND WATER

Applicable LORS	***Description***
Federal	
Clean Water Act (33 USC, §§ 1251 et seq.)	Requires states to set standards to protect water quality, which includes regulation of storm water discharges during construction and operation of power plant facilities
Safe Drinking Water Act (40 CFR, parts 144 through 147)	Requires the United States Environmental Protection Agency (USEPA) to develop minimum federal requirements for the Underground Injection Control (UIC) programs to prevent injection wells from contaminating underground sources of drinking water.
State	
California Water Code, section 13260	Requires filing with the appropriate Regional Water Quality Control Board (RWQCB) a report of waste discharge for those discharges that could affect the water quality of the state.
California Water Code, section 13523	Requires the Central Valley Regional Water Quality Control Board (CVRWQCB) to prescribe water reuse requirements for water that is to be used as recycled water after consultation with the Department of Public Health (DPH).
California Water Code, section 13550	Prohibits the use of potable water for non-potable uses if recycled water is available and upon other criteria such as the quality and quantity of the recycled water are suitable for the use, the cost is reasonable, and the use is not detrimental to public health.
Title 17 California Code of Regulations,	Requires prevention measures for backflow and cross connection of potable and non-potable water lines.
Title 22, California Code of Regulations	Requires the California Department of Public Health (DPS) to review and approve the wastewater treatment systems to ensure they meet tertiary treatment standards.
Title 23, California Code of Regulations	Requires the RWQCB to issue waste discharge requirements specifying conditions for protection of water quality.
Public Resources Code, sections 25300 through 25302	Requires the Energy Commission to conduct assessments and forecasts of all aspects of energy production to develop energy policy that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety.
Local	
Lodi Municipal Code, Title 8, Chapter 8.08	Requires a well boring permit application be submitted to the San Joaquin County Environmental Health Department prior to placement of a well.
Lodi Municipal Code, Title 15, Chapter 15.60	Addresses flood damage prevention and sets guidelines for development in a flood hazard area.

Applicable LORS	***Description***
State Policies and Guidance	
California Constitution, Article X, section 2	Requires that the water resources of the state be put to beneficial use to the fullest extent possible and states that the waste, unreasonable use, or unreasonable method of use of water is prohibited.
Integrated Energy Policy Report (Pub. Resources Code, Div. 15, § 25300 et seq.)	In the *2003 Integrated Energy Policy Report*, consistent with State Water Resources Control Board Resolution 75-58 and the Warren-Alquist Act, the Energy Commission adopted a policy stating they will approve the use of fresh water for cooling purposes by power plants only where alternative water supply sources and alternative cooling technologies are shown to be “environmentally undesirable” or “economically unsound.”

TRANSMISSION LINE SAFETY AND NUISANCE

Applicable LORS	***Description***
Aviation Safety	
Federal	
Title 14, Part 77 of the Code of Federal Regulations (CFR),"Objects Affecting the Navigable Air Space"	Describes the criteria used to determine the need for a Federal Aviation Administration (FAA) "Notice of Proposed Construction or Alteration" in cases of potential obstruction hazards.
FAA Advisory Circular No. 70/7460-1G, " Proposed Construction and/or Alteration of Objects that May Affect the Navigation Space"	Addresses the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA in cases of potential for an obstruction hazard.
FAA Advisory Circular 70/460-1G, "Obstruction Marking and Lighting"	Describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.
Interference with Radio Frequency Communication	
Federal	
Title 47, CFR, Section 15.2524, Federal Communications Commission (FCC)	Prohibits operation of devices that can interfere with radio-frequency communication.
State	
California Public Utilities Commission (CPUC) General Order 52 (GO-52)	Governs the construction and operation of power and communications lines to prevent or mitigate interference.
Audible Noise	
Local	
Noise Element of San Joaquin County's Code	Sets noise limits for stationary noise sources.
City of Lodi Municipal Code.	Sets sound level limits at residences and outdoor activity areas.

Applicable LORS	*Description*
Hazardous and Nuisance Shocks	
State	
CPUC GO-95, “Rules for Overhead Electric Line Construction”	Governs clearance requirements to prevent hazardous shocks, grounding techniques to minimize nuisance shocks, and maintenance and inspection requirements.
Title 8, California Code of Regulations (CCR) Section 2700 et seq. “High Voltage Safety Orders”	Specifies requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.
National Electrical Safety Code	Specifies grounding procedures to limit nuisance shocks. Also specifies minimum conductor ground clearances.
Industry Standards	
Institute of Electrical and Electronics Engineers (IEEE) 1119, “IEEE Guide for Fence Safety Clearances in Electric-Supply Stations”	Specifies the guidelines for grounding-related practices within the right-of-way and substations.
Electric and Magnetic Fields	
State	
GO-131-D, CPUC ”Rules for Planning and Construction of Electric Generation Line and Substation Facilities in California”	Specifies application and noticing requirements for new line construction including EMF reduction.
CPUC Decision 93 11-013	Specifies CPUC requirements for reducing power frequency electric and magnetic fields.
Industry Standards	
American National Standards Institute (ANSI/IEEE) 644-1944 Standard Procedures for Measurement of Power Frequency Electric and Magnetic Fields from AC Power Lines	Specifies standard procedures for measuring electric and magnetic fields from an operating electric line.

Applicable LORS	***Description***
Fire Hazards	
State	
14 CCR Sections 1250-1258, “Fire Prevention Standards for Electric Utilities”	Provides specific exemptions from electric pole and tower firebreak and conductor clearance standards and specifies when and where standards apply.

TRAFFIC AND TRANSPORTATION

Applicable LORS	***Description***
Federal	
Title 14, Code of Federal Regulations (CFR) Chapter 1, Part 77	Includes standards for determining obstructions in navigable airspace. Sets forth requirements for notice to the Federal Aviation Administration of certain proposed construction or alteration. Also, provides for aeronautical studies of obstructions to air navigation to determine their effect on the safe and efficient use of airspace.
Title 49, Subtitle B	Includes procedures and regulations pertaining to interstate and intrastate transport (includes hazardous materials program procedures) and provides safety measures for motor carriers and motor vehicles that operate on public highways.
State	
California Vehicle Code, Division 2, Chapter. 2.5; Div. 6, Chap. 7; Div. 13, Chap. 5; Div. 14.1, Chap. 1 & 2; Div. 14.8; Div. 15	Includes regulations pertaining to licensing, size, weight, and load of vehicles operated on highways; safe operation of vehicles; and the transportation of hazardous materials.
California Streets and Highway Code, Division 1 & 2, Chapter 3 & Chapter 5.5	Includes regulations for the care and protection of state and county highways and provisions for the issuance of written permits.
Local	
City of Lodi General Plan Circulation Element	Requires level of service (LOS) C or better operating conditions for all roadway links and intersections.
San Joaquin County Regional Transportation Plan.	Establishes regional transportation goals, policies, objectives and actions for various modes of transportation, such as improvements to mobility, improvement of goods movement, etc.
County of San Joaquin 2010 General Plan Transportation Element	Requires level of service (LOS) C or better operating conditions for all county roadway links and intersections, except in a sphere of influence where the City has adopted LOS D or better on minor arterials and roadways.

TRANSMISSION SYSTEM ENGINEERING

Applicable LORS	***Description***
NERC/WECC (North American Electric Reliability Corporation/Western Electricity Coordinating Council)	The combined planning standards provide system performance standards for assessing the reliability of the interconnected transmission system. These standards require continuity of service as their first priority and the preservation of interconnected operation as their second. Some aspects of NERC/WECC standards are either more stringent or more specific than the either agency's standards alone. These standards are designed to ensure that transmission systems can withstand both forced and maintenance outage system contingencies while operating reliably within equipment and electric system thermal, voltage, and stability limits. These standards include reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WECC system is based to a large degree on Section I.A of WECC standards, *NERC and WECC Planning Standards with Table I and WECC Disturbance-Performance Table,* and on Section I.D, *NERC and WECC Standards for Voltage Support and Reactive Power.* These standards require that power flows and stability simulations verify defined performance levels. Performance levels are defined by specifying allowable variations in thermal loading, voltage and frequency, and loss of load that may occur during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (such as the loss of load from a single transmission element) to a catastrophic loss level designed to prevent system cascading and the subsequent blackout of islanded areas and millions of consumers during a major transmission disturbance (such as the loss of multiple 500-kV lines along a common right-of- way, and/or of multiple large generators). While the controlled loss of generation or system separation is permitted under certain specific circumstances, this sort of major uncontrolled loss is not permitted (WECC, 2002). NERC's reliability standards for North America's electric transmission system spell out the national policies, standards, principles, and guidelines that ensure the adequacy and security of the nation's transmission system. These reliability standards provide for system performance levels under both normal and contingency

	conditions. While these standards are similar to the combined NERC/WECC standards, certain aspects of the combined standards are either more stringent or more specific than the NERC performance standards alone. NERC's reliability standards apply to both interconnected system operations and to individual service areas (NERC, 2006).
California Public Utilities Commission (CPUC) General Order 95 (GO-95*), Rules for Overhead Electric Line Construction*	Specifies uniform requirements for the construction of overhead electric lines. Compliance with this order ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of overhead electric lines, and for the safety of the general public.
CPUC General Order 128 (GO-128), *Rules for Underground Electric Line Construction*	Establishes uniform requirements for the construction of underground electric lines. Compliance with this order also ensures both reliable service and a safe working environment for those working in the construction, maintenance, operation, or use of underground electric lines, and for the safety of the general public.
National Electric Safety Code 1999	Provides electrical, mechanical, civil, and structural requirements for overhead electric line construction and operation.
California Independent System Operator (CAISO)	California ISO Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the California ISO transmission grid facilities. The California ISO Grid Planning Standards incorporate the NERC/WECC and NERC Reliability Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to the NERC/WECC or NERC Reliability Planning Standards for Transmission System Contingency Performance. However, the California ISO Standards also provide some additional requirements that are not found in the WECC/NERC or NERC Standards. The California ISO Standards apply to all participating transmission owners interconnecting to the California ISO controlled grid. They

	also apply when there are any impacts to the California ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the California ISO (California ISO 2002a).
California ISO/FERC Electric Tariff	Provides guidelines for construction of all transmission additions/upgrades (projects) within the California ISO controlled grid. The California ISO determines the “Need” for the proposed project where it will promote economic efficiency or maintain system reliability. The California ISO also determines the Cost Responsibility of the proposed project and provides an Operational Review of all facilities that are to be connected to the California ISO grid (California ISO 2007a). California ISO/FERC (Federal Energy Regulatory Commission) electricity tariffs contain guidelines for building all transmission additions/upgrades within the California ISO-controlled grid. (California ISO, 2003a).

VISUAL RESOURCES

Applicable LORS	***Description***
Federal	
Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (PL 109-59; 2005). Expires 2009.	Pertains to sites located on or in vicinity of federally-managed lands. LEC site is not located on federally managed lands or in the vicinity of a recognized National Scenic Byway or All-American Road.
State	
California Streets and Highways Code, Sections 260 through 263 – Scenic Highways	Ensures the protection of highway corridors that reflect the State's natural scenic beauty. The state of California has not formally designated as scenic any of the roads or highways within or adjacent to the project area
Local	
San Joaquin County General Plan 2010, Volume III, Community Development, Section II.E	White Slough Recreation Area is listed as significant resource for recreation. Borrow sites (part of White Slough Wildlife Area) are listed as a regional park.
San Joaquin County General Plan 2010, Chapter IV, Public Facilities; Agricultural Land; Objectives	To minimize the impact on agriculture in the transition of agricultural land to urban development.
San Joaquin County General Plan 2010; Chapter IV, Public Facilities, Recreation, Policy 23	Scenic corridors along recreational travel ways and scenic routes shall be protected from unsightly development.
San Joaquin County General Plan 2010, Chapter VI, Resources; Open Space; Policy 13	Development proposals along scenic routes shall not detract from the visual and recreational experience.
City of Lodi General Plan, Section 10, Urban Design and Cultural Resources Element, Industrial Areas	Goal C: To maintain and enhance the aesthetic quality of major streets and public/civic areas The city shall develop special design standards to upgrade roadways, including SR 12 and SR 99. Such standards shall include provisions for setbacks, signs, landscaping, parking, and upgrading commercial development and screening of visually unattractive commercial and industrial uses. Goal 1: The city shall formulate and adopt guidelines, incentives, and design standards as part of the city's Urban Design Plan for upgrading and enhancing the visual quality of existing industrial areas, including screening of industrial

Applicable LORS	***Description***
	operations visible from public streets, site landscaping, and screening of parking lots.
City of Lodi General Plan; Urban Design and Cultural Resources; Rural and Agricultural Lands	The rural and agricultural lands surrounding Lodi constitute an important scenic resource that helps to visually define and enhance the city.
City of Lodi Municipal Code, Title 17, Article 4, Design Guidelines	Design guidelines (site design, architecture, landscaping, signs, parking design) apply to all development within the city.

WASTE MANAGEMENT

Applicable LORS	***Description***
Federal	
Title 42, United States Code (U.S.C.), §§6901, et seq. Solid Waste Disposal Act of 1965 (as amended and revised by the Resource Conservation and Recovery Act of 1976, et al).	The Solid Waste Disposal Act, as amended and revised by the Resource Conservation and Recovery Act (RCRA) et al, establishes requirements for the management of solid wastes (including hazardous wastes), landfills, underground storage tanks, and certain medical wastes. The statute also addresses program administration, implementation and delegation to states, enforcement provisions and responsibilities, as well as research, training, and grant funding provisions.
Title 42, U.S.C., §§ 9601, et seq. Comprehensive Environmental Response, Compensation and Liability Act	The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), also known as Superfund, establishes authority and funding mechanisms for cleanup of uncontrolled or abandoned hazardous waste sites, as well as cleanup of accidents, spills, or emergency releases of pollutants and contaminants into the environment. Among other things.
Title 40, Code of Federal Regulations (CFR), Subchapter I – Solid Wastes.	These regulations were established by United States Environmental Protection Agency (USEPA) to implement the provisions of the Solid Waste Disposal Act and RCRA (described above). Among other things, the regulations establish the criteria for classification of solid waste disposal facilities (landfills), hazardous waste characteristic criteria and regulatory thresholds, hazardous waste generator requirements, and requirements for management of used oil and universal wastes. USEPA implements the regulations at the federal level. However, California is an authorized state so the regulations are implemented by state agencies and authorized local agencies in lieu of USEPA.
Title 49, CFR, Parts 172 and 173. Hazardous Materials Regulations	U.S. Department of Transportation established standards for transport of hazardous materials and hazardous wastes. The standards include requirements for labeling, packaging, and shipping of hazardous materials and hazardous wastes, as well as training requirements for personnel completing shipping papers and manifests. Section 172.205 specifically addresses use and preparation of hazardous waste manifests in accordance with Title 40, CFR, section 262.20.
State	
California Health and Safety Code (HSC), Chapter 6.5, §25100, et seq. Hazardous Waste	This California law creates the framework under which hazardous wastes must be managed in California. The law provides for the development of a state hazardous waste program that administers and implements the provisions of the federal RCRA program. It also provides for the designation of California-only hazardous wastes and development of standards (regulations) that are equal to or, in some cases, more stringent than federal requirements.

Applicable LORS	***Description***
Control Act of 1972, as amended.	The California Environmental Protection Agency (Cal/EPA), Department of Toxic Substances Control (DTSC) administers and implements the provisions of the law at the state level. Certified Unified Program Agencies (CUPAs) implement some elements of the law at the local level.
Title 22, California Code of Regulations (CCR), Division 4.5. Environmental Health Standards for the Management of Hazardous Waste	These regulations establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and federal RCRA. As with the federal requirements, waste generators must determine if their wastes are hazardous according to specified characteristics or lists of wastes. Hazardous waste generators must obtain identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Generator standards also include requirements for record keeping, reporting, packaging, and labeling. Additionally, while not a federal requirement, California requires that hazardous waste be transported by registered hazardous waste transporters. The Title 22 regulations are established and enforced at the state level by DTSC. Some generator standards are also enforced at the local level by CUPAs.
California Health and Safety Code,, Chapter 6.11 §§25404 – 25404.9 Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program)	The Unified Program consolidates, coordinates, and makes consistent the administrative requirements, permits, inspections, and enforcement activities of the six environmental and emergency response programs. The state agencies responsible for these programs set the standards for their programs while local governments implement the standards. The local agencies implementing the Unified Program are known as Certified Unified Program Agencies (CUPAs). San Joaquin County Department of Environmental Health is the area CUPA.
Title 27, CCR, Division 1, Subdivision 4, Chapter 1, §15100, et seq. Unified Hazardous Waste and Hazardous Materials Management Regulatory Program	While these regulations primarily address certification and implementation of the program by the local CUPAs, the regulations do contain specific reporting requirements for businesses. • Article 9 – Unified Program Standardized Forms and Formats (§§ 15400-15410). • Article 10 – Business Reporting to CUPAs (§§15600 – 15620).
Public Resources Code, Division 30, §40000, et seq. California Integrated Waste Management Act of 1989.	The California Integrated Waste Management Act of 1989 (as amended) establishes mandates and standards for management of solid waste. Among other things, the law includes provisions addressing solid waste source reduction and recycling, standards for design and construction of municipal landfills, and programs for county waste management plans and local implementation of solid waste requirements.
Title 14, CCR, Division 7, §17200, et seq.	These regulations further implement the provisions of the California Integrated Waste Management Act and set forth minimum standards for solid waste

Applicable LORS	***Description***
California Integrated Waste Management Board	handling and disposal. The regulations include standards for solid waste management, as well as enforcement and program administration provisions.
California Health and Safety Code, Division 20, Chapter 6.5, Article 11.9, §25244.12, et seq. Hazardous Waste Source Reduction and Management Review Act of 1989 (also known as SB 14).	This law was enacted to expand the State's hazardous waste source reduction activities. Among other things, it establishes hazardous waste source reduction review, planning, and reporting requirements for businesses that routinely generate more than 12,000 kilograms (~ 26,400 pounds) of hazardous waste in a designated reporting year. The review and planning elements are required to be done on a 4 year cycle, with a summary progress report due to DTSC every 4th year.
Title 22, CCR, §67100.1 et seq. Hazardous Waste Source Reduction and Management Review.	These regulations further clarify and implement the provisions of the Hazardous Waste Source Reduction and Management Review Act of 1989 (noted above). The regulations establish the specific review elements and reporting requirements to be completed by generators subject to the Act.
Local	
San Joaquin County Certified Unified Program Agency (CUPA) Program (San Joaquin County Board of Supervisors Resolution R-95-760)	This program consolidates, coordinates and makes consistent the administrative requirements, permitting, inspection activities, enforcement activities and fees for hazardous waste and hazardous materials programs in each jurisdiction.
San Joaquin County Hazardous Waste Generator Program	This program ensures protection of public health and the environment from exposure to hazardous waste by regulation of the businesses and industries that generate hazardous waste. It includes a comprehensive program of inspection, chemical emergency response, and surveillance, and complaint investigation, assistance to industry, public education, and enforcement.
San Joaquin County Ordinance Code, Sections 5-2100 through 5-2900 et seq.	These ordinances protect the public health and the environment from the effects of improper storage, collection, transportation and disposal of solid waste. The San Joaquin County Environmental Health Department is certified by the State as the Local Enforcement Agency (LEA) for enforcement of solid waste laws and regulations within the unincorporated area of San Joaquin County and all of the incorporated cities except the City of Stockton.
San Joaquin County Hazardous Waste Tiered Permitting Program	This program ensures that hazardous wastes treated on site prior to reuse or disposal are stored, handled and disposed of in compliance with state and federal laws and regulations. Inspection, surveillance and permitting is required as part of the county Unified Program.
San Joaquin County Environmental Health	Interagency emergency response team guidelines for incidents involving hazardous material spills or releases, including health assessments to evaluate

Applicable LORS	***Description***
Emergency Response Program	actual or potential environmental contamination and/or human exposure, recommendations for short and long-term cleanup, and oversight of the cleanup activities performed by the responsible parties or environmental assessment firms.

WORKER SAFETY AND FIRE PROTECTION

Applicable LORS	***Description***
Federal	
Title 29 U.S. Code (USC) section 651 et seq (Occupational Safety and Health Act of 1970)	This act mandates safety requirements in the workplace with the purpose of "[assuring] so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources" (29 USC § 651).
Title 29 Code of Federal Regulation (CFR) sections 1910.1 to 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations)	These sections define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector.
29 CFR sections 1952.170 to 1952.175	These sections provide federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the federal requirements found in 29 CFR sections 1910.1 to 1910.1500.
State	
Title 8 California Code of Regulations (Cal Code Regs.) all applicable sections (Cal/OSHA regulations)	These sections require that all employers follow these regulations as they pertain to the work involved. This includes regulations pertaining to safety matters during construction, commissioning, and operations of power plants, as well as safety around electrical components, fire safety, and hazardous materials use, storage, and handling.
24 Cal Code Regs. section 3, et seq.	This section incorporates the current addition of the Uniform Building Code.
Health and Safety Code section 25500, et seq.	This section presents Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at a facility.
Health and Safety Code sections 25500 to 25541	These sections require a Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at a facility.
Local (or locally enforced)	
Specific Hazardous Material Handling Requirements	Provides response agencies with necessary information to address emergencies.

Applicable LORS	***Description***
Emergency Response Plan	Allows response agency to integrate LEC emergency response activities into response actions.
Business Plan	Provides response agency with overview of LEC purpose and operations.
RMP (Certified Unified Program Agency [CUPA], administered by the County)	Provides response agency with detailed review of risks and hazards located at LEC and mitigation implemented to control risks or hazards.
California Fire Code 2007	Adopted by the San Joaquin County and administered by the Woodbridge Fire Protection District (WFPD 2009).

BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT COMMISSION OF THE STATE OF CALIFORNIA
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APPLICATION FOR CERTIFICATION FOR THE *Lodi Energy Center*

DOCKET NO. 08-AFC-10

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DECLARATION OF SERVICE

I, _____, declare that on _____, 2010, I served and filed copies of the attached _____, dated _____, 2010. The original document, filed with the Docket Unit, is accompanied by a copy of the most recent Proof of Service list, located on the web page for this project at: [http://www.energy.ca.gov/sitingcases/lodi].

The documents have been sent to both the other parties in this proceeding (as shown on the Proof of Service list) and to the Commission's Docket Unit, in the following manner:

(*Check all that Apply*)

FOR SERVICE TO ALL OTHER PARTIES:

_____ sent electronically to all email addresses on the Proof of Service list;

_____ by personal delivery;

_____ by delivering on this date, for mailing with the United States Postal Service with first-class postage thereon fully prepaid, to the name and address of the person served, for mailing that same day in the ordinary course of business; that the envelope was sealed and placed for collection and mailing on that date to those addresses NOT marked "email preferred."

AND

For filing with the Energy Commission:

____ sending an original paper copy and one electronic copy, mailed and emailed respectively, to the address below (preferred method);

OR

_____depositing in the mail an original and 12 paper copies, as follows:

CALIFORNIA ENERGY COMMISSION
Attn: Docket No. 08-AFC-10
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512
docket@energy.state.ca.us

I declare under penalty of perjury that the foregoing is true and correct, that I am employed in the county where this mailing occurred, and that I am over the age of 18 years and not a party to the proceeding.

_____
Signature