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ENERGY
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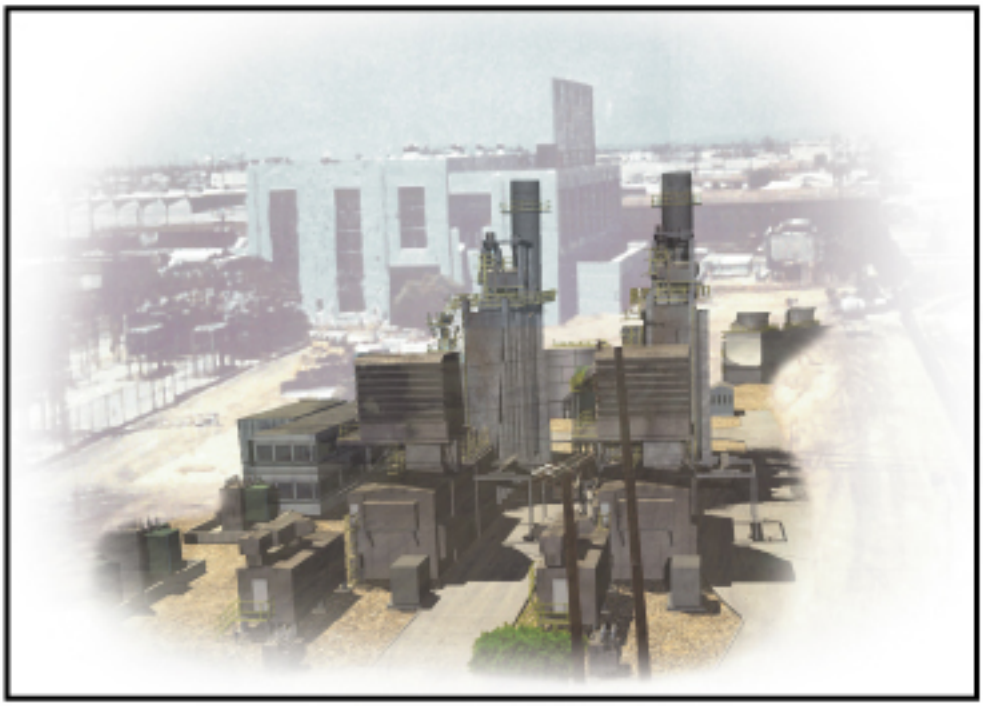
MALBURG GENERATING STATION PROJECT

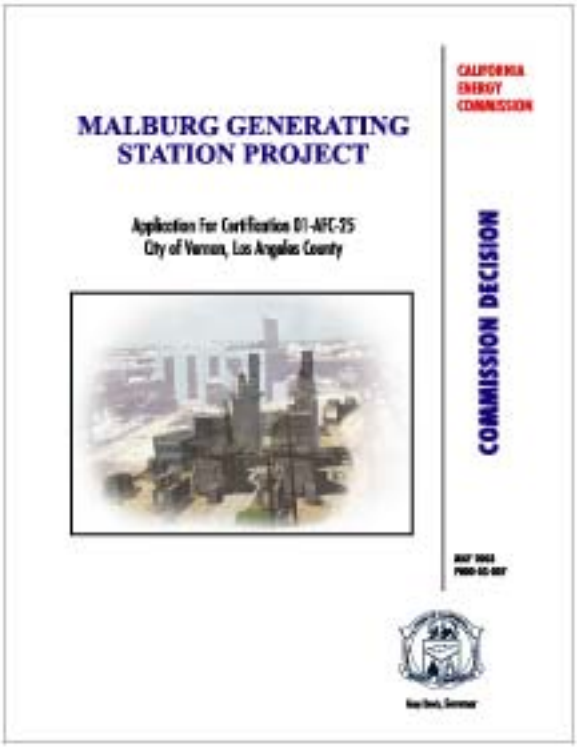
Application For Certification 01-AFC-25
City of Vernon, Los Angeles County



COMMISSION DECISION

MAY 2003
P800-03-007

Gray Davis, Governor



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INTRODUCTION

A. SUMMARY OF THE PROPOSED DECISION

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

The City of Vernon ("Applicant" or "Project Owner") filed an Application for Certification (AFC) for the Malburg Generating Station (MGS or "project"), a nominally rated 134-megawatt (MW) natural gas-fired, combined-cycle electric generating facility. The project will be owned, constructed, and operated by the City of Vernon and will become part of the City's municipal electric grid.

The MSG site is located at 2715 East 50th Street, in Vernon, California. The project will be situated on 3.4 acres within the existing Station A compound owned by the City of Vernon. The site is surrounded by industrial land uses in the western portion of the City of Vernon near the geographical center of Los Angeles County, about three miles southeast of downtown Los Angeles and 15 miles north of the major harbor and port facilities in San Pedro and Long Beach.

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[1] The Reporter's Transcript of the evidentiary hearing conducted on February 10, 2003, is cited as "RT, page (p.) __." The exhibits included in the evidentiary record are cited as "Ex. number." A list of all exhibits is contained in Appendix C of this Decision.

The power plant consists of two turbine generators (CTGs) equipped with dry low-NO_x (DLN) combustors for oxides of nitrogen (NO_x) control; two heat recovery steam generators (HRSG), each equipped with a 110-foot tall exhaust stack; a single condensing steam turbine-generator (STG); a steam surface condenser; a cooling tower; and support equipment. The project will also employ selective catalyst reduction (SCR) and oxidizing catalysts to meet the current Best Available Control Technology (BACT) requirements of the South Coast Air Quality Management District (SCAQMD Air District).

The project will interconnect with the City's electric grid at the onsite Vernon Substation via three underground cable lines within the existing power station. No new offsite transmission lines are required. The Vernon Substation connects to the City's transmission and distribution system.

The project requires construction of a new 1,300-foot natural gas pipeline to deliver fuel from the existing City of Vernon gas distribution system located along Fruitland Avenue. No other fuel other than natural gas will be used by the new MGS, except for diesel fuel for the project's firewater pump in the event of an emergency.

The MGS will use reclaimed water exclusively in the cooling tower arrays and will require a peak demand of approximately 1,000 gallons per minute (gpm) of reclaimed water. The City will purchase reclaimed water from the Central Basin Municipal Water District (CBMWD) under a long-term contract and the CBMWD has provided a Will Serve letter indicating agreement to meet the project's 1,000 gallon gpm demand. In the event that reclaimed water is unavailable, the project owner may use potable water as backup but use of potable water for process cooling shall be limited to 9 days per calendar year. Fire protection water will be stored in an existing underground cooling water tank. A fire main will be connected to this tank.

The project requires construction of a new reclaimed water pipeline connecting to the existing CBMWD reclaimed water distribution system located approximately 1.8 miles (about 10,000 feet) from the intersection of Randolph Street and Newell Street to the MGS. The pipeline will be constructed in a westerly direction along Randolph Street and then north along Boyle Avenue. At the intersection of Boyle Avenue and 50th Street, the line will head west along 50th Street, then north into the project site.

A new 1,300-foot long sewer line from the MGS along Seville to Fruitland Avenue will be required for discharge to the local sewer. From that point on, the existing sewer trunk is capable of handling all wastewater flows from the project. The wastewater will flow through the L. A. County Sanitation District's existing treatment facility.

Applicant will begin project construction in the third quarter of 2003 and expects to commence commercial operation by the last quarter of 2004. During the 16 to 18 month construction period, the project will provide a maximum of 179 construction jobs. During operation, the project will employ approximately 32 permanent staff. The facility has a planned life of 30 years or longer. Applicant estimates the capital costs associated with the project will be approximately $153 million.

Several local, state, and federal agencies cooperated with the Energy Commission in completing this review process. The Applicant and Commission staff worked with the City of Vernon, the South Coast Air Quality Management District (SCAQMD), the California Air Resources Control Board (CARB), the U.S. Environmental Protection Agency (USEPA), the California Department of Toxic Substances Control (DTSC), the California Department of Health Services, the California Department of Transportation (Caltrans), the Central Basin Municipal Water District (CBMWD), the Los Angeles Regional Water Quality Control Board, the City of Huntington Park, Los Angeles Unified School District, the California

Independent System Operator (Cal-ISO), Southern California Edison, and the Los Angeles Department of Water and Power. California Unions for Reliable Energy (CURE), the only formal intervenor in this case, did not participate in the process.

SCAQMD was responsible for coordinating input from the USEPA and CARB, in consultation with Commission staff, in drafting its Final Determination of Compliance (FDOC) on the project's conformity with state and federal air quality standards. SCAQMD confirmed that the Applicant has a complete emission offset package as required by Section 25523(d)(2) of the Public Resources Code. The project will use the best available control technology (BACT), as required by SCAQMD, to reduce emissions to levels of insignificance. The limitations on project emissions and the conditions imposed by SCAQMD as well as the mitigation measures recommended by Staff are incorporated into this Decision.

After the close of evidentiary hearings, the City met with Staff to request a modification of proposed Condition of Certification **AQ-C1** to allow MGS more flexibility to develop alternative construction-related emission limits if results of monitoring justify changing the requirements. As initially proposed, the Condition would have limited construction-related emissions to no more than 10 ug/m3 difference between upwind and downwind monitoring. The parties also proposed language to allow the City to develop alternatives "in place of the measures" described in the Condition if the limit could not be achieved. The Committee, however, directed the parties to revise their proposal to reflect attainable limits so it would not be necessary for the City to request a revision after certification. The parties subsequently submitted new limits (235 ug/m^3 for NO_2 and 50 ug/m^3 for PM_{10}), which we have incorporated into the Condition. However, we reject the parties' proposal to allow the City to develop alternatives in place of the measures identified in the Condition. We are required to specify the measures intended to mitigate impacts identified in the record. The parties do not have

discretion to change the terms of Conditions of Certification without the review set forth in Section 1769 of the Commission's regulations. (Cal. Code of Regs., tit. 20, § 1769.)

Staff proposed Condition of Certification **SOIL & WATER-5**, which limits project use of potable water for cooling to 9 days per year. To ensure compliance with this requirement, we added a reference in the Verification to initiation of enforcement proceedings under the General Conditions if the MGS exceeds the 9-day limitation.

We also added a new Condition **SOIL & WATER-7**, which requires the project owner to complete three project-related improvements to the reclaimed water distribution system prior to project start-up, including the installation of a booster pump, installation of a pressure-reducing station, and installation of 10,000 feet of new reclaimed water pipeline. The City indicated that these improvements would be necessary but provided no information on the timeline for completion. At the Committee Conference, the City reported that the single in-line pressure-reducing station would not be necessary for the project based on the location of the pump station and existing pipeline system. However, individual pressure-reducing stations will be necessary at approximately 9 existing recycled water customer sites and will be completed before project start-up. Although the individual pressure-reducing stations are not required to supply the reclaimed water needs of the MGS project, CBMWD will complete these stations before recycled water is supplied to MGS in order to minimize interruptions to existing recycled water customers near the pump station.

We modified Condition **TRANS-5** to include a provision on access to properties during construction-related activities on all linear facilities. We clarified Condition **TRANS-8**, which identifies the preferred and alternative routes for transporting hazardous materials to the MGS site. We added a new Condition **TRANS-9** to require the project owner to determine the necessity for warning signage and the

locations for sign placement to inform motorists about the possibility of ground level fog on 50th Street, Seville Avenue and Leonis Avenue. Staff discussed this issue in its Staff Assessment but did not include mitigation measures in its proposed Conditions.

The Commission's Public Adviser and the parties engaged in outreach to surrounding communities by notifying residents and local government agencies about the proposed MGS project. Except for comments by governmental agencies, there were no public comments or public participation other than consultation with the City Manager of Huntington Park and with the Communities for a Better Environment. Per Section 25550(g) of the Public Resources Code, the evidentiary record includes an initial environmental justice screening to determine whether the MGS would cause disproportionate impacts to minority or low-income populations in the area. Since the project will not result in significant environmental impacts to any population, we find there are no environmental justice issues related to the project.

Since the AFC in this case was processed under the six-month review statute, evidence of a project labor agreement was required per Section 25550(f) of the Public Resources Code. The City provided written confirmation that it has finalized a project labor agreement with the California State Building and Construction Trades for construction of the project upon certification.

Section 25523(h) of the Public Resources Code requires a discussion of the project's benefits. We address this issue in the Socioeconomics section of the Decision in which we find that the MGS will provide local economic benefits and electricity reliability to the City's electric grid customers. We conclude that the project will have no unmitigated significant effects on the environment.

B. SITE CERTIFICATION PROCESS

The Malburg Generating Station and its related facilities are subject to Energy Commission licensing jurisdiction. (Pub. Resources Code, §§ 25500 et seq.) During licensing proceedings, the Commission acts as lead state agency under the California Environmental Quality Act. (Pub. Resources Code, §§ 25519(c), 21000 et seq.) The Commission's process and associated documents are functionally equivalent to the preparation of the traditional Environmental Impact Report. (Pub. Resources Code, § 21080.5.) The process is designed to complete the review within a specified time period; a license issued by the Commission is in lieu of other state and local permits.

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

Specifically, the Commission's process allows for and encourages public participation so that members of the public may become involved either informally or on a more formal level as intervenors with an opportunity to present evidence and cross-examine witnesses. Public participation is encouraged at every stage of the process.

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

determines a project's conformity with applicable laws, ordinances, regulations, and statutes and provides recommendations to the full Commission.

The initial portion of the certification process is weighted heavily toward assuring public awareness of the proposed project and obtaining such technical information as necessary. During this time, the Commission staff sponsors numerous public workshops at which Intervenors, agency representatives, and members of the public meet with Staff and Applicant to discuss, clarify, and negotiate pertinent issues. Staff publishes its initial technical evaluation of a project in a document called the Preliminary Staff Assessment (PSA), which is made available for public comment. Staff's responses to public comment on the PSA and its complete analyses are published in the Final Staff Assessment (FSA).

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

The Committee's analysis and recommendations appear in the Presiding Member's Proposed Decision (PMPD), which is available for a 30-day public comment period. Depending upon the extent of revisions necessary after considering comments received during this period, the Committee may elect to publish a revised version. If so, this Revised PMPD triggers an additional 15-day public comment period. Finally, the full Commission decides whether to accept, reject, or modify the Committee's recommendations at a public hearing.

Throughout the licensing process, members of the Committee, and ultimately the Commission, serve as fact-finders and decision-makers. Other parties, including the Applicant, Commission staff, and formal intervenors, function independently with equal legal status. An "ex parte" rule prohibits parties from communicating on substantive matters with the decision-makers, their staffs, or assigned hearing officer unless these communications are made on the public record. The Office of the Public Adviser is available to inform members of the public concerning the certification proceedings and to assist those interested in participating.

C. PROCEDURAL HISTORY

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

On December 21, 2001, the City of Vernon filed an Application for Certification (AFC) for the Malburg Generating Station under the Energy Commission's six-month licensing process. Due to incomplete information, the Commission did not find the AFC data adequate until May 8, 2002, when a Committee of two Commissioners was assigned to conduct the formal review process.

The Committee published a notice of "Informational Hearing and Site Visit," by notice dated June 3, 2002. The notice was mailed to members of the community who were known to be interested in the proposed project, including the owners of land adjacent to or in the vicinity of the MGS. The notice was also published in local general circulation newspapers.

The Committee conducted the Informational Hearing and Site Visit in the City of Vernon on July 1, 2002. At that event, the Committee, the parties and other

participants discussed the proposal for developing the MGS, described the Commission's review process, and explained opportunities for public participation. The participants also toured the City of Vernon's existing Station A compound where the MGS will be situated.

Energy Commission staff conducted a number of public workshops and meetings with governmental agencies to determine whether the project should be approved for construction and operation and under what conditions. These workshops provided the public and local, state, and federal agencies the opportunity to ask questions and provide input about the project. Prior to the Informational Hearing, Staff conducted a workshop to discuss the project with the local community and to assess whether there were any environmental justice concerns.

On July 9, 2002, the Committee issued a Scheduling Order, which incorporated a six-month schedule. On October 4, 2002, the Committee issued a Notice of Prehearing Conference. On October 24, 2002, the Committee issued a Notice Rescheduling the Prehearing Conference to January 9, 2003.

On September 27, 2002, Staff published its Staff Assessment (SA). A public workshop was held on October 16, 2002, to receive comments from the parties, members of the public and governmental agencies. Staff's Air Quality analysis was the specific focus of the workshop since the Air District needed additional time to complete its Final Determination of Compliance (FDOC). The FDOC was released December 13, 2002. Subsequently, on December 24, 2002, and February 4, 2003, Staff filed addenda to the SA, revising the air quality analysis based on new information contained in the FDOC and supplemental information provided by the Applicant.

On January 9, 2003, the Committee conducted the Prehearing Conference. On January 13, 2003, the Committee issued a Notice of Site Visit, Evidentiary

Hearing and Hearing Order. On February 10, 2003, the Committee conducted a Site Visit and Evidentiary Hearing in Vernon. California Unions for Reliable Energy (CURE), the only formal intervenor in this case, did not participate at any of the workshops or Committee events.

After reviewing the evidentiary record, the Committee published the Presiding Member's Proposed Decision (PMPD) on April 11, 2003, recommending certification. The 30-day public comment period on the PMPD ended May 12, 2003. The Committee conducted a Conference on May 2, 2003, to discuss comments on the PMPD. Based on the comments submitted by the parties, the Committee issued a list of Errata, which clarified the evidentiary record and incorporated non-substantive changes to several proposed Conditions of Certification. At its business meeting on May 20, 2003, the full Commission adopted the PMPD and the Committee's Errata as the Commission's final Decision in this matter and certified the Malburg Generating Station for construction and operation as set forth on the following pages of this Decision.

I. PROJECT PURPOSE AND DESCRIPTION

The City of Vernon ("Applicant" or "City") filed an application for the Malburg Generating Station (MGS or "project"), a nominally rated 134-megawatt (MW) natural gas-fired power plant. (Ex. 1, § 3.1.) The MGS will be located on 3.4 acres in the City of Vernon at the City's existing power generating Station A, which began operating in 1933. Station A includes five diesel generators that are used during State declared Stage 3 emergencies and two natural gas-fired combustion turbine units that are used only for peaking. (Ex. 1, p. 3-1, 3-3.) Station A is considered a potentially eligible historic resource under California Register of Historic Resources (CRHR) criteria 1 and 3 (Ex. 3, p. 2-13; Ex. 4. p. 2-11.) The City plans to begin operation of the new MGS by the last quarter of 2004. (Ex. 38, Project Description.)

Project Site and Facilities

The MSG site is located at 2715 East 50th Street, in Vernon, California. The project will be situated on 3.4 acres of the existing Station A power generation site, within a 5.9-acre parcel owned by the City of Vernon. (*See* Project Description Figure 1, replicated from Staff's testimony, at the end of this section.) The site is in an industrial land use area in the western portion of the City of Vernon near the geographical center of Los Angeles County. The City is bordered on the north and west by the City of Los Angeles, on the east by the Cities of Commerce and Bell, and on the south by the Cities of Huntington Park and Maywood. Vernon is three miles southeast of downtown Los Angeles and 15 miles north of the major harbor and port facilities in San Pedro and Long Beach. (Ex. 1, p. 3-2.)

The site will accommodate the new MGS facility, a reclaimed water treatment facility, storage tanks, parking area, and storm retention basins. (Ex. 1, pp. 3-1, 3-3.) Primary construction worker and visitor parking will be located across the

street from the MGS site on the southeast corner of 50th Street and Soto Avenue. Project laydown areas will be west of the site on Seville Avenue and on a 2.5-acre site on 50th Street, approximately 1,000 feet from the site. (Ex. 1, pp. 3-3, 3-35.)

Power Plant

The MGS will consist of two Alstom GTX-100 frame type natural gas combustion turbine generators (CTGs) equipped with dry low-NO_x (DLN) combustors for oxides of nitrogen (NO_x) control; two heat recovery steam generators (HRSG); a single condensing steam turbine-generator (STG); a steam surface condenser; a cooling tower; and support equipment. (Ex. 1, p. 3-4.) The CTGs are each rated at 42.2 MW. Each CTG will be equipped with evaporative inlet air cooler/filter to enhance turbine performance in hot weather. Hot exhaust gases from the CTGs will be directed to two HRSGs where steam will be generated.

The HRSG units will be equipped with duct burners to increase steam output when additional electric power generation is necessary. The steam produced by the HRSGs will be combined to drive a single STG (ALSTOM MP24). The STG has a rated output of 40 MW without duct burning and 55 MW with duct burning. The total gross output of the MGS will be 139 MW and the net output will be 134 MW. (Ex. 1, pp. 3-5, 3-6, 3-43, 3-44.) Based on the design of the new units and site characteristics, the plant overall efficiency is estimated to be 49.33 percent at maximum firing at an annual average temperature of 65°F. (Ex. 1, p. 3-1.)

The HRSGs will also include selective catalytic reduction (SCR) emissions control equipment for reduction of oxides of nitrogen (NO_x) and an oxidation catalyst for reduction of carbon monoxide (CO) and volatile organic compound (VOC) emissions in the exhaust gas. Exhaust gases from each HRSG unit will be vented to the atmosphere through a 110-foot tall exhaust stack attached to each unit. (Ex. 1, p. 3-6; Ex. 34, p. 3-2.)

The project will use dry low NO_x (DLN) combusters with SCR and oxidizing catalysts to meet the current Best Available Control Technology (BACT) requirements of the South Coast Air Quality Management District (Air District). NO_x and CO emissions will be controlled to 2.0 parts per million, and VOCs will be controlled to 1.2 parts per million to comply with Air District requirements. (Ex. 1, p. 3-22.) The increase in regulated air pollutant emissions from the MGS will be offset by purchasing emission reduction credits (ERCs) for CO, suspended particulate matter of diameter less than or equal to 10 microns (PM_{10}), and VOCs; and Reclaim Trading Credits (RTCs) for NO_x from either the South Coast Air Quality Management District or from the open market. (RT 2/10/03, pp. 30-50; Ex. 37.)

Transmission Line and Natural Gas Facilities

The new generation will interconnect onsite at the existing Vernon Substation 69 kV bus located at Station A. There are no new transmission line facilities necessary for the MGS Project. (Ex. 1, pp. 3-1, 3-8, 3-9.)

Natural gas (fuel) will be supplied from a 1,300-foot pipeline that will be constructed to deliver fuel from the existing City of Vernon gas distribution system located along Fruitland Avenue. (Ex. 1, p. 3-49, § 3.8.3.6, Ex. 1, p. 6-1, § 6.1, and Ex. 34, p. 5.4-4). The pressure of natural gas delivered to the site is expected to be between 275-400 pounds per square inch gauge (psig). (Ex. 1, pp. 3-1, 3-14.)

Water Supply and Waste Water Treatment

The MGS is designed to operate with the minimum potable water requirements. The primary source of makeup water for the MGS will be reclaimed water supplied by the City and purchased from the Central Basin Municipal Water District (CBMWD) under a long-term contract. (Ex.1, pp. 3-1, 3-15.) It will be

delivered to the project site via an 18-inch reclaimed water pipeline connecting to the existing CBMWD reclaimed water distribution system. A new reclaimed water pipeline to serve the MGS will be routed in rights-of-way along roadways connecting to the existing CBMWD reclaimed water distribution system approximately 1.8 miles (about 10,000 feet) from the site at the intersection of Randolph Street and Newell Street. The pipeline will be constructed in a westerly direction for approximately 1,300 feet along Randolph Street and then north for approximately 5,200 feet along Boyle Avenue. At the intersection of Boyle Avenue and 50th Street, the line will head west along 50th Street for approximately 2,800 feet, then north into the project site. (*Ibid*.)

The MGS will use reclaimed water exclusively in the cooling tower arrays and will require a peak demand of approximately 1,000 gallons per minute (gpm) of reclaimed water. In order to meet the project's peak demand of 1000 gpm, CBMWD has committed to supply reclaimed water to meet the project's water demand in a Will Serve letter to the City. (Ex. 1, p. 3-15; Ex. 3, § 8.0, Figure 8-1.)

Potable water will only be used for domestic purposes, service water, and as an emergency back up supply to the project. (Ex. 1, p. 3-17, 7-5.) Potable water will be delivered via the City's existing 6-inch water line to the site. Additional potable water consumption at the MGS site is estimated at 17 gpm, peak. (Ex. 34, pp. 3.2-3.3.)

The final combined wastewater discharge from MGS will include the following streams: cooling tower blowdown, sanitary drains, turbine evaporative cooler blowdown, reverse osmosis (RO) system reject, HRSG blowdown, steam cycle drains, and oil/water separator discharge. The combined wastewater stream is estimated to average 230 gpm and will be directed to the local sewer for disposal. (Ex. 34, p. 3.3.)

A 1,300-foot long 15-inch sewer line from MGS to Fruitland Avenue will be required for discharge to the local sewer. From that point on, the existing sewer trunk is capable of handling all wastewater flows from the Project. The wastewater will flow through the County Sanitation District of Los Angeles County existing treatment facility. No improvements to the treatment facility are required. The treatment facility is capable of handling all wastewater flows from MGS. (Ex. 1, p. 3-18; Ex. 34, p. 3.3; Ex. 38, Project Description.)

Project Schedule

Applicant will begin project construction immediately following certification and commence commercial operation by last quarter of 2004. (Ex. 34, p. 3.3.) During the 16 to 18 month construction period, the project will provide a maximum of 179 construction jobs. During operation, the project will employ approximately 32 permanent staff. (Ex. 1, p. 3-35.) The facility has a planned life of 30 years or longer. (Ex. 1, p. 3-43.) Applicant estimates the capital costs associated with the project will be approximately $142 million. (Ex. 1, p. 3-40; Ex. 3, p. 4-4.)

FINDINGS AND CONCLUSIONS

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

1. The MGS project involves the construction and operation of a nominal 134-megawatt (MW) natural gas-fired combined cycle electrical generating facility in Vernon, California.

2. The MGS will be located in the City of Vernon on 3.4 acres of the City of Vernon's existing Station A, owned and operated by the City of Vernon.

3. The MGS consists of a two-on-one power island with two CTGs, one STG, and two HRSGs, other electrical generation and mechanical equipment, transformers, emission control equipment, and administrative facilities.

4. The MGS project will also include a 1,300-foot long natural gas pipeline, a 1,300-foot long sewer pipeline, and a 10,000-foot long reclaimed water pipeline.

5. The MGS will interconnect onsite at the existing Vernon Substation to serve the load of the customers of the City of Vernon. There are no new transmission line facilities necessary for the project.

We conclude that City of Vernon has described the Malburg Generating Station in sufficient detail to allow review in compliance with the provisions of both the Warren-Alquist Act and the California Environmental Quality Act (CEQA).

II. PROJECT ALTERNATIVES

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The MGS will be located within the site of Station A, an existing electric generating facility and, therefore, avoids the potential impacts associated with development of a greenfield power plant. Any offsite alternative could potentially result in increased environmental impacts from construction of an alternate power station and the necessary infrastructure. (Ex. 34, p. 6-4.)

The evidentiary record illustrates the benefits of the Malburg Generating Station site in the discussion of alternative sites and technologies as well as the "no project alternative." (Ex. 1, § 9.0; Ex. 34, p. 6-1 et seq.)

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

Methodology

To prepare the alternatives analysis, Staff used the methodology summarized below: (Ex. 34, p. 6-1.)

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

Staff initially found that the project posed potentially significant air quality impacts. Applicant has procured further mitigation, thus reducing all potential impacts to less than significant levels. Therefore, the evidentiary record establishes that there are no unmitigated impacts to the environment or public health and safety. (Ex. 34, p. 6-2; Ex. 35, p. 1-1; *see*, the Findings and Conclusions for each technical topic in this Decision.)

Project Objectives

Staff identified the project's major objectives as follows:

- Provide an efficient, cost-effective, and reliable source of electric generation to the City of Vernon's customers and to the Southern California area with the least impact to the environment.
- Select a generating unit that is highly efficient to maintain reasonable cost of generation;
- Select equipment that utilizes tested and reliable technology to assure reliable generation;

- Utilize Best Available Control Technology (BACT) to minimize air pollution emissions
- Locate the project at a site currently used for generation to minimize the need for new infrastructure improvements such as water, fuel supply and transmission facilities. (Ex. 34, p. 6-2.)

Alternative Site Location

Staff reviewed three sites identified by Applicant that satisfied the criteria for meeting project objectives:

- Alternative Site 1: A solid waste transfer site, located at 2221 East 55th Street.
- Alternative Site 2: A City storage yard, located at 2800 South Soto Street.
- Alternative Site 3: The existing City of Vernon Station A electrical generating facility, located at 2715 East 50th Street. (Ex. 34, p. 6-3.)

Alternative Site 1 would require construction of a new switchyard and transmission lines approximately one-half mile long each, a 2,500-foot long natural gas pipeline, a 22,000-foot reclaimed water pipeline and new water and sewer service. In addition, there could be potential environmental impacts at this site that would not result at the preferred MGS site. (Ex. 1, § 9.3; 34, p. 6-3.)

Alternative Site 2 would also require construction of a new switchyard, a one-half mile long transmission line, a 1,000-foot natural gas pipeline, and a 28,000-foot reclaimed water pipeline. This storage yard would have to be cleared and its contents moved to another location. There could also be additional environmental impacts not identified at the preferred MGS site. (Ex.1, § 9.3.2; Ex. 34, p. 6-4.)

Alternative Site 3 is the site preferred by the Applicant. An existing electrical generating facility is situated on this site and the new MGS generating units can interconnect to the existing 69 kV transmission system at the onsite Vernon Substation, eliminating the need to construct new transmission lines.

Additionally, the site has a potable water source and sewer service and is zoned for industrial use. A natural gas pipeline and a new sewer line, each approximately 1,300 feet long, and a new reclaimed water pipeline approximately 10,000 feet long, will be constructed to serve this site but these pipelines would need to be constructed to serve the alternative sites as well. Since the preferred site has been used for power generating purposes for nearly 70 years, no significant cultural, biological, visual, land use, or other site-specific impacts are anticipated. (Ex. 1, § 9.3.3; Ex. 34, p. 6-4.)

Project Size Alternatives

The generating capacity of MGS (134 MW for combined-cycle operation) was chosen to supply approximately 70 percent of the City's electric utility customers' projected 2003 peak load demand of 190 MW. Staff testified that a smaller plant would not necessarily reduce cumulative PM_{10} impacts (which depends on the turbines selected), would not meet the electricity demands of Vernon and the state, and would likely operate at a lower efficiency. A larger plant would exceed the power needs of the City and impose substantial infrastructure burdens, including additional transmission facilities, and increased emissions of air pollutants. (Ex. 34, p. 6-6.)

Technology Alternatives

Staff analyzed alternative technologies based on commercial availability, feasibility, environmental, health and safety impacts, and relative cost. (Ex. 34, pp. 6-4, 6-5.) Technologies such as hydroelectric, geothermal, solar, and wind power were rejected by Staff as not being capable of implementation within the City. (Ex. 34, p. 6-5.) Technologies relying on coal or other solid fossil fuels were rejected because of their higher air pollutant emission rates. *(Ibid.)*

Staff evaluated in more detail the following generating technologies:

- Natural gas-fired simple-cycle.

- Natural gas-fired conventional combined-cycle.
- Natural gas-fired conventional furnace/boiler steam turbine-generator.
- Natural gas-fired supercritical boiler steam turbine-generator.

Staff concluded that natural gas-fired combined cycle technology would be the most feasible for meeting project objectives because of its high efficiency, relatively low air pollutant emissions, and low generation costs. (Ex. 34, p. 6-6.)

No Project Alternative

The CEQA Guidelines require an analysis of the "no project" alternative to compare the impacts of approving the project with the impacts of not approving the project. (Cal. Code of Regs., tit. 14, § 15126.6(e).) In this case, the "no project" alternative assumes that the MGS would not be built. One consequence of the no project alternative is that approximately 1,500 acre-feet of reclaimed water would remain allocated to CBMVD and without the project-related water line extension, the availability of reclaimed water to other businesses would be precluded. Also, ambient air quality and noise in the area would remain unchanged. However, without the project, there would be a loss of generating capacity to serve California load, leading to an increased dependence on aging, less efficient power plants with higher emission rates. Thus, it is likely that a site in or near the City of Vernon will be developed for generation purposes in the near future. Applicant's proposal to locate the MGS at an existing power plant site avoids potential impacts that could occur at an alternative site. (Ex. 34, pp. 6-6, 6-7.)

Based on the analysis described above, Staff concluded that the MGS project is the preferable alternative. Staff does not believe that energy efficiency measures, alternative technologies, and/or alternative sites would achieve project objectives. (Ex. 34, p. 6-7.)

FINDINGS AND CONCLUSIONS

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

1. Locating the project at a site currently used for generation minimizes the need for new infrastructure development and eliminates the potential environmental effects of developing a greenfield site.

2. Locating the site close to the load center utilizes the existing transmission system to increase local reliability.

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

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

5. The MGS site design plan is more efficient and cost-effective than the alternative options.

6. Other technology alternatives such as geothermal, solar, or wind resources are either unavailable in the Vernon area or not capable of meeting project objectives.

7. The “no project” alternative would not avoid or substantially lessen potentially significant environmental impacts.

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

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

III. COMPLIANCE AND CLOSURE

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

SUMMARY OF THE EVIDENCE

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

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

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

- Set forth the duties and responsibilities of the Compliance Project Manager (CPM), the project owner, delegate agencies, and others;
- Set forth the requirements for handling confidential records and maintaining the compliance record;
- Establish procedures for settling disputes and making post-certification changes;

- State the requirements for periodic compliance reports and other administrative procedures necessary to verify the compliance status of all Commission imposed conditions; and

- Establish requirements for facility closure.

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

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

FINDINGS AND CONCLUSIONS

The evidence of record establishes:

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

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

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

GENERAL CONDITIONS OF CERTIFICATION

DEFINITIONS

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

SITE MOBILIZATION

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

GROUND DISTURBANCE

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

GRADING

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

CONSTRUCTION

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

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

START OF COMMERCIAL OPERATION

For compliance monitoring purposes, “commercial operation” is that phase of project development which begins after the completion of start-up and commissioning, where the power plant has reached steady-state production of

electricity with reliability at the rated capacity. For example, at the start of commercial operation, plant control is usually transferred from the construction manager to the plant operations manager.

COMPLIANCE PROJECT MANAGER RESPONSIBILITIES

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

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

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

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

The Energy Commission has established the following toll free telephone number for compliance-related questions: **1-800-858-0784.** Members of the public may call this number regarding power plant construction or operation-related questions, complaints or concerns.

Pre-Construction and Pre-Operation Compliance Meeting

The CPM may schedule pre-construction and pre-operation compliance meetings prior to the projected start-dates of construction, plant operation, or both. The purpose of these meetings will be to assemble both the Energy Commission's and the project owner's technical staff to review the status of all pre-construction or pre-operation requirements contained in the Energy Commission's conditions of certification to confirm that they have been met, or if they have not been met, to ensure that the proper action is taken. In addition, these meetings shall ensure, to the extent possible, that Energy Commission conditions will not delay the construction and operation of the plant due to oversight and to preclude any last minute, unforeseen issues from arising. Pre-construction meetings held during the certification process must be publicly noticed unless they are confined to administrative issues and processes.

Energy Commission Record

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

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

PROJECT OWNER RESPONSIBILITIES

It is the responsibility of the project owner to ensure that the general compliance conditions and the conditions of certification are satisfied. The general compliance conditions regarding post-certification changes specify measures that the project owner must take when requesting changes in the project design, compliance conditions, or ownership. Failure to comply with any of the conditions of certification or the general compliance conditions may result in reopening of the case and revocation of Energy Commission certification, an administrative fine, or other action as appropriate. A summary of the General Conditions of Certification is included as **Compliance Table 1** at the conclusion of this section. The designation after each of the following summaries of the General Compliance Conditions (**Com-1, Com-2,** etc.) refers to the specific General Compliance Condition contained in **Compliance Table 1**.

Construction Milestones, Compliance Condition of Certification-1 (COM-1)

The following is the procedure for establishing and enforcing milestones, which include milestone dates for pre-construction and construction phases of the project. As required in the 6-month AFC process, start of substantial construction must occur within 1-year of the Commission Decision. Therefore, construction milestones have been included as noted below. Milestones and method of verification must be established and agreed upon by the project owner and the CPM no later than 30 days after docketing of the Commission's final decision. If this deadline is not met, the CPM will establish the milestones.

I. ESTABLISH PRE-CONSTRUCTION MILESTONES TO ENABLE START OF SUBSTANTIAL CONSTRUCTION WITHIN ONE YEAR OF CERTIFICATION

1. Obtain site control.
2. Obtain financing.
3. Mobilize site.
4. Begin rough grading for permanent structures (start of construction).

II. ESTABLISH CONSTRUCTION MILESTONES FROM DATE OF START OF CONSTRUCTION

1. Begin pouring major foundation concrete.
2. Begin installation of major equipment.
3. Complete installation of major equipment.
4. Begin gas pipeline construction.
5. Complete gas pipeline interconnection.
6. Begin T-line construction.
7. Complete T-line interconnection.
8. Begin commercial operation within three years of the Commission's final decision.

The CPM will negotiate the above-referenced pre-construction and construction milestones with the project owner based on an expected schedule of construction. The CPM may agree to modify the final milestones from those listed above at any time prior to or during construction if the project owner demonstrates good-cause for not meeting the originally-established milestones. Otherwise, failure to meet milestone dates without a finding of good cause is considered cause for possible forfeiture of certification or other penalties.

III. A FINDING THAT THERE IS GOOD CAUSE FOR FAILURE TO MEET MILESTONES WILL BE MADE IF ANY OF THE FOLLOWING CRITERIA ARE MET:

1. The change in any milestone does not change the established commercial operation date milestone.
2. The milestone will be missed due to circumstances beyond the project owner’s control.
3. The milestone will be missed, but the project owner demonstrates a good-faith
4. The milestone will be missed due to unforeseen natural disasters or acts of God which prevent timely completion of the milestones.
5. The milestone will be missed due to requirements of the California ISO to maintain existing generation output.

Access, COM-2

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

agreeable to the project owner, the CPM reserves the right to make unannounced visits at any time.

Compliance Record, COM-3

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

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

Compliance Verification Submittals, COM-4

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

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

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

Verification lead times (e.g., 90, 60 and 30-days) associated with start of construction may require the project owner to file submittals during the certification process, particularly if construction is planned to commence shortly after certification.

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

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

All submittals shall be addressed as follows:

Compliance Project Manager, 01-AFC-25(C)
California Energy Commission
1516 Ninth Street (MS-2000)
Sacramento, CA 95814

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

Pre-Construction Matrix and Tasks Prior to Start of Construction COM-5

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 shall be included with the project owner's **first** compliance submittal or prior to the first pre-construction meeting, whichever comes first. It will be in the same format as the compliance matrix referenced above.

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

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

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

COMPLIANCE REPORTING

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

COMPLIANCE MATRIX, COM-6

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

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

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

MONTHLY COMPLIANCE REPORT, COM-7

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

During pre-construction and construction of the project, the project owner or authorized agent shall submit an original and five copies of the Monthly Compliance Report within 10 working days after the end of each reporting month. Monthly Compliance Reports shall be clearly identified for the month being reported. The reports shall contain, at a minimum:

1. a summary of the current project construction status, a revised/updated schedule if there are significant delays, and an explanation of any significant changes to the schedule;
2. documents required by specific conditions to be submitted along with the Monthly Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Monthly Compliance Report;
3. an initial, and thereafter updated, compliance matrix which shows the status of all conditions of certification and pre-construction and construction milestones (fully satisfied conditions do not need to be included in the matrix after they have been reported as closed);
4. a list of conditions and milestones that have been satisfied during the reporting period, and a description or reference to the actions which satisfied the condition;
5. a list of any submittal deadlines that were missed accompanied by an explanation and an estimate of when the information will be provided;
6. a cumulative listing of any approved changes to conditions of certification;
7. a listing of any filings with, or permits issued by, other governmental agencies during the month;
8. a projection of project compliance activities scheduled during the next two months. The project owner shall notify the CPM as soon as any changes are made to the project construction schedule that would affect compliance with conditions of certification or milestones;
9. a listing of the month's additions to the on-site compliance file; and
10. any requests to dispose of items that are required to be maintained in the project owner's compliance file.

ANNUAL COMPLIANCE REPORT, COM-8

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

1. an updated compliance matrix which shows the status of all conditions of certification (fully satisfied and/or closed conditions do not need to be included in the matrix after they have been reported as closed);
2. a summary of the current project operating status and an explanation of any significant changes to facility operations during the year;
3. documents required by specific conditions to be submitted along with the Annual Compliance Report. Each of these items must be identified in the transmittal letter, and should be submitted as attachments to the Annual Compliance Report;
4. a cumulative listing of all post-certification changes approved by the Energy Commission or cleared by the CPM;
5. an explanation for any submittal deadlines that were missed, accompanied by an estimate of when the information will be provided;
6. a listing of filings made to, or permits issued by, other governmental agencies during the year;
7. a projection of project compliance activities scheduled during the next year;
8. a listing of the year's additions to the on-site compliance file;
9. an evaluation of the on-site contingency plan for unplanned facility closure, including any suggestions necessary for bringing the plan up to date [see General Conditions for Facility Closure addressed later in this section]; and
10. a listing of complaints, notices of violation, official warnings, and citations received during the year, a description of the resolution of any resolved complaints, and the status of any unresolved complaints.
11. a listing of all outages planned for the coming year and a listing of all outages that occurred during the previous year, including the anticipated duration and the reason for each outage occurrence.

CONSTRUCTION AND OPERATION SECURITY PLAN, COM-9

Prior to commencing construction, a site-specific Security Plan for the construction phase shall be developed and maintained at the project site. Prior to commercial operation, a site-specific Security Plan for the operational phase shall be developed and maintained at the project site. The plans may be reviewed at the site by the CPM during compliance inspections.

Construction Security Plan

The Construction Security Plan must address:

1. site fencing enclosing the construction area;
2. use of security guards;
3. check-in procedure or tag system for construction personnel and visitors;

4. protocol for contacting law enforcement and the CPM in the event of suspicious activity or emergency; and
5. evacuation procedures.

Operation Security Plan

The Operations Security Plan must address:

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

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

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

CONFIDENTIAL INFORMATION, COM-10

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

DEPARTMENT OF FISH AND GAME FILING FEE, COM-11

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

Planning and Research at the time of filing of the notice of decision pursuant to Public Resources Code Section 21080.5.

REPORTING OF COMPLAINTS, NOTICES, AND CITATIONS, COM-12

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

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 of all complaint forms, notices of violation, notices of fines, official warnings, and citations, within 10 days of receipt, to the CPM. Complaints shall be logged and numbered. Noise complaints shall be recorded on the form provided in the **NOISE** conditions of certification. All other complaints shall be recorded on the complaint form (Attachment A).

FACILITY CLOSURE

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

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

CLOSURE DEFINITIONS

Planned Closure

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

Unplanned Temporary Closure

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

Unplanned Permanent Closure

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

GENERAL CONDITIONS FOR FACILITY CLOSURE

Planned Closure, COM-13

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

1. identify and discuss any impacts and mitigation to address significant adverse impacts associated with proposed closure activities and to address facilities, equipment, or other project related remnants that will remain at the site;
2. identify a schedule of activities for closure of the power plant site, transmission line corridor, and all other appurtenant facilities constructed as part of the project;

3. identify any facilities or equipment intended to remain on site after closure, the reason, and any future use; and
4. address conformance of the plan with all applicable laws, ordinances, regulations, standards, local/regional plans in existence at the time of facility closure, and applicable conditions of certification.

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

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

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

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

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

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

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

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

of all equipment. (Also see specific conditions of certification for the technical areas of Hazardous Materials Management and Waste Management.)

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

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

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

Unplanned Permanent Closure/On-Site Contingency Plan, COM-15

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

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

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

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

CBO DELEGATION AND AGENCY COOPERATION

In performing construction and operation monitoring of the project, Commission staff acts as, and has the authority of, the Chief Building Official (CBO). Commission staff may delegate CBO responsibility to either an independent third

party contractor or the local building official. Commission staff retains CBO authority when selecting a delegate CBO including enforcing and interpreting state and local codes, and use of discretion, as necessary, in implementing the various codes and standards.

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

ENFORCEMENT

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

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

NONCOMPLIANCE COMPLAINT PROCEDURES

Any person or agency may file a complaint alleging noncompliance with the conditions of certification. Such a complaint will be subject to review by the Energy Commission pursuant to Title 20, California Code of Regulations, section 1230 et seq., but in many instances the noncompliance can be resolved by using the informal dispute resolution process. Both the informal and formal complaint procedure, as described in current State law and regulations, are described below. They shall be followed unless superseded by current law or regulations.

Informal Dispute Resolution Procedure

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

This procedure may precede the more formal complaint and investigation procedure specified in Title 20, California Code of Regulations, section 1230 et

seq., but is not intended to be a substitute for, or prerequisite to it. This informal procedure may not be used to change the terms and conditions of certification as approved by the Energy Commission, although the agreed upon resolution may result in a project owner, or in some cases the Energy Commission staff, proposing an amendment.

The procedure encourages all parties involved in a dispute to discuss the matter and to reach an agreement resolving the dispute. If a dispute cannot be resolved, then the matter must be referred to the full Energy Commission for consideration via the complaint and investigation process. The procedure for informal dispute resolution is as follows:

Request for Informal Investigation

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

Upon receipt of a request for informal investigation, the CPM shall promptly notify the project owner of the allegation by telephone and letter. All known and relevant information of the alleged noncompliance shall be provided to the project owner and to the Energy Commission staff. The CPM will evaluate the request and the information to determine if further investigation is necessary. If the CPM finds that further investigation is necessary, the project owner will be asked to promptly investigate the matter and within seven working days of the CPM's request, provide a written report of the results of the investigation, including corrective measures proposed or undertaken, to the CPM. Depending on the urgency of the noncompliance matter, the CPM may conduct a site visit and/or request the project owner to provide an initial report, within 48 hours, followed by a written report filed within seven days.

Request for Informal Meeting

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

1. immediately schedule a meeting with the requesting party and the project owner, to be held at a mutually convenient time and place;
2. secure the attendance of appropriate Energy Commission staff and staff of any other agencies with expertise in the subject area of concern, as necessary;

3. conduct such meeting in an informal and objective manner so as to encourage the voluntary settlement of the dispute in a fair and equitable manner; and
4. after the conclusion of such a meeting, promptly prepare and distribute copies to all in attendance and to the project file, a summary memorandum which fairly and accurately identifies the positions of all parties and any conclusions reached. If an agreement has not been reached, the CPM shall inform the complainant of the formal complaint process and requirements provided under Title 20, California Code of Regulations, section 1230 et seq.

Formal Dispute Resolution Procedure-Complaints and Investigations

If either the project owner, Energy Commission staff, or the party requesting an investigation is not satisfied with the results of the informal dispute resolution process, such party may file a complaint or a request for an investigation with the Energy Commission's General Counsel. Disputes may pertain to actions or decisions made by any party including the Energy Commission's delegate agents. Requirements for complaint filings and a description of how complaints are processed are in Title 20, California Code of Regulations, section 1230 et seq.

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

POST CERTIFICATION CHANGES TO THE ENERGY COMMISSION DECISION: AMENDMENTS, INSIGNIFICANT PROJECT CHANGES AND VERIFICATION CHANGES, COM-16

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

A petition is required for **amendments** and for **insignificant project changes**. For verification changes, a letter from the project owner is sufficient. In all cases, the petition or letter requesting a change should be submitted to the Energy Commission's Docket in accordance with Title 20, California Code of Regulations, section 1209.

The criteria that determine which type of change process applies are explained below.

AMENDMENT

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

INSIGNIFICANT PROJECT CHANGE

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

VERIFICATION CHANGE

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

KEY EVENTS LIST, COM-8

PROJECT: **Malburg Generating Station Combined Cycle Project**

DOCKET #: **01-AFC-25(C)**

COMPLIANCE PROJECT MANAGER: _____

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

TABLE 1
COMPLIANCE SECTION
SUMMARY of GENERAL CONDITIONS OF CERTIFICATION

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
COM-1	4	Start of Construction	The project owner shall commence substantial construction within one year of the Commission decision.
COM-2	5	Access	The project owner shall grant Energy Commission staff and delegate agencies or consultants unrestricted access to the power plant site.
COM-3	5	Compliance Record	The project owner shall maintain project files on-site. Energy Commission staff and delegate agencies shall be given unrestricted access to the files.
COM-4	5	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.
COM-5	6	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.
COM-6	7	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.
COM-7	8	Monthly Compliance Report including a Key Events List	During construction, the project owner shall submit Monthly Compliance Reports (MCRs) which include specific information. The first MCR is due the month following the Commission business meeting date on which the project was approved and shall include an initial list of dates for each of the events identified on the Key Events List.

CONDITION NUMBER	PAGE #	SUBJECT	DESCRIPTION
COM-8	8	Annual Compliance Reports	After construction ends and throughout the life of the project, the project owner shall submit Annual Compliance Reports (ACRs) which include specific information. The first ACR is due after the air district has issued a Permit to Operate.
COM-9	9	Security Plans	Prior to commencing construction, the project owner shall submit a Construction Security Plan. Prior to commencing operation, the project owner shall submit an Operation Security Plan.
COM-10	10	Confidential Information	Any information the project owner deems confidential shall be submitted to the Commission's Dockets Unit.
COM-11	10	Dept of Fish and Game Filing Fee	The project owner shall pay a filing fee of $850 at the time of project certification.
COM-12	11	Reporting of Complaints, Notices and Citations	Within 10 days of receipt, the project owner shall report to the CPM, all notices, complaints, and citations.
COM-13	12	Planned Facility Closure	The project owner shall submit a closure plan to the CPM at least twelve months prior to commencement of a planned closure.
COM-14	13	Unplanned Temporary Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned temporary closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-15	14	Unplanned Permanent Facility Closure	To ensure that public health and safety and the environment are protected in the event of an unplanned permanent closure, the project owner shall submit an on-site contingency plan no less than 60 days prior to commencement of commercial operation.
COM-16	16	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: **Malburg Generating Station Combined Cycle** AFC Number: **01-AFC-25**
COMPLAINT LOG NUMBER _____ Complainant's name and address: Phone number:
Date and time complaint received: Indicate if by telephone or in writing (attach copy if written): Date of first occurrence:
Description of complaint (including dates, frequency, and duration):
Findings of investigation by plant personnel: Indicate if complaint relates to violation of a CEC requirement: Date complainant contacted to discuss findings:
Description of corrective measures taken or other complaint resolution: Indicate if complainant agrees with proposed resolution: If not, explain: Other relevant information:
If corrective action necessary, date completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct. Plant Manager's Signature: _____ Date:

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

IV. ENGINEERING ASSESSMENT

The broad engineering assessment conducted for the Malburg Generating Station consists of separate analyses that examine facility design, engineering, efficiency, and reliability of the project. These analyses include the onsite power generating equipment and project-related facilities (transmission lines, natural gas supply pipeline, and water supply pipelines).

A. FACILITY DESIGN

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

The AFC describes the preliminary facility design for the project.[3] The Commission's analysis is limited, therefore, to assessing whether the power plant and linear facilities are described with sufficient detail to assure that the project can be designed and constructed in accordance with applicable engineering laws, ordinances, regulations, and standards (LORS). The analysis also considers whether special design features will be necessary to deal with unique site conditions that could impact public health and safety, the environment, or the operational reliability of the project. (Ex. 34, p. 5.5-1.)

Staff proposed several Conditions of Certification, adopted by the Commission,[4] which establish a design review and construction inspection process to verify compliance with applicable design standards and special design requirements.

[3] Ex. 1, §§ 3.0, 4.0, and 6.0, Appendix B; Ex. 2.)

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

(Ex. 34, pp. 5.1-4 et seq.) The project will be designed and constructed in conformance with the latest edition of the California Building Code (currently the 1998 CBC) and other applicable codes and standards in effect at the time construction actually begins. (Ex. 34, p. 5.1-3.) Condition of Certification **GEN-1** incorporates this requirement.

Staff considered potential geological hazards and reviewed the preliminary project design with respect to site preparation and development; major project structures, systems and equipment; mechanical systems; electrical systems; and related facilities such as the gas pipeline, water pipelines, and underground transmission lines. (Ex. 34, p. 5.1-2 et seq.; Ex. 1, §§ 3.0, and 6.0, Appendix B.)

The project will employ site preparation and development criteria consistent with accepted industry standards. This includes design practices and construction methods for grading, flood protection, erosion control, site drainage, and site access. (Ex. 1, § 3.5; Ex. 34, pp. 5.1-2, 5.1-14.) Condition **CIVIL-1** ensures that these activities will be conducted in compliance with applicable LORS.

Major structures, systems, and equipment include those structures and associated components necessary for power production or facilities used for storage of hazardous or toxic materials. (Ex. 1, Appendix B.) Condition **GEN-2** includes a list of the major structures and equipment for the project.

The power plant site is located in Seismic Zone 4, the highest level of potential ground shaking in California. (Ex. 1, § 3.0, Appendix B; Ex. 34, p. 5.1-2.) The 1998 CBC requires specific “lateral force” procedures for different types of structures to determine their seismic design. (Ex. 1, Appendix B; Ex. 34, p. 5.1-3.) To ensure that project structures are analyzed using the appropriate lateral force procedure, Condition **STRUC-1** requires the project owner to submit its

proposed lateral force procedures to the Chief Building Official (CBO)[5] for review and approval prior to the start of construction. (Ex. 34, pp. 5.1-15, 5.1-16.)

The mechanical systems for the project are designed to the specifications of applicable LORS. Conditions **MECH**-1 through **MECH**-3 ensure that the project complies with these standards. (Ex. 34, pp. 5.1-18-5.1-20.)

Major electrical features other than the transmission system include generators, power control wiring, protective relaying, grounding system, cathodic protection system and site lighting. (Ex. 1, Appendix B.) Condition **ELEC-1** ensures that design and construction of these electrical features will comply with applicable LORS. (Ex. 34, p. 5.1-20.)

The evidence also addresses project closure. (Ex. 34, pp. 5.1-4, 5.1-5.) To ensure that decommissioning of the facility will conform with applicable LORS to protect the environment and public health and safety, the Applicant shall submit a decommissioning plan, which is described in the general closure provisions of the Compliance Monitoring and Closure plan. (*See* the Chapter entitled "General Conditions" in this Decision, *ante*.)

Finally, the Conditions of Certification specify the roles, qualifications, and responsibilities of engineering personnel who will oversee project design and construction. These Conditions require approval of the CBO after appropriate inspections by qualified engineers. No element of construction may proceed without approval of the CBO. (Ex. 34, p. 5.1-4.)

[5] The Energy Commission is the CBO for energy facilities certified by the Commission. We may delegate CBO authority to local building officials to carry out design review and construction inspections. When CBO duties are delegated to local authorities, the Commission requires a Memorandum of Understanding with the delegated CBO to assign the roles and responsibilities described in Conditions of Certification **GEN-1** through **GEN-8**. (Ex. 34, p. 5.1-3.)

FINDINGS AND CONCLUSIONS

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

1. The Malburg Generation Station is currently in the preliminary design stage.

2. The evidence of record contains sufficient information to establish that the proposed facility can be designed and constructed in conformity with the applicable laws, ordinances, regulations, and standards (LORS) set forth in the appropriate portions of Appendix A of this Decision.

3. The Conditions of Certification set forth below are necessary to ensure that the project is designed and constructed both in accordance with applicable law and in a manner that protects environmental quality and public health and safety.

4. The Conditions of Certification below and the **General Conditions,** included in a separate Chapter of this Decision, establish requirements to be followed in the event of facility closure.

We therefore conclude that implementation of the Conditions of Certification listed below ensure that the Malburg Generation Station can be designed and constructed in conformance with applicable laws.

CONDITIONS OF CERTIFICATION

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

In the event that the initial engineering designs are submitted to the CBO when a successor to the 1998 CBC is in effect, the 1998 CBC provisions identified herein shall be replaced with the applicable successor

provisions. Where, in any specific case, different sections of the code specify different materials, methods of construction or other requirements, the most restrictive shall govern. Where there is a conflict between a general requirement and a specific requirement, the specific requirement shall govern.

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

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

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

Table 1: Major Structures and Equipment List

Equipment/System	Quantity (Plant)
Combustion Turbine (CT) Foundation and Connections	2
Combustion Turbine Generator Foundation and Connections	2
Steam Turbine (ST) Foundation and Connections	1
Steam Turbine Generator Foundation and Connections	1
Steam Condenser and Auxiliaries Foundation and Connections	1
Heat Recovery Steam Generator (HRSG) Structure, Foundation and Connections	2
High Pressure HRSG Feed Pumps Foundation and Connections	4
Low Pressure HRSG Feed Pumps Foundation and Connections	4
HRSG Stack Structure, Foundation and Connections	2
CT Main Transformer Foundation and Connections	2
ST Main Transformer Foundation and Connections	1
Condensate Pumps Foundation and Connections	2
Circulating Water Pumps Foundation and Connections	2
Water Treatment Makeup Pumps Foundation and Connections	2
Cooling Tower Makeup Pumps Foundation and Connections	2
Raw Water Storage Tank and Pump Foundations and Connections	1
Water Treatment System Structure, Foundation and Connections	1
Condensate Storage and Transfer System Foundation and Connections	1
Condensate Water Tank Foundation and Connections	1
Closed Cooling Water Heat Exchanger Foundation and Connections	1
Auxiliary Cooling Water Pumps Foundation and Connections	2
Waste Water Collection System Foundation and Connections	1
Fuel gas Heater Foundation and Connections	1
Fire Protection System	1
Cooling Tower Structure, Foundation and Connections	1
Generator Breakers Foundation and Connections	3
Transformer Breakers Foundation and Connections	3
Natural Gas Metering Station Structure, Foundation and Connections	1
Natural Gas Compressor Foundation and Connections	3
Natural Gas Compressor Enclosure Structure, Foundation and Connections	1
Ammonia Storage Facility Foundation and Connections	1
Boiler Chemical Feed Skids Foundation and Connections	2
Vacuum Pump Skid Foundation and Connections	2
Auxiliary Space Cooling Water Skid Foundation and Connections	1
Ammonia Vaporizer System Foundation and Connections	2

Equipment/System	Quantity (Plant)
Continuous Emissions Monitoring Systems Structure, Foundation and Connections	1
Instrument/Service Air System Foundation and Connections	2
MCC/Relaying/Metering Building Structure, Foundation and Connections	1
Control Room Structure, Foundation and Connections	1
Potable Water Systems	1 Lot
Drainage Systems (including sanitary drain and waste)	1 Lot
High Pressure and Large Diameter Piping	1 Lot
HVAC and Refrigeration Systems	1 Lot
Temperature Control and Ventilation Systems (including water and sewer connections)	1 Lot
Building Energy Conservation Systems	1 Lot
Electrical Duct Banks	1 Lot

GEN-3 The project owner shall make payments to the CBO for design review, plan check and construction inspection based upon a reasonable fee schedule to be negotiated between the project owner and the CBO. These fees may be consistent with the fees listed in the 1998 CBC [Chapter 1, Section 107 and Table 1-A, Building Permit Fees; Appendix Chapter 33, Section 3310 and Table A-33-A, Grading Plan Review Fees; and Table A-33-B, Grading Permit Fees], adjusted for inflation and other appropriate adjustments; may be based on the value of the facilities reviewed; may be based on hourly rates; or may be as otherwise agreed by the project owner and the CBO.

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

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

The RE may delegate responsibility for portions of the project to other registered engineers. Registered mechanical and electrical engineers may

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

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

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

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

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

If the RE or the delegated engineer(s) are subsequently reassigned or replaced, the project owner has five days in which to submit the resume and registration

number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-5 Prior to the start of rough grading, the project owner shall assign at least one of each of the following California registered engineers to the project: A) a civil engineer; B) a soils engineer, or a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; and C) an engineering geologist. Prior to the start of construction, the project owner shall assign at least one of each of the following California registered engineers to the project: D) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient in the design of power plant structures and equipment supports; E) a mechanical engineer; and F) an electrical engineer. [California Business and Professions Code section 6704 et seq., and sections 6730, 6731 and 6736 requires state registration to practice as a civil engineer or structural engineer in California.] All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification for 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 (e.g., proposed earthwork, civil structures, power plant structures, equipment support). No segment of the project shall have more than one responsible engineer. The transmission line may be the responsibility of a separate California registered electrical engineer.

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

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

A: The civil engineer shall:

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

CBO. At a minimum, these include: grading, site preparation, excavation, compaction, construction of secondary containment, foundations, erosion and sedimentation control structures, drainage facilities, underground utilities, culverts, site access roads and sanitary sewer systems; and

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

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

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

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

C: The engineering geologist shall:

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

D: The design engineer shall:

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

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

F: The electrical engineer shall:

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

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

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

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

If the designated responsible engineer is subsequently reassigned or replaced, the project owner has 5 days in which to submit the resume and registration number of the newly assigned engineer to the CBO for review and approval. The project owner shall notify the CPM of the CBO's approval of the new engineer within five days of the approval.

GEN-6 Prior to the start of an activity requiring special inspection, the project owner shall assign to the project, qualified and certified special inspector(s) who shall be responsible for the special inspections required by the 1998 CBC, Chapter 17 [Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection)]; and Section 106.3.5, Inspection and observation program. All transmission facilities (lines, switchyards, switching stations and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

The special inspector shall:

1. Be a qualified person who shall demonstrate competence, to the satisfaction of the CBO, for inspection of the particular type of construction requiring special or continuous inspection;
2. Observe the work assigned for conformance with the approved design drawings and specifications;
3. Furnish inspection reports to the CBO and RE. All discrepancies shall be brought to the immediate attention of the RE for correction, then, if uncorrected, to the CBO and the CPM for corrective action [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]; and
4. Submit a final signed report to the RE, CBO, and CPM, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable provisions of the applicable edition of the CBC.

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

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

If the special inspector is subsequently reassigned or replaced, the project owner has 5 days in which to submit the name and qualifications of the newly assigned special inspector to the CBO for approval. The project owner shall notify the CPM of the CBO's approval of the newly assigned inspector within five days of the approval.

GEN-7 If any discrepancy in design and/or construction is discovered in any engineering work that has undergone CBO design review and approval, the project owner shall document the discrepancy and recommend the corrective action required [1998 CBC, Chapter 1, Section 108.4, Approval Required; Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector; Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The discrepancy documentation shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this Condition of Certification and, if appropriate, the applicable sections of the CBC and/or other LORS.

Verification: The project owner shall transmit a copy of the CBO's approval of any corrective action taken to resolve a discrepancy to the CPM in the next Monthly Compliance Report. If any corrective action is disapproved, the project owner shall advise the CPM, within 5 days, of the reason for disapproval and the revised corrective action to obtain CBO's approval.

GEN-8 The project owner shall obtain the CBO's final approval of all completed work that has undergone CBO design review and approval. The project owner shall request the CBO to inspect the completed structure and review the submitted documents. When the work and the "as-built" and "as graded" plans conform to the approved final plans, the project owner shall notify the CPM regarding the CBO's final approval. The marked up "as-built" drawings for the construction of structural and architectural work shall be submitted to the CBO. Changes approved by the CBO shall be identified on the "as-built" drawings [1998 CBC, Section 108, Inspections]. The project owner shall retain one set of approved engineering plans, specifications and calculations at the project site or at another accessible location during the operating life of the project [1998 CBC, Section 106.4.2, Retention of Plans].

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

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

1. Design of the proposed drainage structures and the grading plan;
2. An erosion and sedimentation control plan;
3. Related calculations and specifications, signed and stamped by the responsible civil engineer; and
4. Soils report as required by the 1998 CBC [Appendix Chapter 33, Section 3309.5, Soils Engineering Report; and Section 3309.6, Engineering Geology Report].

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

CIVIL-2 The resident engineer shall, if appropriate, stop all earthwork and construction in the affected areas when the responsible soils engineer or geotechnical engineer or civil engineer experienced and knowledgeable in the practice of soils engineering identifies unforeseen adverse soil or geologic conditions. The project owner shall submit modified plans, specifications and calculations to the CBO based on these new conditions. The project owner shall obtain approval from the CBO before resuming earthwork and construction in the affected area [1998 CBC, Section 104.2.4, Stop orders].

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

CIVIL-3 The project owner shall perform inspections in accordance with the 1998 CBC, Chapter 1, Section 108, Inspections; Chapter 17, Section 1701.6, Continuous and Periodic Special Inspection; and Appendix Chapter 33, Section 3317, Grading Inspection. All plant site-grading operations for which a grading permit is required shall be subject to inspection by the CBO.

If, in the course of inspection, it is discovered that the work is not being performed in accordance with the approved plans, the discrepancies shall be

reported immediately to the resident engineer, the CBO and the CPM [1998 CBC, Appendix Chapter 33, Section 3317.7, Notification of Noncompliance]. The project owner shall prepare a written report detailing all discrepancies and non-compliance items, and the proposed corrective action, and send copies to the CBO and the CPM.

Verification: Within 5 days of the discovery of any discrepancies, the resident engineer shall transmit to the CBO and the CPM a Non-Conformance Report (NCR) and the proposed corrective action. Within five (5) days of resolution of the NCR, the project owner shall submit the details of the corrective action to the CBO and the CPM. A list of NCRs, for the reporting month, shall also be included in the following Monthly Compliance Report.

CIVIL-4 After completion of finished grading and erosion and sedimentation control and drainage facilities, the project owner shall obtain the CBO's approval of the final "as-graded" grading plans and final "as-built" plans for the erosion and sedimentation control facilities [1998 CBC, Section 109, Certificate of Occupancy].

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

STRUC-1 Prior to the start of any increment of construction of any major structure or component listed in **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;
3. Large field fabricated tanks; and
4. Turbine/generator pedestal.

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

The project owner shall:

1. Obtain approval from the CBO of lateral force procedures proposed for project structures;
2. Obtain approval from the CBO for the final design plans, specifications, calculations, soils reports and applicable quality control procedures. If there are conflicting requirements, the more stringent shall govern (i.e., highest loads, or lowest allowable stresses shall govern). All plans, calculations and specifications for foundations that support structures shall be filed concurrently with the structure plans, calculations and specifications [1998 CBC, Section 108.4, Approval Required];
3. Submit to the CBO the required number of copies of the structural plans, specifications, calculations and other required documents of the designated major structures at least 60 days (or a lesser number of days mutually agreed to by the project owner and the CBO) prior to the start of on-site fabrication and installation of each structure, equipment support, or foundation [1998 CBC, Section 106.4.2, Retention of plans; and Section 106.3.2, Submittal documents]; and
4. Ensure that the final plans, calculations and specifications clearly reflect the inclusion of approved criteria, assumptions and methods used to develop the design. The final designs, plans, calculations and specifications shall be signed and stamped by the responsible design engineer [1998 CBC, Section 106.3.4, Architect or Engineer of Record].

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of construction of any structure or component listed in **Facility Design TABLE 1** of Condition of Certification **GEN-2** above, the project owner shall submit to the CBO, with a copy to the CPM, the responsible design engineer's signed statement that the final design plans, specifications and calculations conform with all of the requirements set forth in the Energy Commission's Decision.

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

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

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

1. Concrete cylinder strength test reports (including date of testing, date sample taken, design concrete strength, tested cylinder strength, age of test, type and size of sample, location and quantity of concrete placement from which sample was taken, and mix design designation and parameters);
2. Concrete pour sign-off sheets;
3. Bolt torque inspection reports (including location of test, date, bolt size, and recorded torques);
4. Field weld inspection reports (including type of weld, location of weld, inspection of non-destructive testing (NDT) procedure and results, welder qualifications, certifications, qualified procedure description or number (ref: AWS); and
5. Reports covering other structural activities requiring special inspections shall be in accordance with the 1998 CBC, Chapter 17, Section 1701, Special Inspections; Section 1701.5, Type of Work (requiring special inspection); Section 1702, Structural Observation and Section 1703, Nondestructive Testing.

Verification: If a discrepancy is discovered in any of the above data, the project owner shall, within 5 days, prepare and submit an NCR describing the nature of the discrepancies to the CBO, with a copy of the transmittal letter to the CPM [1998 CBC, Chapter 17, Section 1701.3, Duties and Responsibilities of the Special Inspector]. The NCR shall reference the Condition(s) of Certification and the applicable CBC chapter and section. Within 5 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 fifteen (15) days. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action to obtain CBO's approval.

STRUC-3 The project owner shall submit to the CBO design changes to the final plans required by the 1998 CBC, Chapter 1, Section 106.3.2, Submittal documents and Section 106.3.3, Information on plans and specifications, including the revised drawings, specifications, calculations, and a complete description of, and supporting rationale for, the proposed changes, and shall give the CBO prior notice of the intended filing.

Verification: On a schedule suitable to the CBO, the project owner shall notify the CBO of the intended filing of design changes, and shall submit the

required number of sets of revised drawings and the required number of copies of the other above-mentioned documents to the CBO, with a copy of the transmittal letter to the CPM. The project owner shall notify the CPM, via the Monthly Compliance Report, when the CBO has approved the revised plans.

STRUC-4 Tanks and vessels containing quantities of toxic or hazardous materials exceeding amounts specified in Chapter 3, Table 3-E of the 1998 CBC shall, at a minimum, be designed to comply with the requirements of this Chapter.

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

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

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

The responsible mechanical engineer shall stamp and sign all plans, drawings and calculations for the major piping and plumbing systems subject to the CBO design review and approval, and submit a signed statement to the CBO when the said proposed piping and plumbing systems have been designed, fabricated and installed in accordance with all of the applicable laws, ordinances, regulations and industry standards [Section 106.3.4, Architect or Engineer of Record], which may include, but not be limited to:
American National Standards Institute (ANSI) B31.1 (Power Piping Code);

ANSI B31.2 (Fuel Gas Piping Code);

ANSI B31.3 (Chemical Plant and Petroleum Refinery Piping Code);

ANSI B31.8 (Gas Transmission and Distribution Piping Code);

Title 24, California Code of Regulations, Part 5 (California Plumbing Code);

Title 24, California Code of Regulations, Part 6 (California Energy Code, for building energy conservation systems and temperature control and ventilation systems);

Title 24, California Code of Regulations, Part 2 (California Building Code); and

Specific City/County code.

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

Verification: At least 30 days (or project owner and CBO approved alternative timeframe) prior to the start of any increment of major piping or plumbing construction listed in **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 the applicable LORS, and shall send the CPM a copy of the transmittal letter in the next Monthly Compliance Report.

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

MECH-2 For all pressure vessels installed in the plant, the project owner shall submit to the CBO and California Occupational Safety and Health Administration (Cal-OSHA), prior to operation, the code certification papers and other documents required by the applicable LORS. Upon completion of the installation of any pressure vessel, the project owner shall request the appropriate CBO and/or Cal-OSHA inspection of said installation [1998 CBC, Section 108.3, Inspection Requests].

The project owner shall:

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

2. Have the responsible design engineer submit a statement to the CBO that the proposed final design plans, specifications and calculations

conform to all of the requirements set forth in the appropriate ASME Boiler and Pressure Vessel Code or other applicable codes.

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

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

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

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

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

ELEC-1 Prior to the start of any increment of electrical construction for electrical equipment and systems 480 volts and higher, listed below, with the exception of underground duct work and any physical layout drawings and drawings not related to code compliance and life safety, the project owner shall submit, for CBO design review and approval, the proposed final design, specifications and calculations [CBC 1998, Section 106.3.2,

Submittal documents]. Upon approval, the above listed plans, together with design changes and design change notices, shall remain on the site or at another accessible location for the operating life of the project. The project owner shall request that the CBO inspect the installation to ensure compliance with the requirements of applicable LORS [1998 CBC, Section 108.4, Approval Required, and Section 108.3, Inspection Requests]. All transmission facilities (lines, switchyards, switching stations, and substations) are handled in Conditions of Certification in the **Transmission System Engineering** section of this document.

A. Final plant design plans to include:
   1. one-line diagrams for the 13.8 kV, 4.16 kV and 480 V systems; and
   2. system grounding drawings.

B. Final plant calculations to establish:
   1. short-circuit ratings of plant equipment;
   2. ampacity of feeder cables;
   3. voltage drop in feeder cables;
   4. system grounding requirements;
   5. coordination study calculations for fuses, circuit breakers and protective relay settings for the 13.8 kV, 4.16 kV and 480 V systems;
   6. system grounding requirements; and
   7. lighting energy calculations.

C. The following activities shall be reported to the CPM in the Monthly Compliance Report:
   1. Receipt or delay of major electrical equipment;
   2. Testing or energization of major electrical equipment; and
   3. A signed statement by the registered electrical engineer certifying that the proposed final design plans and specifications conform to requirements set forth in the Energy Commission Decision.

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

B. POWER PLANT EFFICIENCY

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

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

1. Potential Effects on Energy Supplies and Resources

The MGS will burn natural gas at a maximum rate of 810 million Btu per hour lower heating value (LHV) without duct firing, and 951 million BTU per hour with duct firing. (EX. 1, § 3.4.6; Ex. 34, p. 5.3-2.) According to Staff, this is a substantial rate of energy consumption that could impact energy supplies or resources. (Ex. 34, p. 5.3-2; Cal. Code of Regs., tit. 14, § 15000 et seq., Appendix F.)

2. Need for Additional Energy Supplies or Capacity

Natural gas for the MGS will be delivered by City of Vernon via a new 1,300-foot section of 10-inch pipeline. The City of Vernon system is capable of delivering the required quantity of gas to the MGS. Furthermore, the City of Vernon gas supply represents an adequate source for a project of this size. (Ex. 1, p. 3-49, §

3.8.3.6, Ex. 1, p. 6-1, § 6.1, and Ex. 34, p. 5.4-4.) It is, therefore, highly unlikely that the project could pose a substantial increase in demand for natural gas in California. (Ex. 34, p. 5.3-2.) Assuming that the existing availability of natural gas and conveyance systems remain stable for the life of the project, it is highly unlikely the MGS would require development of new fuel supply sources. (Ex. 34, p. 5.3-3.) *(See* **Power Plant Reliability** in this Decision*.)*

3. Compliance with Energy Standards

No standards apply to the efficiency of MGS or other non-cogeneration projects. (Ex. 34, p. 5.3-3; s*ee* Pub. Resources Code, § 25134.)

4. Alternatives to Wasteful or Inefficient Energy Consumption

Applicant provided information on alternative generating technologies, which were reviewed by Staff. (Ex. 1, § 1.11; Ex. 34, p. 5.3-4; *See* the **Alternatives** section of this Decision.) Given the project objectives, location, and air pollution control requirements, Staff concluded that only natural gas-burning technologies are feasible. (*Ibid*.)

Under expected project conditions, electricity will be generated at a full load efficiency of approximately 51.58 percent LHV without duct burning and 49.33 percent LHV with duct burning.[6] (Ex. 34, p. 5.3-2.)

Project fuel efficiency, and therefore its rate of energy consumption, is determined by the configuration of the power producing system and by selection of generating equipment. (Ex. 34, p. 5.3-3.) MGS is configured as a combined cycle power plant. Electricity will be produced by two gas turbines with a reheat steam turbine that operates on heat energy recuperated from gas turbine

[6] The average fuel efficiency of a typical utility company baseload power plant is approximately 35 percent LHV. (Ex. 34, p. 5.3-2.)

exhaust. By recovering this heat, which would otherwise be lost up the exhaust stacks, the efficiency of a combined cycle power plant is considerably increased compared with either a gas turbine or a steam turbine operating alone. Staff concluded that the proposed configuration is well suited to the large, steady loads met by a baseload plant. (Ex. 1, §§ 1.1, 1.2, 3.1, 3.4, 3.8; Ex. 34, p. 5.3-3.)

Project efficiency will also be enhanced by inlet air coolers, HRSG duct burners (re-heaters), two-pressure HRSG and steam turbine units and circulating water system. (Ex. 1, §§ 1.1, 1.2, 3.1, 3.4.3, 3.4.4, 3.8.3.1; Ex. 34, p. 5.3-3.) Staff believes these features contribute to meaningful efficiency enhancement to the MGS. The two-train CT/HRSG configuration also allows for high efficiency during unit turndown because one CT can be shut down, leaving one fully loaded, efficiently operating CT instead of having two CTs operating at an inefficient 50 percent load. *(Ibid.)*

Staff testified that the Alstom GTX100 turbine to be employed in the MGS represents one of the most modern and efficient such machines now available. The Applicant will employ two Alstom GTX100 gas turbine generators in a two-on-one combined cycle power train (Ex. 1 §§ 1.1, 1.2, 3.1, 3.4.3, 3.4.4.1, Ex. 34, p. 5.3-3.). The Alstom GTX100 in a two-on-one combined cycle configuration is nominally rated at 124.5 MW and 54 percent efficiency LHV at ISO conditions. *(Ibid.)*

Staff also analyzed whether the MGS would result in cumulative energy consumption impacts. Staff found that there are no nearby projects that have the potential for cumulative consumption or energy impacts (Ex. 34, p. 5.3-6.)

FINDINGS AND CONCLUSIONS

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

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

2. MGS will not consume natural gas in a wasteful, inefficient, or unnecessary manner.

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

4. The project design, incorporating a two-on-one power train and employing the highly efficient Alstom GXT100 turbine, will allow the power plant to generate electricity at full load with optimal efficiency.

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

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

C. POWER PLANT RELIABILITY

The Warren-Alquist Act requires the Commission to examine the safety and reliability of the proposed power plant, including provisions for emergency operations and shutdowns. [(Pub. Resources Code, § 25520(b).] There are presently no laws, ordinances, regulations, or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Commission must determine whether the project will be designed, sited, and operated to ensure safe and reliable operation. [(Cal. Code of Regs., tit. 20, § 1752(c)(2).]

In California's restructured electric power market, the California Independent System Operator, (Cal-ISO) has the primary responsibility for maintaining system reliability. To provide an adequate supply of reliable power, Cal-ISO has imposed certain requirements on power plants selling ancillary services and holding reliability must-run contracts, such as: (1) filing periodic reports on reliability; (2) reporting all outages and their causes; and (3) scheduling all planned maintenance outages with the Cal-ISO. However, neither Cal-ISO nor other power grid operators have established clear guidelines for reliability standards. While we acknowledge the evolving nature of state policy on power production and distribution, our findings in this case are limited to the evidence of record. The Commission believes that power plant owners should continue to maintain the same levels of reliability that the power industry has achieved in recent years. (Ex. 34, p. 5.4-2.)

Summary and Discussion of the Evidence

Staff examined the project's design criteria to determine whether it will be built in accordance with typical power industry norms for reliable electricity generation. (Ex. 34, p. 5.4-3 et seq.) According to Staff, project safety and reliability are

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

1. Equipment Availability

The Applicant will ensure equipment availability by use of quality assurance/quality control programs (QA/QC), which include inventory review, and equipment inspection and testing on a regular basis during design, procurement, construction, and operation. Condition of Certification **MECH-1** (See **Facility Design**) requires the Applicant to include applicable QA/QC procedures in the final design specifications for the project. Qualified vendors of plant equipment and materials will be selected based on past performance and independent testing contracts to ensure acquisition of reliable equipment. (Ex. 34, p. 5.4-3.)

2. Plant Maintainability

The evidentiary record indicates that project design includes appropriate redundancy of equipment to ensure continued operation in the event of equipment failure. (Ex. 1, § 3.8.3.3, Table 3.8-1, Appendix 5; Ex. 34, p. 5.4-3.) Project maintenance will be typical of the industry, including preventive and predictive techniques. Any necessary maintenance outages will be planned for periods of low electricity demand. (Ex. 1, §§ 3.8.3.1, 3.8.4.2, Ex. 34, p. 5.4-4.)

3. Fuel and Water Availability

Reasonable long-term availability of fuel and water is necessary to ensure project reliability. As discussed in the Chapter on **Power Plant Efficiency**, the MGS will burn natural gas from the City of Vernon distribution system. Gas will be transmitted to the plant via a new 1,300-foot section of 10-inch diameter pipeline connected to the existing City of Vernon transmission system. (Ex. 1, §§ 1.2, 1.8,

3.1, 3.4.6, 3.8.3.6, Ex. 34, p. 5.4-4; Ex. 1, p. 6-1, Section 6.1.) Staff agreed with the Applicant that there will be adequate natural gas supply and pipeline capacity to meet the project's needs. *(Ibid.)*

The MGS will obtain reclaimed water from the Central Basin Municipal Water District (CBMWD) for cooling tower makeup, CTG evaporative coolers, and the HRSGs to meet the water requirements for the project**. (**Ex. 1, § 3.4.7.2.**)** The Applicant predicts a peak demand of 1,000 gallons per minute of reclaimed water for the project. (Ex. 1, § 3.4.7.2.) Potable water will be provided by the City's existing pipeline and a backup connection will be used for plant makeup in the event that reclaimed water is not available. (Ex. 1, § 3.4.7.) Staff testified that these sources present sufficient likelihood of a reliable supply of water. (Ex. 34, p. 5.4-4.) (For further discussion of water supply, see the **Soil and Water Resources** section of this document.)

4. Natural Hazards

The site is located in Seismic Zone 4 where several active earthquake faults create the potential for seismic shaking to threaten reliable operation. (Ex. 34, p. 5.4-5; *See* **Geology and Paleontology**.) MGS will be designed and constructed to comply with current applicable LORS for seismic design.[7] Condition of Certification **STRUC-1** in the **Facility Design** Chapter of this Decision ensures that the project will conform with seismic design LORS.

5. Availability Factors

The Applicant predicts the project will have an equivalent availability factor between 90 and 98 percent. (Ex. 34, p. 5.4-6.) Industry statistics for power plant availability, which are compiled by the North American Electric Reliability Council

[7] Staff expects the project, designed to current seismic standards, will perform at least as well as or better than existing plants in a seismic event. Staff noted that California's electric system has typically been reliable during seismic events. (Ex. 34, p. 5.4-5.)

(NERC), show an availability factor of 91.49 percent for combined cycle units of all sizes. (Ex. 34, p. 5.4-5.) Since the plant will consist of two parallel gas turbine generating trains, maintenance can be scheduled during those times of year when the full plant output is not required to meet market demand, typical of industry standard maintenance procedures. The procedures identified by Applicant for assuring design, procurement and construction of a reliable power plant appear to be in keeping with industry norms, and Staff believes they are likely to maintain an adequately reliable plant. *(Ibid.)*

FINDINGS AND CONCLUSIONS

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

1. The Malburg generating Station (MGS) will ensure equipment availability by implementing quality assurance/quality control (QA/QC) programs and by providing adequate redundancy of auxiliary equipment to prevent unplanned off-line events.

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

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

4. There is adequate water availability for project operations.

5. The project is designed to withstand seismic shaking that would compromise project safety and reliability.

6. The project's estimated 90-98 percent availability factor is consistent with industry norms for power plant reliability.

7. There is an adequate natural gas supply and pipeline capacity to meet the project's needs.

We therefore conclude that the project will be constructed and operated in accordance with typical power industry norms for reliable electricity generation. No Conditions of Certification are required for this topic. To ensure

implementation of the QA/QC programs and conformance with seismic design criteria as described above, appropriate Conditions of Certification are included in the **Facility Design** portion of this Decision.

D. TRANSMISSION SYSTEM ENGINEERING

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

The Applicant filed its AFC under the expedited six-month process described in Section 25550 of the Warren-Alquist Act. (Pub. Resources Code, § 25550.) Commission regulations pertaining to the six-month process require the AFC to include:

- An Interconnection Study identifying the electrical system impacts and a discussion of the mitigation measures proposed to maintain conformance with North American Electric Reliability Council (NERC), Western Systems Coordinating Council (WSCC), and California Independent System Operator (Cal-ISO) standards, or other appropriate planning criteria; and

- A full description of the facilities, if any, that are required for interconnection, including facilities beyond the point where the outlet line joins with the interconnected system. [(Cal. Code of Regs., tit. 20, § 2022(b)(3).]

The Applicant submitted a System Impact Study in conformance with Section 2022(b)(3) of the Energy Commission's regulations. (Cal. Code of Regs., tit. 29, § 2022(b)(3); *see* Ex. 1, § 5.2, Appendix D; Ex. 20.) Staff also provided an extensive evaluation of potential system reliability impacts of the project. (Ex. 34, p. 5.5-2.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The City of Vernon's 66 kV municipal electric system is part of the Cal-ISO control area and is tied to the Southern California Edison (SCE) bulk power system and the Cal-ISO grid at the Laguna Bell 230/66 kV Substation. The City has existing diesel and gas-fired generating plants for a total capacity of about 28.5 MW located at the existing Vernon 66 kV Substation. Additional generating capacity of about 96 MW is available from the qualifying and merchant facilities within the system. The City serves its electric customers with a combination of its own generation and long-term wholesale power supply contracts. As such, the City currently depends on third party suppliers over the Cal-ISO grid for over 90 percent of its ancillary services and energy needs, and this creates uncertainty about providing reliable energy supply to the City's electric customers. The new plant will substantially reduce the need to purchase power from the wholesale power market, relieve the burden on the State's power resources, and will provide more efficient and reliable local power to the City's customers. (Ex. 34, p. 5.5-3.)

The new MGS will generate 134 MW to meet local demand. The project will interconnect at the Vernon Substation, which ties into the SCE system at the Laguna Bell Substation. (Ex. 34, p. 5.5-1.) Other than construction of the interconnection facilities at the Vernon Substation, no new transmission facilities will be required to accommodate the power output of the MGS. (Ex. 34, p. 5.5-8.)

Interconnection Facilities

The MGS site is situated inside the compound of the existing generating plant site at the Vernon Substation. Each of the generating units will be connected to a dedicated 13.2/69 kV step-up transformer through a 13.2kV 3000-ampere breaker and 13.2 kV underground cables, and the high voltage terminals of each

transformer will be connected to the existing Vernon 66 kV Substation switchyard by 69 kV underground cables. (Ex. 1, §§ 3.0 and 5.0.) The Vernon Substation switchyard, which has an existing configuration of a double bus and double breaker arrangement, will be extended to three new switching bays, each bay with a double breaker arrangement to accommodate the MGS. The new STG unit will be connected to a new bay and two of the existing 66 kV underground transmission lines will be shifted to the new switching bays to make room for connection of the two new CTG units. (Ex. 34, p. 5.5-4.)

According to Staff, the configuration of the switchyard and interconnection facilities are consistent with good utility practices. Staff reviewed the engineering design for the transmission facilities and proposed several Conditions of Certification to ensure compliance with standard industry requirements. (Ex. 34, p. 5.5-8.) We have adopted Conditions of Certification **TSE-1** through **TSE-8,** which require the Applicant to design, construct, and operate the new facilities in conformance with applicable laws, ordinances, regulations, and standards (LORS). Any planned, unexpected temporary, or unexpected permanent closure of the MGS shall be subject to the Compliance Monitoring and Closure Plan contained in the **General Conditions** of this Decision. (*Id.*, p. 5.5-9.)

Potential Impacts on System Reliability

Applicant's consultants, Navigant Consulting, Inc. (NCI) performed a revised System Impact Study (SIS) for the City of Vernon to identify potential system impacts resulting from interconnection of the MGS to the City's municipal grid, SCE, and the Los Angeles Department of Water and Power (LADWP).[8] (Ex. 20;

[8] The initial SIS prepared by the Applicant and submitted with the AFC was incomplete. As a result, the Applicant retained Navigant Consulting, Inc (NCI) to perform a System Impacts Study/Facilities Study. After review and discussion with Cal-ISO and Staff, NCI subsequently developed a System Impact/Facilities Study plan to evaluate MGS conformance with WSCC, Cal-ISO and utility reliability criteria. (Ex. 2, § 9, Attachment 1.) Cal-ISO concurred with NCI's new study approach and accepted the revised NCI-prepared SIS. (*Id.*, Figure 9-1; *see* also, Ex. 34, p. 5.5-10.)

see also, Ex. 2, § 9, Ex. 3; Ex. 4; Ex. 34, p. 5.5-5.) The SIS was performed in consultation with the Cal-ISO and CEC Staff and contains technical analyses regarding powerflow base cases, powerflow contingency analysis, normal operating (n-0 conditions), post-transient studies, transient stability studies, and short circuit studies. *(Ibid.)* Cal-ISO found that NCI applied appropriate Cal-ISO Grid Planning Standards in the revised SIS and agreed with the NCI-prepared SIS and agreed with NCI's conclusion that MGS would not adversely impact reliability of the ISO Controlled Grid. (Ex. 2, § 9, Figure 9-1.)

NCI's power flow studies did not show any potential downstream impacts nor identify overload violations during normal operations or contingency conditions. (Ex. 34, p. 5.5-5 et seq.; Ex. 2, § 9; Ex. 3, § 6; Ex. 20.) Further, results of the transient stability studies did not any indicate transient stability concerns on the transmission system following the selected disturbances for integration of the MGS. (*Ibid*.) NCI's short circuit study, however, identified considerable increase in fault currents, which would overstress breakers at five 66 kV substations in the City of Vernon's municipal system. (Ex. 3, Appendix B; Ex. 34, pp. 5.5-7, 5.5-8.) As mitigation, Applicant will replace a total of forty 66 kV breakers in the municipal system, including twenty breakers at Leonis Substation, fourteen breakers at Vernon Substation, four breakers at Owill Substation, and one breaker each at Coldgen Tap and Growgen Tap substations. (*Ibid*., Ex. 20.) Condition of Certification **TSE-5** requires Applicant to identify and implement all necessary mitigation measures, which would include replacement of the breakers. These breaker changes will occur within the fence lines of each substation and will, therefore, avoid any environmental impacts. (Ex. 34, p. 5.5-8.)

The SIS is followed by supplemental power flow studies performed by SCE, with details provided in a Detailed Interconnection Facility Study. (Ex. 34, p. 5.5-5.) SCE conducted the additional System Impact Study to identify potential impacts in the SCE system due to the MGS. (Ex. 4, Attachment 3, Ex. 22.) SCE's power

flow study indicated that some marginal adverse impacts in the SCE system would occur under emergency contingency conditions as a result of the MGS interconnection. (*Ibid*.; Ex. 34, p. 5.5-6.) Potential overloads and acceptable mitigation measures were identified on two lines as follows:

(1) The Lighthipe-Hinson 230 kV line would violate overload planning criteria for an outage of the Hinson-Del Amo 230 kV line. Applicant agreed to implement SCE's recommended mitigation measures of RAS and curtailment of generation.

(2) The Lighthipe-Mesa Cal 230 kV line would violate overload planning criteria for an outage of the Alamitos-Barre No. 2 230 kV line. Applicant agreed to implement SCE's recommended mitigation to replace wave traps at both ends of the Lighthipe-Mesa Cal 230 kV line to 4000-ampere rating.

SCE's contingency analysis identified three pre-project emergency overload violations and acceptable mitigation. (Ex. 34, p. 5.5-6, 5.5-7.)

(1) The Lighthipe-Hinson 230 kV line violated overload planning criteria for double line contingencies on the Hinson-Del Amo and Lighthipe-Long Beach 230 kV lines. Applicant agreed to mitigation measures of RAS and curtailment of generation.

(2) The Longbeach-Lighthipe 230 kV line violated overload planning criteria due to outage of the Lighthipe-Hinson and Hison-Del Amo 230 kV lines. Applicant will implement mitigation measures of RAS and curtailment of generation.

(3) The Lighthipe-Mesa Cal 230 kV line violated overload planning criteria for four double line contingencies, with the most severe overload for outage on the Hinson-Del Amo and Redondo-Mesa Cal 230 kV lines. In mitigation, Applicant will replace wave traps at both ends of the Lighthipe-Mesa Cal 230 kV line to 4000-ampere rating.

The Short Circuit Study performed by SCE identified a marginal increase in fault currents at six 230 kV substations in the SCE system due to the addition of the MGS, but the breaker duties were within 60 percent of their ratings and as such complied with the SCE reliability criteria. (Ex. 4, Attachment 3.) SCE therefore, SCE concluded that the interconnection of MGS would not require any

replacement or upgrade of circuit breakers on the SCE distribution and transmission systems. Staff considers this acceptable. (Ex. 34, p. 5.5-7.)

The LADWP also performed a Short Circuit Study, which detected a minimal increase in fault currents due to the MGS at four substations in the LADWP 230 kV transmission system; however, breakers at these substations are already overstressed without the MGS. Since LADWP plans to replace and upgrade the breakers before the MGS online date in 2004, Staff found that the MGS would not cause an impact on the LADWP system when it goes online. (Ex. 34, p. 5.5-8.)

Staff concluded that the project would have minimal or no cumulative impacts on the interconnected transmission system. Any potential cumulative impacts due to the MGS will be mitigated to levels of insignificance in accordance with the recommendations contained in Navigant's and SCE's system impact studies. (Ex. 34, p. 5.5-8.) Condition of Certification **TSE-5(f)** requires Applicant to execute a Facility Interconnection Agreement with Cal-ISO that identifies, *inter alia*, the mitigation measures acceptable to the transmission owners for each criteria violation.

FINDINGS AND CONCLUSIONS

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

1. The Malburg Generating Station (MGS) will interconnect to the City of Vernon electrical grid at the existing onsite Vernon Substation.

2. All construction and operation of electrical interconnection facilities associated with the MGS will occur onsite at the Vernon Substation.

3. The configuration of the switchyard and interconnection facilities are consistent with good utility practices.

4. The City of Vernon electrical grid is part of the Cal-ISO control area and interconnects to the Cal-ISO grid at SCE's Laguna Bell Substation.

5. Applicant's consultants (Navigant) and SCE performed System Impact Studies (SIS) that include planning criteria for the City of Vernon, the SCE, and the LADWP systems, as well as reliability criteria established by Cal-ISO and NERC/WSCC.

6. NCI's SIS found no potential downstream thermal overload impacts to the City of Vernon, SCE, or LADWP systems that would result from interconnection of MGS.

7. NCI's short circuit study indicated an increase in fault currents, which would overstress breakers at five substations in the City of Vernon system.

8. Applicant will mitigate short circuit impacts in the City's electric system by replacing or upgrading 40 circuit breakers within the fence lines of existing substations, thereby avoiding any environmental impacts.

9. The SIS performed by SCE indicates that interconnection of MGS will violate minor overload planning criteria in the SCE system under contingency conditions.

10. Applicant will mitigate minor overload violations in the SCE system by implementing RAS and curtailing generation as necessary.

11. To mitigate minor overload violations on the Lighthipe-Mesa Cal 230 kV line, Applicant will replace wave traps at both ends of the line to 4000-ampere rating.

12. Applicant will execute a Facility Interconnection Agreement with Cal-ISO that, *inter alia*, identifies mitigation measures acceptable to the transmission owners.

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

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

CONDITIONS OF CERTIFICATION

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

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

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

TSE-2 Prior to the start of construction the project owner shall assign an electrical engineer and at least one of each of the following to the project: A) a civil engineer; B) a geotechnical engineer or a civil engineer experienced and knowledgeable in the practice of soils engineering; C) a design engineer, who is either a structural engineer or a civil engineer fully competent and proficient

in the design of power plant structures and equipment supports; or D) a mechanical engineer. (Business and Professions Code Sections 6704 et seq., require state registration to practice as a civil engineer or structural engineer in California.)

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

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

The electrical engineer shall:

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

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

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

TSE-3 The project owner shall keep the CBO informed regarding the status of engineering design and construction. If any discrepancy in design and/or construction is discovered, the project owner shall document the discrepancy and recommend the corrective action required. The discrepancy documentation shall become a controlled document and shall be submitted to the CBO for review and approval. The discrepancy documentation shall reference this condition of certification.

Verification: The project owner shall submit monthly construction progress reports to the CBO and CPM, which include the documentation of any discrepancies in design and/or construction identified by the project owner. The project owner shall transmit a copy of the CBO's approval or disapproval of any corrective action taken to resolve a discrepancy to the CPM within 15 days of receipt. If disapproved, the project owner shall advise the CPM, within five days, the reason for disapproval, and the revised corrective action required to obtain the CBO's approval.

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

a) receipt or delay of major electrical equipment;

b) testing or energization of major electrical equipment; and

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

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

TSE-5 The project owner shall ensure that the design, construction and operation of the proposed transmission facilities will conform to all applicable LORS, including the requirements listed below. The substitution of CPM and CBO approved "equivalent" equipment and equivalent substation

configurations is acceptable. The project owner shall submit the required number of copies of the design drawings and calculations as determined by the CBO.

a) The power plant switchyard and outlet line shall meet or exceed the electrical, mechanical, civil and structural requirements of CPUC General Order 95 (GO 95) or 128 (GO 128) or National Electric Safety Code (NESC), Title 8 of the California Code and Regulations (Title 8), Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", National Electric Code (NEC) and related industry standards.

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

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

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

e) Termination facilities shall comply with applicable SCE interconnection standards.

f) The project owner shall provide:

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

   ii) Executed Facility Interconnection Agreement.

   iii) Verification of Cal-ISO Notice of Synchronization.

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

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

a) Design drawings, specifications and calculations conforming with CPUC General Order 95 or GO 128 or NESC, Title 8, Articles 35, 36 and 37 of the "High Voltage Electric Safety Orders", NEC, applicable interconnection standards and related industry standards, for the poles/towers, foundations, anchor bolts, conductors, grounding systems and major switchyard equipment.

b) For each element of the transmission facilities identified above, the submittal package to the CBO shall contain the design criteria, a discussion of the calculation method(s), a sample calculation based on "worst case conditions"[9] 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 GO 128 or NESC, Title 8, California Code of Regulations, Articles 35, 36 and 37 of the, "High Voltage Electric Safety Orders", NEC, applicable interconnection standards, and related industry standards.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

DEFINITION OF TERMS

ACSR Aluminum cable steel reinforced.

SSAC Steel Supported Aluminum Conductor.

AAC All Aluminum conductor.

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

Ampere The unit of current flowing in a conductor.

Kiloampere (kA) 1,000 Amperes

Bundled Two wires, 18 inches apart.

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

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

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

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

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

Kilovolt (kV) A unit of potential difference, or voltage, between two conductors of a circuit, or between a conductor and the ground. 1,000 Volts.

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

Megavar One megavolt ampere reactive.

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

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

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

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

N-1 Condition See Single Contingency.

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

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

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

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

SF6 Sulfur hexafluoride is an insulating medium.

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

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

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

Thermal rating See ampacity.

TSE Transmission System Engineering.

TRV Transient Recovery Voltage

Tap A transmission configuration creating an interconnection through a sort single circuit to a small or medium sized load or a generator. The new single circuit line is inserted into an existing circuit by utilizing breakers at existing terminals of the circuit, rather than installing breakers at the interconnection in a new switchyard.

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

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

E. TRANSMISSION LINE SAFETY AND NUISANCE

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

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Description of Transmission Lines

The City of Vernon will deliver the electrical power from the MGS to its utility customers via the City's existing 69 kilovolt (kV) transmission lines. No new transmission lines will be needed. The City-owned municipal transmission system interconnects to the Southern California Edison (SCE) 69 kV transmission system at specific points outside city limits. (Ex. 1, p. 5-1.)

2. Potential Impacts

a. Electric and Magnetic Field Exposure

The possibility of deleterious health effects from exposure to electric and magnetic fields (EMF) has raised public health concerns about living near high-voltage lines. (Ex. 34, p. 4.11-5.) In the face of the present uncertainty, several states, including California, have opted for design-driven regulations, which are intended to ensure that fields from new lines are generally similar in intensity to those from existing lines of similar voltage and current-carrying capacity. (*Id*., at p. 4.11-6.) Since the project will interconnect to the City of Vernon's municipal power grid via the existing 69 kV switchyard at the site, there is no need for new project transmission lines. (Ex. 1, pp. 3-8, 3-9.)

The existing municipal grid interconnects to the SCE transmission system and was therefore designed and built according to standard industry safety and field management guidelines reflected in SCE requirements. The City will continue to own, operate, and maintain the existing lines according to normal municipal utility practices that reflect compliance with existing health and safety LORS. (Ex. 34, p. 4.11-8.)

Electricity from each of the project's generators would be produced at the relatively low voltage of 13.8 kV before being transmitted via 15 kV underground cable for step-up to 69 kV (at pad-mounted step-up transformer). This stepped up power will then be transmitted to the 69 kV connection point at the existing Vernon Substation using 300 feet of underground cables. (Ex. 1, §§ 3.4.5 and 5.0.) Relatively minor modifications will be necessary at the connection points within the Vernon Substation to accommodate the connection to the MGS generators. (Ex. 1, pp. 3-8 through 3-10.) Since no new transmission lines will be needed, Staff concurred with Applicant that the existing 69 kV utility lines could be used without retrofit in connection with the MGS. (Ex. 34, p. 4.11-7.)

Staff assessed the transmission system for potential compliance with requirements concerning EMF impacts of potential significance to human health and safety. (Ex. 34, p. 4.11-1.) Staff expects that any contribution to cumulative area exposures will reflect current CPUC requirements on field contributions from new sources. Undergrounding the interconnection cables will prevent any exposure to electric field levels at the surface; however, existing electrical facilities at the site already produce EMF fields. The project's actual contribution to EMF levels at the site will be assessed from the results of field strength measurements specified in Condition of Certification **TLSN-1**. (Ex. 34, p. 4.11-9.) Condition **TLSN-1** requires the Applicant to compare the resulting EMF fields after the project is energized with existing fields onsite and along the corridor of lines to be used and with area lines of the same voltage and current-carrying capacity. (Ex. 34, p. 4.11-8.)

b. Other Potential Impacts

The Federal Aviation Administration (FAA) requires notification of any construction taller than 200 feet or any construction within restricted airspace in the approach to airports. Federal Communications Commission (FCC) regulations prohibit operation of devices that interfere with radio communications even if such devices are not intentionally designed to produce radio-frequency energy. Nuisance or hazardous shocks can result from direct or indirect contact with an energized line or metal objects located near the line. Since the existing municipal utility line design is in compliance with standard industry practices relative to aviation safety, nuisance shocks, hazardous shocks, fire hazards and interference with radio-frequency communication, Staff found the use of the lines involved (without modification) for the MGS reflects compliance with applicable CPUC requirements. (Ex. 34, p. 4.11-8.)

FINDINGS AND CONCLUSIONS

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

1. The MGS will deliver electrical energy to its utility customers through the City's existing 69 kV transmission lines.
2. No new transmission lines will be needed.
3. Since no new lines will be built, the project will not result in significant adverse environmental impacts to public health and safety nor cause impacts in the areas of aviation safety, radio frequency communication, fire hazards, nuisance or hazardous shocks, or electric and magnetic field exposure.

We therefore conclude that with the implementation of the Condition of Certification, below, the project will comply with all applicable laws, ordinances, regulations, and standards relating to transmission line safety and nuisance as identified in the pertinent portions of **Appendix A** of this Decision.

CONDITION OF CERTIFICATION

TLSN-1 The project owner shall engage a qualified consultant to measure the strengths of the line electric and magnetic fields as currently encountered within the corridor of the 69 kV lines to be used to transmit the power from the MGS project. The fields shall also be measured during project operation to allow for assessment of the contributions from project-related current flow. These field strength measurements shall be made according to IEEE measurement protocols at representative points (on-site and along the line route) as necessary to identify the maximum area field exposures possible during project operations. Field measurements after project energization shall comply with standards established by the CPUC.

Verification: The project owner shall file copies of the pre- and post-energization measurements with the CEC Compliance Project Manager no later than 30 days after the post-energization measurements are completed. The post-energization measurements shall be initiated no later than 60 days from the start of commercial operations. If field measurements exceed CPUC standards, the CEC CPM shall propose appropriate mitigation for approval by the Energy Commission.

V. PUBLIC HEALTH AND SAFETY ASSESSMENT

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

A. AIR QUALITY

This section examines the potential adverse impacts of criteria air pollutant emissions resulting from project construction and operation. The Commission must find that the project complies with all applicable laws, ordinances, regulations, and standards related to air quality. National ambient air quality standards (NAAQS) have been established for air contaminants identified as "criteria air pollutants." These include sulfur dioxide (SO_2), carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), lead (Pb), and particulate matter less than 10 microns in diameter (PM_{10}). New standards have been set for particulate matter less than or equal to 2.5 microns ($PM_{2.5}$.)[10] Also included in this review are the precursor pollutants for ozone, which are nitrogen oxides (NO_x) and volatile organic compounds (VOC), and the precursors for PM_{10}, which are NO_x, VOC, and sulfates (SO_x). (Ex. 1, § 8.1.1.2.)

The federal Clean Air Act[11] requires new major stationary sources of air pollution to comply with federal requirements in order to obtain authority to construct permits. The U.S. Environmental Protection Agency (USEPA), which administers the Clean Air Act, has designated all areas of the United States as attainment (air

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[10] New $PM_{2.5}$ and ozone standards adopted by EPA in 1997 were upheld by the Supreme Court in 2001. EPA is expected to designate $PM_{2.5}$ nonattainment areas in 2003 and require attainment plans by 2006. (Ex. 34, p. 4.1-19.)

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

quality better than the NAAQS) or nonattainment (worse than the NAAQS) for criteria air pollutants. (Ex. 34, p. 4.1-1 et seq.) There are two major components of air pollution law: New Source Review (NSR) for evaluating pollutants that violate federal standards and Prevention of Significant Deterioration (PSD) to evaluate those pollutants that do not violate federal standards. Enforcement of NSR and PSD rules is typically delegated to local Air Districts that are established by federal and state law. (*Ibid*.)

Both USEPA and the California Air Resources Board (CARB) have established allowable maximum ambient concentrations for the criteria pollutants identified above. The California standards (CAAQS) are typically more stringent than federal standards. Federal and state ambient air quality standards are shown in **Air Quality Table 1**.

AIR QUALITY Table 1
Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O3)	1 Hour	0.12 ppm (235 $\mu g/m^3$)	0.09 ppm (180 $\mu g/m^3$)
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
Nitrogen Dioxide (NO2)	Annual Average	0.053 ppm (100 $\mu g/m^3$)	---
	1 Hour	---	0.25 ppm (470 $\mu g/m^3$)
Sulfur Dioxide (SO2)	Annual Average	80 $\mu g/m^3$ (0.03 ppm)	---
	24 Hour	365 $\mu g/m^3$ (0.14 ppm)	0.04 ppm (105 $\mu g/m^3$)
	3 Hour	1300 $\mu g/m^3$ (0.5 ppm)	---
	1 Hour	---	0.25 ppm (655 $\mu g/m^3$)
Respirable Particulate Matter (PM_{10})	Annual Geometric Mean	---	30 $\mu g/m^3$
	24 Hour	150 $\mu g/m^3$	50 $\mu g/m^3$
	Annual Arithmetic Mean	50 $\mu g/m^3$	---
Sulfates (SO_4)	24 Hour	---	25 $\mu g/m^3$
Lead	30 Day Average	---	1.5 $\mu g/m^3$
	Calendar Quarter	1.5 $\mu g/m^3$	---
Hydrogen Sulfide (H_2S)	1 Hour	---	0.03 ppm (42$\mu g/m^3$)
Vinyl Chloride (chloroethene)	24 Hour	---	0.010 ppm (26 $\mu g/m^3$)

Pollutant	Averaging Time	Federal Standard	California Standard
Ozone (O3)	1 Hour	0.12 ppm (235 $\mu g/m^3$)	0.09 ppm (180 $\mu g/m^3$)
Visibility Reducing Particulates	1 Observation	---	In sufficient amount to produce an extinction co-efficient of 0.23 per kilometer due to particles when the relative humidity is less than 70 percent.

Source: Ex. 34, p. 4.1-8.

Summary of the Evidence

The project site is located in the South Coast Air Quality Management District (SCAQMD or Air District). Air quality in the district is in attainment with federal and state standards for SO_2 and NO_2, and nonattainment for ozone, CO, and PM_{10}. (Ex. 34, p. 4.1-8.) The Air District's attainment status for each criteria pollutant is shown below in **Air Quality Table 2**.

AIR QUALITY Table 2
Attainment ~ Non-Attainment Classification
South Coast Air Quality Management District

Pollutants	Federal Classification	State Classification
Ozone	Extreme Non-Attainment	Extreme Non-Attainment
PM_{10}	Non-Attainment	Non-Attainment
CO	Serious Non-Attainment	Non-Attainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment

Source: Ex. 34, p. 4.1-9, Air Quality Table 2.

1. SCAQMD'S Final Determination of Compliance

On August 9, 2002, SCAQMD released its Preliminary Determination of Compliance (PDOC) for public comment. The Final Determination of Compliance (FDOC) was issued on December 12, 2002.[12] The FDOC concludes

[12] The FDOC is issued as part of the certification process. The FDOC evaluates whether and under what conditions the MGS will comply with the District's rules and regulations and serves as the basis for the PSD permit for the project. The Permit to Construct is issued after the Commission Decision becomes final. (Ex. 34, p. 4.1-56.) Public comments on the PDOC and the Air District's responses were incorporated into the record. (See Ex. 30, Ex. 33 and Ex. 37.)

that MGS will comply with all applicable air quality requirements, and imposes certain conditions necessary to ensure compliance.[13] (Ex. 37.) Pursuant to the Commission's regulations, the conditions contained in the FDOC are incorporated into this Decision. (Cal. Code of Regs., tit. 20, §§ 1744.5, 1752.3.)

2. California Environmental Quality Act (CEQA) Requirements

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

The following discussion provides an overview of air quality conditions in the Los Angeles area and describes the conclusions reached by Staff in consultation with SCAQMD.

3. Ambient Air Quality

The Applicant used data from the South Central Los Angeles County 1 air monitoring station (located within 5-miles of the site in Lynwood) to characterize

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[13] Title V of the Clean Air Act requires the states to implement an operating permit program to ensure that large sources comply with federal regulations. The USEPA has delegated to SCAQMD the authority to implement the federal PSD, nonattainment NSR, and Title V programs. SCAQMD adopted regulations, approved by USEPA, to implement these programs. MGS is subject to SCAQMD rules and regulations, in particular Regulation XIII (NSR), which defines requirements for Best Available Control Technology (BACT), offsets, and emission calculation procedures.

ambient air quality near the site. (Ex. 1, p. 8.1-12.) Applicant also relied on data from the Central Los Angeles County Station (also within five miles) to monitor SO_2 and PM_{10} levels because the South Central monitoring station does not monitor those pollutants. (Ex. 1, § 8.1.2.2.) Data was also considered from the West San Gabriel Valley Station, located within five miles of the project site in Pasadena. *(Ibid.)*

Ozone Violations. Ozone is not directly emitted from stationary or mobile sources, but is formed as the result of chemical reactions in the atmosphere between directly emitted air pollutants when nitrogen oxides (NO_x) and hydrocarbons volatile organic compounds (VOCs) interact in the presence of sunlight to form ozone. Long-term trends in reduced emissions of ozone precursors have led to reduced ozone formation in the area; however, the South Coast air basin remains classified as an *extreme* nonattainment area for ozone for both federal and state standards. (Ex. 34, pp. 4.1-9 et seq.)

Carbon Monoxide. Carbon monoxide (CO) is considered a local pollutant since it is found in high concentrations near the source of emission, i.e., cars and trucks. Peak CO concentrations occur during rush hour traffic in the morning and afternoon. The South Coast Air Basin has been in compliance with the 1-hour CO federal and state ambient air quality standards since 1997 and has shown an overall downward trend since 1988. (Ex. 34, pp. 4.1-21 et seq.) However, 2001 was the first year the Air Basin did not experience an exceedance of either the federal or state 8-hour CO standards. (*Ibid*.) The Air District is classified nonattainment for state and federal CO standards. (Ex. 1, § 8.1.1.3.3.)

Nitrogen Dioxide (NO_2). During the period from 1998-2000, the maximum one-hour and annual average NO_2 levels recorded at all three monitoring stations indicated no federal or state violations of AAQS. (Ex. 1, § 8.1.1.3.2.) Approximately 90 percent of the NO_x emitted from combustion sources is NO and the balance is NO_2. NO is oxidized in the atmosphere to NO_2 but some level of

photochemical activity is needed for this conversion. In the summer, although conversion rates are high, the warm temperatures and windy conditions (atmospheric unstable conditions) disperse pollutants, preventing the accumulation of NO_2 to levels approaching the 1-hour ambient air quality standard. (Ex. 34, p. 4.1-25.) The Air District is designated attainment for state and federal NO_2 standards.

Sulfur Dioxide (SO_2). Sulfur dioxide is emitted by combustion of sulfur-containing fuel. Since natural gas contains little sulfur, natural gas combustion emits very low amounts of SO_2. The Air District is designated attainment for state and federal standards for SO_2. (Ex. 1, § 8.1.1.3.4.)

Inhalable Particulate Matter (PM_{10}). The project area experiences a number of yearly violations of the state 24-hour PM_{10} standard.[14] (Ex. 1, § 8.1.1.3.6.) PM_{10} can be emitted directly or formed many miles downwind from emission sources when various precursor pollutants interact in the atmosphere. Under certain meteorological conditions, gaseous emissions of NO_x, SO_x and VOC from turbines and ammonia from NO_x control equipment can result in particulate matter in the form of nitrates (NO_3), sulfates (SO_4), and organic particles. These pollutants are known as secondary particulates because they are not directly emitted but formed through complex chemical reactions in the atmosphere. (Ex. 34, p. 4.1-18.)

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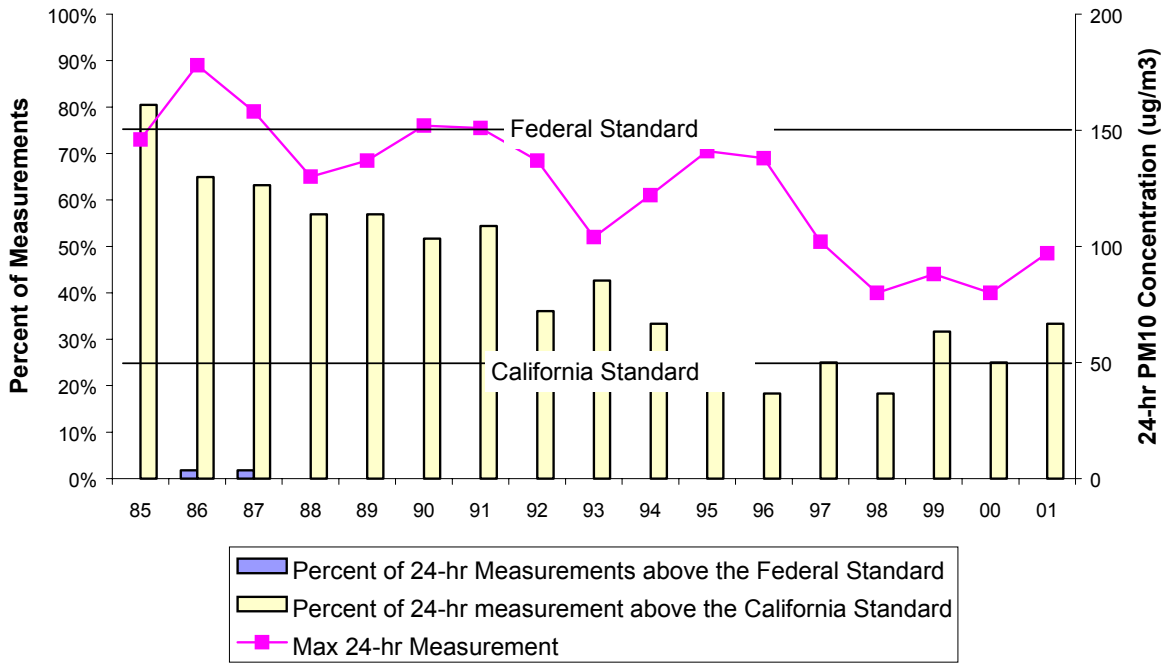
[14] PM nitrate (mainly ammonium nitrate) is formed in the atmosphere from the reaction of nitric acid and ammonia. Nitric acid originates from NO_x emissions of combustion sources. The nitrate ion concentrations during the wintertime are a significant portion of the total PM_{10}, and a greater contributor to particulate matter of less than 2.5 microns ($PM_{2.5}$). The air agencies in California have deployed $PM_{2.5}$ ambient air quality monitors throughout the state and, if needed, $PM_{2.5}$ ambient air quality attainment plans will be submitted to the EPA by 2006. (Ex. 34, pp. 4.1-18, 4.1-19.) According to Staff, data from the Los Angeles monitoring station shows an exceedence in both the annual and 24-hour federal and state $PM_{2.5}$ ambient air quality standards from 1999-2001. The Air District is expected to be nonattainment for $PM_{2.5}$ in the future when the EPA makes the attainment designation for the South Coast basin. (Id. at p. 4.1-20.)

Air Quality Figure 9, replicated from Staff's testimony, shows the historic (1985-2000) 24-hour PM_{10} measurements made at the Los Angeles Monitoring Station.

AIR QUALITY Figure 9
Historic 24-hour PM_{10} Measurements
Los Angeles Main Street Monitoring Station
1985 to 2001



Source: Ex. 34, p. 4.1-17, taken from California Air Resources Board

3. Baseline Ambient Conditions

Staff used the background ambient air concentrations shown below in **Air Quality Table 5** for modeling and evaluating the MGS's potential air quality impacts. To establish the worst-case concentration levels, Staff used the maximum value in any of the three years from any one of the three monitoring stations, except for CO, for which they used the 1999 Pasadena 1-hour CO ambient air quality measurement and the Lynwood 2001 8-hour measurement. (Ex. 34, pp. 4.1-9 et seq.)

AIR QUALITY Table 5
Staff Recommended Background Concentrations

Pollutant	Averaging Time	Concentration (ug/m^3)	Concentration (ppm)
Ozone	1 Hour	320	0.160
Particulate Matter (PM_{10})	Annual Geometric Mean	42.1	--
	Annual Arithmetic Mean	44.8	--
	24 Hour	97	--
PM2.5	Annual Arithmetic Mean	23.1	--
	24 Hour	87.8	--
Carbon Monoxide	8 Hour	8,456	7.61
	1 Hour	21,850	19
Nitrogen Dioxide	Annual Average	71.7	0.038
	1 Hour	280	0.149
Sulfur Dioxide	Annual Average	8.0	0.003
	24 Hour	38.6	0.0148
	1 Hour	251.5	0.096

Source: Ex. 34, p. 4.1-30.

4. Potential Impacts

Methodology. Applicant used USEPA-approved air dispersion modeling to calculate the worst case turbine configuration that would result in the highest emission impacts. The results were included in a more refined modeling analysis using meteorological and ambient air data from the Vernon and Los Angeles International Airport monitoring stations. (Ex. 1, § 8.1.2.5; Ex. 34, p. 4.1-39.)

Construction. The primary emission sources during construction are diesel exhaust from heavy equipment and fugitive dust from disturbed areas at the site. (Ex. 1,p. 8.1-18.) Construction is expected to last 12.5 months followed by three months of initial commissioning. (Ex. 34, p. 4.1-31.) The modeling showed that most of the highest emissions would occur during the first and second month of construction. Air Quality Table 14, replicated from Staff's testimony, shows that the construction activities would cause violations of the state 1-hour average NO_2 and PM_{10} standards and further exacerbates violations of the CO and annual PM_{10} standards. (Ex. 34, p. 4.1-39.) Staff proposed several mitigation measures including a fugitive dust control program, installation of diesel particulate filters on

heavy equipment, and the use of low-sulfur diesel fuel to reduce potential construction-related impacts to insignificant levels. Staff proposed limits on construction emissions of NO_2 so that the measured ambient air concentrations downwind of the site do not exceed the short-term ambient air quality standard, minus the established background NO_2 concentration. Staff also proposed using the Air District's PM_{10} ambient air concentration threshold for construction projects. The parties agreed that construction activities would not cause or contribute to an exceedance of ambient air quality standards for CO. (Ex. 46.)

Conditions **AQ-C1** through **AQ-C3** require the Applicant to implement an Air Quality Construction Mitigation Plan that incorporates the mitigation measures identified by Staff. Regarding Condition **AQ-C1**, Staff proposed that the City be allowed to develop alternative measures in place of the measures identified in the Condition. We rejected this proposal since we are required to specify the measures intended to mitigate impacts identified in the record. The parties do not have discretion to change the terms of the Conditions of Certification without the review set forth in Section 1769 of the Commission's regulations. (Cal. Code of Regs., tit. 20, § 1769.)

AIR QUALITY Table 14
Maximum Construction Impacts

Pollutant	Averaging Time	Direct Impact ($\mu g/m^3$) [2]	Background ($\mu g/m^3$)[1]	Cumulative Impact ($\mu g/m^3$)	Limiting Standard ($\mu g/m^3$)	Cumulative as a Percent of Standard
NO_2[2]	**1-hour**[3]	**4,616.7**	280	**4,896.7**	470	**1,042%**
	Annual[4]	41.1	71.7	**112.2**	100	**112%**
CO_2	**1-hour**	5,236.5	21,850	**27,087**	23,000	**118%**
	8-hour	1,629.4	8,456	**10,085**	10,000	**101%**
SO_2	1-hour	104.1	251.5	355.6	655	54%
	24-hour	10.8	38.6	49.4	130	38%
	Annual	1.0	8.0	9.0	80	11%
PM_{10}	**24-hour**	**141.4**	97	**238.4**	50	**477%**
	Annual[5]	5.0	43.1	**48.1**	30	**160%**
	Annual[6]	5.0	44.8	**49.8**	50	**99%**

1 See AIR QUALITY Table 4.
2 Based on daily emission during month 1 and 2.
3 Employs ozone-limiting method, factor of 0.58 used.
4 Employs ARM method, default district ratio of 0.71.
5 Annual Geometric Mean, State Standard
6 Annual Arithmetic Mean, Federal Standard

Source: Ex. 34, p. 4.1-40.

Operation. Project emissions of criteria pollutants during operation will result from combustion of natural gas in the CTG, which includes dry low NO_x combustors to reduce NO_x emissions and in the HRSG, which includes supplemental duct burners and an integral SCR and an oxidation catalyst to control NO_x, CO, and VOC emissions from the CTG. (Ex. 34, p. 4.1-34.)

Due to the combustion turbines used in this project and the need to control NO_x emissions, ammonia will be injected into the flue gas stream as part of the SCR system. A portion of the ammonia passes through the SCR and is emitted unaltered, out the stacks. These ammonia emissions are known as "ammonia slip". Condition of Certification **AQ-12** limits MGS to an ammonia slip no greater than 5 ppm, which is the current lowest ammonia slip level being permitted

throughout California. On a daily basis, the ammonia slip of 5 ppm is equivalent to approximately 182 lbs/day of ammonia emitted into the atmosphere per turbine. (Ex. 34, p. 4.1-37.)

Startup, shutdown and full load operations were modeled separately for each of the major pollutants shown in Staff's **AIR QUALITY Table 16** (NO_x, SO_x, CO and PM_{10}), which shows the maximum impact for each pollutant and averaging time. In general, the maximum 1-hour based emission impacts (NO_x, SO_x and CO) occurred approximately 1.75 miles to the north of the project site, while the maximum 8-hour, 24-hour and annual emission impacts were approximately 0.25 to 0.50 mile to the east. The maximum 24-hour and annual PM_{10} emission impacts are expected to be 0.25 and 0.50 miles to the east of the project site respectively. Since these emissions do not cause a direct violation of the ambient air quality standards, Staff considered them to be insignificant. (Ex. 34, p. 4.1-42.)

The project emissions impacts shown in **AIR QUALITY Table 16** do not include those from the diesel powered firewater pump because the necessary information was not available to the Applicant in a timely manner to be included in the modeling. (Ex. 34, 4.1-42.) Conditions of Certification **AQ-C8** and **AQ-15** place certain restrictions on the testing (not emergency operation) of the firewater pump as reflected in the modeling provided. *(Ibid.)*

AIR QUALITY Table 16
Combustion Turbines and Cooling Tower
Modeling Maximum Impacts

	Averaging Time	Direct Impact ($\mu g/m^3$)	Limiting Standard ($\mu g/m^3$)	Direct Impact as a Percent of Standard
NO2	1-hour, Startup	21.82	470	5
	Annual[b]	0.39	100	1
CO	1-hour, Startup	40.46	23,000	0
	8-hour, Full Load	1.205	10,000	0
SO2	1-hour, Shutdown	0.332	655	0
	24-hour, Full Load	0.062	105	0
	Annual, Full Load	0.0189	80	0
PM_{10}	24-hour, Full Load	1.94	50	4
	Annual[C], Full Load	0.474	30	2
	Annual[d], Full Load	0.474	50	1

[a] See AIR QUALITY Table 4

[b] Assumes 4 cold startups, 52 warm startups, 56 shutdowns and 8646 hours of full load operation with the duct burners on.

[c] Annual Geometric Mean, State Standard, includes both the combustion turbines and the cooling towers.

[d] Annual Arithmetic Mean, Federal Standard, includes both the combustion turbines and the cooling towers.

Source: Ex. 34, p. 4.1-42

NO_x and SO_2 emissions, if left unmitigated, have the potential to contribute to secondary PM_{10} formation and thus higher PM_{10} levels in the area. Secondary PM_{10} formation is the process of conversion from gaseous reactants to particulate products. Currently, neither USEPA nor CARB has recommended models or procedures for estimating secondary PM formation. (Ex. 34, p. 4.1-44.) Ammonia emissions during May to August also have the potential to contribute to secondary PM_{10} formation. However, in Staff's opinion, any air quality impacts from the ammonia emissions of the MGS alone are too speculative to estimate and may not have the potential to cause or contribute to an exceedance of the short-term or long-term, state or federal ambient air quality standards. Therefore, Staff concluded that the ammonia emissions from the

MGS do not have a reasonable expectation of causing or contributing to an exceedance of the ambient air quality standards. *(Ibid.)*

Staff noted the potential for higher short-term pollutant concentrations during "fumigation" conditions, which are caused by the rapid mixing of the plume to ground level. (Ex. 34, p. 4.1-40.) Inversion fumigation conditions occur at sunrise when sunlight heats ground-level air, causing high concentrations of pollutants at ground level for 30-90 minutes. Applicant did not perform any fumigation modeling. Therefore, Staff developed **Air Quality Table 15** to show the potential fumigation impacts on the 1-hour NO_2, CO and SO_2 standards. The results of modeling analysis show that fumigation impacts will not violate or directly contribute to a violation of those pollutant standards. (*Ibid*.)

AIR QUALITY Table 15
Estimated Facility Fumigation Maximum 1-Hour Impacts

Pollutant	Direct Impact[1] ($\mu g/m^3$)	Background[2] ($\mu g/m^3$)	Cumulative Impact ($\mu g/m^3$)	Limiting Standard ($\mu g/m^3$)	Cumulative Impact as a Percent of Standard
NO2	2.2	280	282	470	60
CO	4.0	21,850	21,854	23,000	95
SO2	0.03	251.5	251.5	655	38

1 Impacts include emissions from both turbines with duct burners, and are 1/10th the impacts as reported for the project normal operation (see AIR QUALITY Table 16).
2 See AIR QUALITY Table 4

Source: Ex. 34, p. 4.1-41.

Initial "commissioning" operation of the power plant starts with the first firing of fuel in the gas turbines and HRSGs to test equipment and emission control systems. Conditions **AQ-C10, AQ-6** and **AQ-7** address the commissioning period, setting emission limits, limiting the commissioning period to 573 hours per turbine from initial startup, and requiring the project owner to calculate emission limits for CO during the commissioning period. (Ex. 34, p. 4.1-67.)

5. Mitigation

The Applicant proposed all practical and technically feasible mitigation measures to limit NO_x emissions from the combustion turbines to 2.0 ppm over a 1-hour average. In addition, the Applicant will use an oxidizing catalyst to limit CO emissions to 2 ppm over a 3-hour period, which will also limit VOC emissions to 1.4 ppm over a 1-hour period. This is consistent with recent Best Available Control Technology (BACT) findings from both CARB and USEPA. (Ex. 1, § 8.1.5.4; Ex. 34, p. 4.1-52.)

Emission Offsets. SCAQMD Regulation XIII on New Source Review (NSR) sets forth the pre-construction review requirements for new, modified, or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards and that future economic growth in the Air District is not unnecessarily restricted. This regulation limits the emissions of non-attainment contaminants and their precursors as well as ozone depleting compounds (ODC) and ammonia by requiring the use of Best Available Control Technologies (BACT). NOx emissions from the MGS are regulated by Regulation XX on the Regional Clean Air Incentives Market (RECLAIM).[15] The Air District determined that MGS complies with all requirements of the District's rules and regulations and that the project's emission offset package is complete in accordance with Public Resources Code, section 25523(d)(2). (Ex. 37; Ex 39; Ex. 44.)

[15] The Regional Clean Air Incentives Market (RECLAIM) program is designed to allow facilities flexibility in achieving emission reduction requirements for NO_x and SO_x through reasonable mitigation measures or the purchase of excess emission reductions. The RECLAIM program establishes an initial allocation (beginning in 1994) and an ending allocation (to be attained by the year 2003) for each facility within the program. The RECLAIM program supercedes other district rules and has its own rules for permitting, reporting, monitoring and its own banking rule. MGS is exempt from the SO_x RECLAIM program (Rule 2011) because it uses natural gas exclusively (per Rule 2001). However, it will be a NO_x RECLAIM project and, therefore, subject to the rules of RECLAIM for NO_x emissions. (Ex. 34, p. 4.1-5.)

SCAQMD's Offset Table, below, shows the project's emission liabilities that must be mitigated under SCAQMD's rules. The Applicant has obtained all of the required offsets from the open market, except for PM_{10} offsets, of which 3 lbs. will be ERCs and the remainder will be from Priority Reserve. The cooling tower is exempted from permitting (per District rule R-219(d) (3)), thus its PM_{10} emissions of 6 lbs. per day are not required to be offset. (Ex. 45, Revised FDOC, p. 1.)

AIR DISTRICT OFFSET REQUIREMENTS

(Information Taken from Air District's Ex. 44 and Ex. 45)

Pollutant	30-day Avg./turbine, lb.day	Total Offsets/2 turbines, lb/day
CO	117 (CT#1) & 137 (CT #2)	-305 ERCs
PM_{10}	162	-3 ERC +(-160 priority reserve)
VOC	59 (CT#1) & 49 (CT#2)	108 x 1.2=130 ERCs
So_x	+7 lbs/day	AQMD Rule 1304 Exemption (-7)
NO_x	229,531 lbs/1st year	RTCs per Reg. XX -229,531

(Source: Ex. 44; Ex. 45, Revised FDOC, p. 1.)

Calculations of the required ERCs are based on the distance of the project from the different offset sources. The Air District requires a 1.2:1 offset ratio for offsite ERCs per Rule 1303. (Ex. 44.) Offsets provided by priority reserve credits are at a 1:1 ratio per Rule 1309.1. The Air District provides 20 percent additional offsets from the internal offset accounts to ensure the project emissions are offset at a ratio consistent with the federally approved ratios. RECLAIM Trading Credits and Priority Reserve offsets are provided at an offset ratio of 1:1. *(Ibid.)*

The MGS's SO_x emissions are less than four tons per year. Therefore, the project is exempt from providing SO_x emission offsets under the District's NSR Rules and Regulations. Since the project is not considered to be a major source of SO_x under either federal or state Clean Air Acts, there are no offset requirements for SO_x. However, as part of the Air District's annual NSR equivalency report, the District will provide offsets for all sources that emit under

four tons per year from its internal state offsets account at a ratio of 1:1, rather than 1.2:1. *(Ibid.)*

The Applicant has purchased 305 lbs. of ERCs from the open market to offset 254 lbs. of increased CO emissions. The District's table below summarizes the acquired CO ERCs.

MGS OFFSETS FOR CO

ERC Cert. #	Amount, lb/day	ERC Cert. #	Amount, lb/day	Company/ Zone
AQ004457	8	AQ004798	2	City of Vernon/Coastal
AQ004458	13	AQ004801	45	City of Vernon/Coastal
AQ004466	13	AQ004840	60	City of Vernon/Coastal
AQ004474	2	AQ004847	14	City of Vernon/Coastal
AQ004475	4	AQ004873	144	City of Vernon/Coastal
Total of two columns			305	

(Source: Ex. 45, p, 2.)

In addition, the Applicant purchased 3 lbs. of PM_{10} ERCs from the open market and will seek access to priority reserve at a 1:1 ratio to offset 160 lbs/day of PM_{10} emissions from the two turbines. The Applicant qualifies to access the Air District's priority reserve per Rule 1309.1 to offset PM_{10} emissions. (Ex. 45, p. 2.)

REQUIRED PM_{10} OFFSETS

Source	Amount
Acquired ERC Cert. # AQ004763	3
AQMD Priority Reserve as per Rule 1309.1	160

(Source: Ex. 45, p. 2.)

To offset VOC emissions, the Applicant needs 130 lbs/day of VOC ERCs, which the Applicant has already purchased from the open market. (Ex. 38, Air Quality Section.)

ACQUIRED VOC ERCS

ERC Cert. #	Company	Amount, lbs/day	Zone
AQ004367	City of Vernon	108	coastal
AQ004493	City of Vernon	22	coastal
	Total	130	

(Source: Ex. 45, p. 2.)

6. CEQA Analysis

Staff reviewed Applicant's modeling results for combined emission impacts of the combustion turbines and cooling tower during normal steady state, start-up, and shut-down operations. (Ex. 34, pp. 4.1-41, 4.1-42; Ex. 42, Tables 9, 10, and 11.) The FDOC did not specify limitations on cooling tower PM_{10} emissions since the Air District does not include the cooling tower as a combustion source in its permit to operate. Staff therefore proposed several mitigation measures, including drift eliminator design, limits on TDS levels in blowdown water, and the prohibition against chromium containing compounds in circulating water, to control cooling tower PM_{10} emissions. Those measures are incorporated in Conditions of Certification **AQ-C4** through **AQ-C7**.

The Air District has established annual limits on diesel emissions from the MGS diesel firewater pump. (Ex. 37; Ex. 34, p. 4.1-43; Ex. 42, pp. 4.1-1, 4.1-2.) To ensure that combustion emissions from the pump and the MGS turbines are controlled on a daily basis, Staff proposed that testing of the firewater pump not occur on the same day as the startup or shutdown of either turbine. Conditions of Certification **AQ-C8** and **AQ-C9** incorporate this measure. Condition **AQ-15**

(incorporated from the FDOC) limits the number of hours per year that the firewater pump may operate.

Staff determined that implementation of the MGS offset package for NO_x, SO_x, CO, VOC, and PM_{10} will fully mitigate project impacts identified in Staff's CEQA analysis. (Ex. 42, pp. 4.1-3, 4.1-4; *see* Staff's Air Quality Amended Tables 25 and 26 for the result of Staff's CEQA Annual and Daily Emissions/Mitigation analysis.) Condition of Certification **AQ-C10** establishes the hourly, daily, and annual emission limits for the combustion turbines, firewater pump, and cooling tower during the commissioning period and the lifetime operation of the MGS.

7. Cumulative Impacts

Applicant conducted a cumulative air quality impact analysis of twenty facilities (including MGS) within a six-mile radius of the project site to determine whether the addition of the MGS would result in cumulative impacts to the air basin. The analysis considered the following projects listed in **Air Quality Table 19**.

AIR QUALITY TABLE 19
List of Facilities Included in the Cumulative Modeling Analysis

Airsep System Inc.
A's Match Dyeing & Finishing
Baker Commodities Inc.
Chevron Products Company
Color Master Printex
Color America Textile Processing
Filia Fab's
JDS Finishing
LA MTA #2
LA Corona USA
Life-Like Products
Match Master Dyeing & Finishing
Paramount Petro Corp.
Poly Pak America
Popular Textile Corp.
Techni-Cast Corp.

Trillium USA
USC Health Science
US Namsung Textile
Valley Plating Works Inc.

Source (Ex. 34. P. 4.1-47.)

Results of the analysis are summarized in Staff's **Air Quality Table 20**.

AIR QUALITY TABLE 20

Maximum Cumulative Impacts

	Averaging Time	**Future Direct Impact ($\mu g/m^3$)**	**Back-Ground[a] ($\mu g/m^3$)**	**Cumulative Impact ($\mu g/m^3$)**	**Limiting Standard ($\mu g/m^3$)**	**Cumulative Impact as a Percent of Standard**
NO2	1-hour	92.0	280	372	470	79
	Annual	5.9	71.7	77.6	100	78
CO	1-hour	259.2	21,850	22,109	23,000	96
	8-hour	65.0	8,456	8,521	10,000	85
SO2	1-hour	5.9	251.5	257.4	655	39
	24-hour	1.2	38.6	39.8	105	38
	Annual	0.4	8.0	8.4	80	11
PM_{10}	**24-hour**	2.4	97	99.4	50	**199**
	Annual	0.9	43.1	44.0	30	**147**
	Annual	0.9	44.8	45.7	50	91
[a] See AIR QUALITY Table 4						

Source; (Ex. 34, p. 4.1-48.)

As shown in **Air Quality Table 20**, except for the 24-hour and annual PM_{10} violations, cumulative impacts are expected to be below the state and national standards. The result of the dispersion modeling analysis indicated that MGS PM_{10} emissions represent 64 percent of the 24-hour impacts and 50 percent of the annual cumulative PM_{10} impacts identified in **Air Quality Table 20**. Staff therefore found the project's contribution of PM_{10} emissions would be a significant cumulative impact if left unmitigated. (Ex. 34, p. 4.1-47.)

In accordance with the Air District's requirements and the Conditions of Certification, below, MGS will reduce emissions to the extent feasible and provide emission offsets in the form of ERCs, PRCs and further offsets from the District Account under Rule 1304 Offset Exemptions of SO_2. Thus, according to Staff, these mitigation measures will reduce the potential for directly emitted PM_{10} as well as ozone and secondary PM_{10} formation and minimize potentially significant cumulative impacts to insignificant levels. (Ex. 42, p. 4.1-5.)

7. Environmental Justice

The evidentiary record includes a discussion of local demographics to identify potential environmental justice concerns. *See* the **Socioeconomics** section of this Decision. Since there are no significant unmitigated air quality impacts resulting from construction and operation of the MGS, there is no evidence of *disproportionate* air quality impacts on minority/low income populations. Therefore, we find there are no environmental justice issues that would require additional analysis. (Ex. 42, p. 4.1-5.)

FINDINGS AND CONCLUSIONS

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

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

2. The Malburg Generating Station (MGS) is located in the South Coast Air Quality Management District (Air District).

3. The Air District is a nonattainment area for state and federal 1-hour ozone standards, state and federal PM_{10} standards, and state and federal CO

standards; but is designated attainment for state and federal NO_2 and SO_2 standards.

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

5. Potential impacts from construction-related activities will be mitigated to insignificant levels with implementation of an Air Quality Construction Mitigation Plan.

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

7. The MGS will employ the best available control technology (BACT) to limit pollutant emissions by installing dry low NO_x combustors, SCR technology, and an oxidation catalyst.

8. Project NO_x emissions are limited to 2.0 parts per million (ppmvd) corrected at 15 percent oxygen over a one-hour average.

9. Project CO emissions are limited to 2.0 ppmvd corrected at 15 percent oxygen over a three-hour average.

10. Project ROG (VOC) emissions are limited to 2 ppm corrected at 15 percent oxygen over a one-hour average.

11. Project ammonia slip emissions resulting from use of SCR are limited to 5 ppm over a one-hour average.

12. Project PM_{10} cooling tower emissions are limited to 6.2 lb/day and cooling tower mist drift eliminators shall limit the drift rate to 0.0005 %.

13. To mitigate the project's violations of state and federal PM_{10} standards, the project owner has purchased SCAQMD Priority Reserve emission reduction credits (ERCs) in accordance with Rule 1309.1 and an ERC Certificate.

14. To mitigate the project's NO_x emissions, the project owner has purchased RECLAIM Trading Credits.

15. The MGS offset package complies with Public Resources Code, section 25523(d)(2).

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

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

CONDITIONS OF CERTIFICATION

AQ-C1 The project owner (City of Vernon) shall develop and submit to the CPM for approval an Air Quality Construction Mitigation Plan (AQCMP) using any or all of the elements listed below to maintain construction-related emissions so that the difference between upwind and downwind ambient air concentration does not exceed 235 ug/m^3 (averaged over 1 hour) for NO_2 and 50 ug/m^3 (averaged over 24 hours) for PM_{10}. The City shall identify the placement of upwind and downwind monitoring for NO_2 and PM_{10} in the AQCMP. In addition to the measures described below, the City may develop supplemental measures to be approved by the CPM in order to achieve the identified goals.

1. Redirect pedestrian traffic from the square block area described by the intersections of Leonis, 50th, Seville and Soto Avenues.

2. Restrict the use of multiple heavy construction equipment at the MGS project site.

3. Unless shown to be impractical, use a water emulsion diesel fuel in all diesel powered construction equipment to reduce both PM_{10} and NO_x emissions (equipment tanks must be emptied and refilled with this fuel prior to operation on-site). Otherwise, use ultra low sulfur diesel fuel (equipment tanks must be emptied and refilled with this fuel prior to operation on-site).

4. Use only 1996 CARB or EPA Certified or better diesel engines. In the event that a 1996 CARB or EPA certified engine is not available, use in conjunction with ultra low sulfur diesel fuel, catalyzed diesel particulate filters (CDPF) on all diesel engines over 100 bhp with the exemptions listed. All exempted equipment must use water emulsion diesel fuel if available on-site. If water emulsion diesel fuel is not available on-site, then all exempted equipment must use CARB certified ultra low sulfur diesel fuel. Exempted equipment include:
    - Cranes;
    - On-road licensed vehicles; and,

- Loaders, skiffs, or backhoes that operate less than 2 hours at a time.

5. Identify the employee parking area(s) and surface composition of those parking area(s).

Watering of all disturbed areas twice daily.

Use sandbags to prevent run off.

Use wheel-washing areas prior to large trucks leaving the project site.

Describe methods that will be used to clean mud and dirt that has been tracked-out from the project site onto public roads.

For any transportation of solid bulk material

- Use vehicle covers
- Wet the transported material
- Use appropriate amount of freeboard

Identify methods for the stabilization of storage piles and disturbed areas.

Employ windbreaks at appropriate locations.

Verification: The City of Vernon shall submit the AQCMP for approval to the CPM no later than 45 days prior to site mobilization.

AQ-C2 The City of Vernon shall identify the individual(s), for approval by the CPM, that will be on-site during all construction activities to ensure that all measures called for in the AQCMP are carried out.

Verification: The City of Vernon shall submit the name and contact information along with a resume of the individual(s) for approval to the CPM 10 days prior to site mobilization.

AQ-C3 The City of Vernon shall submit to the CPM for approval a monthly compliance report signed by the individual(s) identified in Condition of Certification **AQ-C2**, that identifies all upwind-downwind monitoring results and mitigation measures implemented per the AQCMP. The City of Vernon shall submit for approval the format of this monthly report to the CPM.

Verification: The City of Vernon shall submit the format for the Monthly Compliance Report to the CPM no later than 10 days prior to site mobilization. The City of Vernon shall submit the Monthly Compliance Report for each month that construction activities occur for approval by the CPM no later than the 15th of the following month.

AQ-C4 The City of Vernon shall submit to the CPM for approval prior to construction of the cooling tower, the cooling tower design details including following elements:

1. materials of construction,
2. drift eliminator design and details (to be designed to a drift rate of 0.0005%),
3. vendor specific justification for the correction factor to be used to correlate blowdown total dissolved solid (TDS) to drift TDS in Condition of Certification **AQ-C7**, and
4. the circulating water recirculation rate.

Verification: The City of Vernon shall submit the information required above for approval to the CPM, no later than 45 days prior to commencement of construction of the cooling towers.

AQ-C5 No chromium containing compounds shall be added to cooling tower circulating water.

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

AQ-C6 The City of Vernon shall determine the TDS levels in the blowdown water by independent laboratory testing prior to initial operation and periodically thereafter.

Verification: The City of Vernon shall submit for approval to the CPM, a protocol for initial and weekly testing and the identification of the independent laboratory to be used 90 days prior to cooling tower operation. The City of Vernon shall submit weekly TDS reports for the blowdown water as part of the quarterly emission report to the CPM for approval.

AQ-C7 PM_{10} emissions from the cooling tower (in total) shall not exceed 6.2 lb/day.

Protocol: Compliance with the PM_{10} daily emission limit shall be demonstrated as follows:

PM_{10} lb/day = A*B*C*D

where:

A = circulating water recirculation rate (Condition of Certification **AQ-C4**)

B = total dissolved solids concentration in the blowdown water to be updated on a weekly basis (Condition of Certification **AQ-C6**)

C = design drift rate (Condition of Certification **AQ-C4**)

D = correction factor (Condition of Certification **AQ-C4**)

Verification: The City of Vernon shall calculate the daily PM_{10} emissions from the cooling tower and submit all calculations and results on a quarterly basis in the quarterly emission reports to the CPM for approval.

AQ-C8 The City of Vernon shall refrain from testing the firewater pump on the same day as either gas fire combustion turbines have been started up or shutdown as defined by Condition of Certification **AQ-C9**.

Verification: The City of Vernon shall submit to the CPM for approval all testing times and results of the diesel fired emergency firewater pump in the quarterly emissions report.

AQ-C9 The City of Vernon shall use the following definitions to determine compliance with startup, shutdown and any related emission or operational limitations.

Startup is defined as beginning when fuel is first delivered to the combustors of the combustion turbine and ending when the combustion turbine reaches all NO_x and CO emission limits for normal operation.

Shutdown is defined as beginning during normal operation with the intent to shutdown and ends with the secession of fuel being delivered to the combustors of the combustion turbine.

Verification: See Verification for Condition of Certification **AQ-6**.

AQ-C10 The City of Vernon shall commission and operate the Malburg Generation Station within the following emission limits.

Commissioning

During the first year of commissioning and operation, the following emission limits shall apply.

Annual Commissioning Emission Limits
Units are in pounds per year

	Gas Turbines (2)	Cooling Tower	Firewater Pump	Facility Total	Assumptions
CO	112,743	0	478	113,221	a,b,c
NO_x	229,531	0	1,377	230,908	a,b,c
PM_{10}	48,873	2,190	58	51,121	a,b,c
ROG	40,518	0	35	40,553	a,b,c
SO_x	4,294	0	2	4,296	a,b,c
Ammonia	49,514	0	0	49,514	a,b,c

Assumptions
a The gas turbines are undergoing initial commissioning for three months (2,160 hours) then 3 cold startups, 39 warm startups, 42 shutdowns and 4,355 hours at full load with the duct burners on @ 65 deg F.
b The cooling tower at full load for 8760 hours/year.
c The Firewater pump is being tested 199 hours/year.

Post Commissioning

After the end of the commissioning period, the following hourly and daily emission limits shall apply. The following annual emission limits shall only apply until after the first calendar year of operation is complete.

Hourly Emission Limits
Units are in pounds per hour

	Gas Turbines (2)	Cooling Tower	Firewater Pump	Facility Total	Assumptions
CO	48.6	0	0.59	49.19	a,c,d
NO_x	26.2	0	1.73	27.93	a,c,d
PM_{10}	7.78	0.26	0.08	8.12	b,c,d
VOC	3.3	0	0.05	3.35	a,c,d
SO_x	0.3	0	0.002	0.30	b,c,d
Ammonia	7.6	0	0.00	7.60	b,c,d

Assumptions
a The gas turbines are undergoing a cold startup @ 38 deg F.
b The gas turbines are at full load @ 38 deg F with the duct burners on.
c The cooling tower is at full load.
d The Firewater pump is being tested for ½ hour.

Daily Emission Limits

Units are in pounds per day

	Gas Turbines (2)	Cooling Tower	Firewater Pump	Facility Total	Assumptions
CO	104.00	0	0.59	104.59	a,d,e,
NO_x	175.00	0	1.73	176.73	a,d,e,
PM_{10}	158.00	6.20	0.08	164.28	a,d,e
VOC	36.00	0	0.05	36.05	a,d,e
SO_x	6.00	0	0.002	6.00	a,d,e
Ammonia	182.4	0	0.00	182.40	a,d,e

Assumptions

a The gas turbines are undergoing 1 warm startup (1.5 hours) per month, 8 hours/day full load with duct firing, 16 hours/day full load without duct firing and 0.5 hours shutdown per month @ 65 deg F averaged for 29 days/month.

b The gas turbines are at full load for 24 hours @ 38 deg F with the duct burners on

c The gas turbines are undergoing cold startup (2 hours) and baseload operation for 22 hours @ 38 deg F.

d The cooling tower is at full load for 24 hours/day

e The Firewater pump is being tested 0.5 hours/day

Annual Emission Limits

Units are in pounds per year

	Gas Turbines (2)	Cooling Tower	Firewater Pump	Facility Total		Assumptions
				Lbs/yr	Tons/yr	
CO	37,145	0	235	37,380	18.69	A,c,d
NO_x	52,674	0	689	53,363	26.68	b,c,d
PM_{10}	56,676	2,278	32	58,986	29.49	a,c,d
VOC	13,027	0	20	13,047	6.52	a,c,d
SO_x	2,122	0	1	2,123	1.06	a,c,d
Ammonia	66,576	0	0	66,576	3.29	a,c,d

Assumptions

a the gas turbines are undergoing one warm startup per month (1.5 hours), 8 hours/day of full load operation with the duct burner, 16 hours/day of full load operation without the duct burners and one shutdown per month (0.5 hours) @ 65 deg F.

b The gas turbines are undergoing 4 cold starts (2 hours), 52 warm starts (1.5 hours) 1314 hours of full load operation with the duct burner, 5782 hours of full load operation without the duct burner and 56 shutdowns (0.5 hours) per year.

c The cooling tower at full load for 8760 hours/day.

d The Firewater pump is being tested 199 hours/day.

Verification: The City of Vernon shall submit to the CPM for approval on a quarterly basis all emission records and calculations to demonstrate compliance with the emission limits stated herein as part of the quarterly emissions report.

AQ-C11 The City of Vernon shall submit a quarterly emissions report on a quarterly basis to the CPM for approval. The quarterly emissions report shall generally report all ammonia, NO_x, SO_x, CO, PM_{10} and VOC emissions from the Malburg Generation Station as necessary to demonstrate compliance with all emission limits. The fourth quarter emission report shall include an annual summary of all emissions of ammonia, NO_x, SO_x, CO, PM_{10} and VOC as necessary to demonstrate compliance with all annual emission limits.

Verification: The City of Vernon shall submit to the CPM the quarterly emissions report no less than 30 days after the end of each calendar quarter.

AQ-C12 The project owner shall commit specific emission reduction credits certificates for the MGS to offset the project emissions provided as provided for in **Table AQ-C12-1**. The project owner shall not use any ERCs identified in **Table AQ-C12-1** for purposes other than offsetting the MGS.

TABLE AQ-C12-1 – EMISSION OFFSET REQUIREMENTS

Certificate Number	Amount (lbs/day)	Pollutant
AQ004457	8	CO
AQ004458	13	CO
AQ004466	13	CO
AQ004474	2	CO
AQ004475	4	CO
AQ004847	14	CO
AQ004840	60	CO
AQ004801	45	CO
AQ004798	2	CO
Additional ERCs Certificate numbers not available, but are purchased and total	144	CO
Total	305	CO
AQ004367	108	VOC
AQ004493	22	VOC
Total	130	VOC
AQ004763	3	PM_{10}
Priority Reserve –Purchased by the City	160	PM_{10}
Priority Reserve – provided by the District	32	PM_{10}
Total	195	PM_{10}
1304 Exempted Emissions – provided by the District	7	SO_2

The project owner shall request from the District a report of the NSR Ledger Account for the MGS after the District has granted the City of Vernon a Permit to Construct and Temporary Permit to Operate. This report is to specifically identify the ERCs, Priority Reserve Credits and Rule 1304 Exempted Emissions used to offset the project emissions. The project owner shall submit this report to the CPM prior to turbine first fire.

Verification: No more than 15 days following the issuance of the District's Permit to Construct, the project owner shall request from the District the report of the NSR Ledger Account for the MGS. The project shall submit the report of the NSR Ledger Account for the MGS to the CPM no less than 30 days prior to turbine first fire.

AQ-C13 The City of Vernon shall submit to the CPM for review and approval any modification proposed by either the City or issuing agency to any project air permit.

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

AQ-C14 The City of Vernon shall install an oxidation catalyst prior to initiating operation for commissioning.

Verification: The City of Vernon shall submit engineering drawing or other such material showing the intended location of installation of the oxidation catalyst 90 days prior to initial startup to the CPM and District for review and approval. The City of Vernon shall notify the CPM of the intended installation date at least 30 days prior to the date of installation. The City of Vernon shall notify the CPM of the date of completed installation no less than 10 days following the date of completed installation.

South Coast Air Quality Management District Conditions of Certification

AQ-1 Except for open abrasive blasting operations, the City of Vernon shall not discharge into the atmosphere from any single source of emissions whatsoever any contaminant for a period or periods aggregating more than three minutes in any one hour which is:

a) As dark or darker in shade as that designated No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines; or
b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

Verification: The City of Vernon shall make the Malburg Generating Facility site accessible for inspection to the District, CARB and Commission.

AQ-2 The City of Vernon shall not use diesel oil containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

Verification: The City of Vernon shall submit fuel purchase records for approval to the CPM on a quarterly basis in the quarterly emissions report.

AQ-3 The city of Vernon shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Purchase records of fuel oil and sulfur content of the fuel

Verification: The City of Vernon shall submit fuel purchase records for approval to the CPM on a quarterly basis in the quarterly emissions report.

AQ-4 Accident release prevention requirements of Section 112 (r)(7):

a). The City of Vernon shall comply with the accidental release prevention requirements pursuant to 40CFR Part 68 and shall submit to the Executive Officer and the CPM, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and admission of a risk management plan (RMP).

b). The City of Vernon shall submit any additional relevant information requested by the Executive Officer, designated agency or CPM.

Verification: The City of Vernon shall submit for approval to the CPM the above required statement of compliance and any further information requested on an annual basis as part of the annual compliance report.

AQ-5 The City of Vernon shall limit the emissions from both gas fired combustion turbine-heat recovery steam generator train exhaust stacks as follows:

Contaminant	Emissions Limit
CO	7,633 lbs in any one month
PM_{10}	4,876 lbs in any one month
VOC	3,236 lbs in any one month
SO_x	214 lbs in any one month

For the purpose of this condition, the limit(s) shall be based on the total combined emissions from the exhaust stacks.

The City of Vernon shall calculate the emission limit(s) for CO during commissioning period, using fuel consumption data and the following emission factors: 78.43 lb/mmscf

The City of Vernon shall calculate the emission limit(s) for CO after commissioning period and prior to the CO CEMS certification, using fuel consumption data and the following emission factors: 23.80 lbs/startup and 13.94 lb/mmscf

The City of Vernon shall calculate the emission limit(s) for CO after the CO CEMS certification, based on readings from the certified CEMS. In the event the CO CEMS is not operating or the emissions exceed the valid upper range of the analyzer, the emissions shall be calculated in accordance with the approved CEMS plan.

The City of Vernon shall calculate the emission limit(s) by using the monthly fuel use data and the following emission factors:- PM_{10}: 7.397 lb/mmscf, VOC: 1.63 lb/mmscf & SO_x: 0.28lb/mmscf.

Verification: The City of Vernon shall submit all emission calculations, fuel use, CEM records and a summary demonstrating compliance of all emission limits stated in this Condition for approval to the CPM on a quarterly basis in the quarterly emissions report.

AQ-6 The 2 ppm NO_x emission limit shall not apply during turbine commissioning, start-up and shutdown. The commissioning period shall not exceed 573 operating hours per turbine from the initial start-up. Following commissioning, start-ups shall not exceed 2 hours and the number of start-ups shall not exceed one per day per turbine. Following commissioning, shutdowns shall not exceed 30 minutes and the number of shutdowns shall not exceed one per day per turbine. The City of Vernon shall provide the District and the CPM with the written notification of the initial start-up date. Written records of commissioning, start-ups and shutdowns shall be kept and made available to District and submitted to the CPM for approval.

Verification: The City of Vernon shall provide the District and the CPM with the written notification of the initial start-up date no later than 60 days prior to the startup date. The City of Vernon shall report to the CPM for approval all emissions, fuel use and emission calculations during the commissioning period on a monthly basis as part of the monthly compliance report. The City of Vernon shall submit to the CPM for approval, a record of all startups and shutdowns including duration and date of occurrence on a quarterly basis as part of the quarterly emission report.

AQ-7 The 2 ppm CO emission limit shall not apply during turbine commissioning, start-up and shutdown. The commissioning period shall not exceed 573 operating hours per turbine from the initial start-up. Following commissioning, start-ups shall not exceed 2 hours and the number of start-ups shall not exceed one per day per turbine. Following commissioning, shutdowns shall not exceed 30 minutes and the number of shutdowns shall not exceed one per day per turbine. The City of Vernon shall provide the District and CPM with the written notification of the initial start-up date.

Written records of commissioning, start-ups and shutdowns shall be kept and made available to District and reported for approval to the CPM.

Verification: See Verification for Condition of Certification **AQ-6**.

AQ-8 The 80.13 lb/mmscf NO_x emission limit(s) shall only apply during interim period to report RECLAIM emissions. The interim period shall not exceed 12 months from the initial start-up date.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-9 The 2 PPM NO_x emissions limit(s) are averaged over 1 hour at 15 percent oxygen, dry basis.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-10 The 2 ppm CO emission limit(s) are averaged over 3 hours at 15 percent oxygen, dry basis.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-11 The 2 ppm ROG emission limit(s) are averaged over 1 hour at 15 percent oxygen, dry basis.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-12 The 5 ppm NH_3 emission limit(s) are averaged over 1 hour at 15 percent oxygen, dry basis. The City of Vernon shall calculate and continuously record the ammonia slip concentration using the following:

NH3 (ppmv) = [a-(b*c/1,000,000)*(1,000,000/b)] where

a = ammonia injection rate (lbs/hr)/17 (lbs/lb-mole)

b = dry exhaust gas flow rate (lbs/hr)/29 (lbs/lb-mole)

c = change in measured NO_x across the SCR (ppmv dry basis)

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-13 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both emission limits at the same time.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-14 The City of Vernon shall not use engine cylinder lubricating oil containing the following specified compounds:

Compound		Weight percent
Ash Content	Greater than	0.038

Verification: The City of Vernon shall submit fuel purchase records for approval to the CPM on a quarterly basis in the quarterly emissions report.

AQ-15 The City of Vernon shall limit the operating time of the diesel fueled emergency backup generators and the firewater pump to no more than 199 hours each in any one year.

Verification: See Verification for Condition of Certification **AQ-C8**.

AQ-16 The City of Vernon shall install and maintain a pressure relief valve set at 25 psig in the ammonia storage tank.

Verification: The City of Vernon shall make the ammonia storage tank available for inspection by the District, Commission or CARB.

AQ-17 The City of Vernon shall install and maintain a(n) non-resettable elapsed time meter into the firewater pump to accurately indicate the elapsed operating time of the engine.

Verification: The City of Vernon shall make the firewater pump available for inspection by the District, Commission or CARB.

AQ-18 The City of Vernon shall install and maintain a(n) non-resettable totalizing fuel meter to accurately indicate the fuel usage of the turbines.

Verification: The City of Vernon shall make the firewater pump available for inspection by the District, Commission or CARB.

AQ-19 The City of Vernon shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia (NH_3).

The City of Vernon shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

Verification: The City of Vernon shall submit to CPM for approval the design drawing that clearly show the flow meter and recording device for the ammonia injection grid no less than 90 days prior to installation of the ammonia injection grid. The City of Vernon shall submit to the CPM for approval the annual calibration report for the flow meter and recording device as part of the annual compliance report.

AQ-20 The City of Vernon shall install and maintain a(n) temperature gauge to accurately indicate the temperature in the exhaust at the inlet to the SCR reactor.

The City of Vernon shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

Verification: The City of Vernon shall submit to CPM for approval the design drawing that clearly show the temperature gauge and recording device for the inlet to the SCR reactor no less than 90 days prior to installation of the SCR. The City of Vernon shall submit to the CPM for approval the annual calibration report for the temperature gauge and recording device as part of the annual compliance report.

AQ-21 The City of Vernon shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column.

The City of Vernon shall also install and maintain a device to continuously record the parameter being measured.

The measuring device or gauge shall be accurate to within plus or minus 5 percent. It shall be calibrated once every 12 months.

Verification: The City of Vernon shall submit to CPM for approval the design drawing that clearly show the pressure gauge and recording device across the SCR reactor no less than 90 days prior to installation of the SCR. The City of Vernon shall submit to the CPM for approval the annual calibration report for the pressure gauge and recording device as part of the annual compliance report.

AQ-22 The City of Vernon shall conduct source test (s) for the pollutant(s) identified below:

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
CO Emissions	District Method 100.1	1 hour	Outlet of SCR
NO_x Emissions	District Method 100.1	1 hour	Outlet of SCR
PM Emissions	Approved District Method	District approved averaging time	Outlet of SCR
VOC Emissions	Approved District Method	1 hour	Outlet of SCR
SO_x Emissions	Approved District Method	District approved averaging time	Fuel Sample
NH_3 Emissions	District Method 207.1 and 5.3 or EPA Method 17	1 hour	Outlet of SCR

The test (s) shall be conducted after approval of the source test protocol, but no later than 180 days after initial start up.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine and steam turbine generating output (MW).

The test shall be conducted in accordance with a District approved source test protocol. The protocol shall be submitted to the District engineer and the CPM no later than 45 days before the proposed test date and shall be approved by the District and the CPM before the test commences. The test

protocol shall include the proposed operating conditions of the turbines during the test the identity of the testing lab certifying that it meets the criteria of Rule 304, and a description of all sampling and analytical procedures.

The test shall be conducted with and without duct burner firing when this equipment is operating at loads of 100, 75, and 50 percent of maximum load for the NO_x, CO, VOC and ammonia tests. For all other pollutants, the test shall be conducted with and without the duct burner firing at 100% load only.

The District and the CPM shall be notified of the date and time of the test at least 10 days prior to the test.

Verification: The City of Vernon shall submit for approval to the District and the CPM the required initial source testing protocol no less than 45 days prior to the date of the source test. The City of Vernon shall notify the District and CPM of the date and time of the source test no less than 10 days prior to the test. The City of Vernon shall submit to the District and CPM for approval the results of the initial source test no later than 60 days following the date of the source test.

AQ-23 The City of Vernon shall conduct source test(s) for the pollutant(s) identified below:

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
VOC Emissions	Approved District Method	1 hour	Outlet of SCR
SO_x Emissions	Approved District Method	District approved averaging time	Fuel Sample
PM Emissions	Approved District Method	District approved averaging time	Outlet of SCR

The test shall be conducted at least once every three years.

The test shall be conducted and the results submitted to the District and the CPM within 60 days after the test date The District and the CPM shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration and/or monthly emissions limits.

The test shall be conducted 1) when the gas turbine and the duct burners are operating simultaneously at 100 percent of maximum heat input and 2) when the gas turbine is operating alone at 100 percent of maximum heat input.

Verification: The City of Vernon shall submit for approval to the District and the CPM the required source testing protocol no less than 45 days prior to the date of the source test. The City of Vernon shall notify the District and CPM of the date and time of the source test no less than 10 days prior to the test. The

City of Vernon shall submit to the District and CPM for approval the results of the source test no later than 60 days following the date of the source test.

AQ-24 The City of Vernon shall conduct source test(s) for the pollutant(s) identified below:

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH_3 Emissions	District Method 207.1 and 5.3 or EPA Method 17	1 hour	Outlet of SCR

The test shall be conducted and the results submitted to the District and the CPM within 60 days after the test date The District and the CPM shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter. The NO_x concentration, as determined by the certified CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable or not yet certified, a test shall be conducted to determine the NO_x emissions using District Method 100.1 measured over a 60-minute averaging period.

Verification: The City of Vernon shall submit for approval to the District and the CPM the required source testing protocol no less than 45 days prior to the date of the source test. The City of Vernon shall notify the District and CPM of the date and time of the source test no less than 10 days prior to the test. The City of Vernon shall submit to the District and CPM for approval the results of the source test no later than 60 days following the date of the source test.

AQ-25 The City of Vernon shall install and maintain a CEMS in each exhaust stack of the combustion turbine-HRSG trains to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis

The CEMS will convert the actual CO concentrations to mass emission rates (lb/hr) and record the hourly emission rates on a continuous basis.

The CEMS shall be installed and operated in accordance with an approved District Rule 218 CEMS plan application. The City of Vernon shall not install the CEMS prior to receiving initial approval from District.

The CEMS shall be installed and operated to measure CO concentration over a 15minute averaging time period.

The CEMS shall be installed and operating no later than 90 days after initial start-up of the turbine.

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-26 The City of Vernon shall install and maintain a CEMS to measure the following parameters:

NO_x concentration in ppmv

Concentration shall be corrected to 15 percent oxygen on a dry basis.

The CEMS shall be installed and operating no later than 12 months after the initial start-up of the turbine and shall comply with the requirements of Rule 2012. During the interim period between the initial start-up and the provisional certification date of the CEMS, the City of Vernon shall comply with the monitoring requirements of Rule 2012 (h)(2) and Rule 2012 (h)(3). Within two weeks of the turbine start-up date, the City of Vernon shall provide written notification to the District of the exact date of start-up.

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-27 The City of Vernon shall limit the fuel usage of each turbine-duct burner pair to no more than 330 million cubic feet per month. The City of Vernon shall keep records, in a manner approved by the District, for the operational status of the duct burners and their fuel use.

Verification: The City of Vernon shall submit to the CPM for approval all emissions and emission calculations on a quarterly basis as part of the quarterly emissions report.

AQ-28 The City of Vernon shall vent combustion turbines and HRSGs to the CO oxidation/SCR control system whenever the turbines are in operation.

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-29 The City of Vernon shall vent ammonia storage tank, during filling, only to the vessel from which it is being filled.

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-30 For the purpose of the following condition number(s), "continuously record" shall be defined as recording at least once every hour and shall be calculated upon the average of the continuous monitoring for that hour.

Condition of Certification **AQ-17**

Condition of Certification **AQ-18**

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-31 For the purpose of the following condition number(s), "continuously record" shall be defined as recording at least once every hour and shall be calculated based upon the average of the continuous monitoring for that month.

Condition of Certification **AQ-19**

Verification: The City of Vernon shall make the Malburg Generation Station available for inspection by the District, Commission or CARB.

AQ-32 The MGS electric generating equipment shall not be operated unless the City of Vernon demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the City of Vernon demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility hold sufficient RTCs in an amount equal to the annual emission increase. The City of Vernon shall submit all such information to the CPM for approval.

Verification: The City of Vernon shall submit all identified evidence demonstrating compliance to the CPM on an annual basis as part of the annual compliance report.

AQ-33 The City of Vernon shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emissions data shall be expressed in terms of concentration (ppmv), corrected to 15 percent oxygen, dry basis.

All exhaust flow rates shall be expressed in terms of dry standard cubic feet per minute (DCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of % corrected to 15% oxygen.

Emissions data shall be expressed in terms of mass rate (lb/hr), and lbs/mm cubic feet. In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Source test results shall also include turbine fuel flow rate under which the test was conducted.

Source test report shall also include the oxygen level in the exhaust, fuel flow rate (CFH), the flue gas temperature, and the turbine and generator output (MW) under which the test was conducted.

Verification: The City of Vernon shall submit to the CPM the required source test of Conditions of Certification **AQ-21**, **-22 and -23** in compliance with this condition.

AQ-34 The City of Vernon shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coatings consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less, water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as applied in g/l of coating, less, water and exempt solvent, for other coatings.

Verification: The City of Vernon shall make these records available to the CPM upon request.

AQ-35 The City of Vernon shall keep records, in a manner approved by the District, for the following parameters or items:

Date of operation, the elapsed time, in hour and the reason for operation of the emergency diesel powered generators and/or the firewater pump.

Verification: The City of Vernon shall submit these records to the CPM on an annual basis in the annual compliance report.

AQ-36 The City of Vernon shall keep records, in a manner approved by the District, for the following parameters or items:

Natural gas fuel use during the commissioning period in the combustion turbines and HRSGs.

Verification: See verification of Condition of Certification **AQ-6**.

B. PUBLIC HEALTH

The public health analysis supplements the previous discussion on air quality and considers the potential public health effects from project emissions of toxic air contaminants. In this analysis, the Commission determines whether such emissions will result in significant adverse public health impacts that violate standards for public health protection.[16]

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.[17] In the absence of standards, state and federal regulatory programs have developed a health risk assessment procedure to evaluate potential health effects from TAC emissions.[18] The Air Toxics "Hot Spots" Information and Assessment Act requires the quantification of TACs from specified facilities that are categorized according to their emissions levels and proximity to sensitive receptors. (Health and Safety Code, § 44360 et seq.)

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[16] This Decision addresses other potential public health concerns in the following sections. The accidental release of hazardous materials is discussed in **Hazardous Materials Management** and **Worker Safety and Fire Protection**. 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**.

[17] Criteria pollutants are discussed in the Air Quality section. They are pollutants for which ambient air quality standards have been established by local, state, and federal regulatory agencies. The emission control technologies that the project owner will employ to mitigate criteria pollutant emissions are considered effective for controlling noncriteria pollutant emissions from the same source. (Ex. 34, p. 4.7-1.)

[18] The health risk assessment protocol is set forth in the Air Toxics "Hot Spot" Program Risk Assessment Guidelines developed by the California Air Pollution Control Officers Association (CAPCOA) pursuant to the Air Toxics "Hot Spots" Information and Assessment Act, AB 2588 (Health and Safety Code, § 44360 et seq.). (Ex. 1, § 8.6.2.1.)

1. Health Risk Assessment

Applicant performed a health risk assessment that was reviewed by Staff and the South Coast Air Quality Management District (Air District). Applicant's risk assessment employed scientifically accepted methodology that is consistent with the CAPCOA Guidelines and with methods developed by the California Office of Environmental Health Hazard Assessment (OEHHA), California Air Resources Board (CARB) and CAPCOA. (Ex. 1, § 8.6.2.1.1 et seq.; Ex. 34, p. 4.7-13.) This approach emphasizes a worst-case "screening" analysis to evaluate the highest level of potential impact. Applicant included the following steps in its analysis:

- Identification of the types and amounts of hazardous substances that the MGS project could emit to the environment;
- Estimation of the worst-case concentrations of project emissions in the environment using dispersion modeling;
- Estimation of the amounts of pollutants to which people could be exposed through inhalation, ingestion, and dermal contact; and
- Characterization of potential health risks by comparing worst-case exposure to safe standards based on known health effects. (Ex. 1, § 8.6.2.1; Ex. 34, pp. 4.7-1, 4.7-2.)

The risk assessment addressed three categories of health impacts: acute (short-term), chronic (long-term), and carcinogenic health effects. (Ex. 1, § p. 8.6.2.1.1 et seq.; Ex. 34, p 4.7-4.) Regulatory agencies use the hazard index method to assess the likelihood of acute or chronic non-cancer effects. In this approach, the hazard index is a numerical representation of the likelihood of significant health impacts at the reference exposure levels (RELs) expected for the source in question. After calculating the hazard indices for the individual pollutants,[19] these indices are added together to obtain a total hazard index. A total hazard index of 1.0 or less is considered an insignificant effect. (Ex. 34, pp. 4.7-2, 4.7-3.)

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[19] The project's noncriteria pollutants that were considered in analyzing non-cancer effects include: ammonia, used for the SCR system for NO_x control, acetaldehyde, acrolein, benzene, 1,3 butadiene; ethylbenzene, formaldehyde, hexane, naphthalene, aromatic hydrocarbons (PAHs), propylene oxide, toluene, and xylenes. (Ex. 1, Table 8.6.1; Ex. 35, p.4.7-1.)

Potential cancer risk is calculated by multiplying the exposure estimate by the potency factors for the individual carcinogens involved.[20] The chief exposure assumption is one of continuous exposure (at maximum emission rates) over a 70-year period at each identified receptor location. When combined with EPA-approved dispersion modeling methodologies, the use of OEHHA cancer potency factors and OEHHA and CAPCOA RELs, this provides an upper bound estimate of the potential risks. Actual risks are not expected to be any higher than the predicted risks and are likely substantially lower. (Ex. 34, p. 4.7-3.) Project emissions were calculated based on the Air District's updated air toxic emission factors, which were developed for AB 2588 Toxic "Hot Spots" source test data. (Ex. 1, p. 5.16-7; Ex. 3, § 5.16.2.4.) These potential TACs were identified from the California Air Toxics Emission Factor (CATEF) version 1.2 database. (Ex. 1. p. 8.6-5.) Energy Commission staff considers a potential cancer risk of ten in a million as the level of significance.[21] (Ex. 34, p. 4.7-4.)

2. Potential Impacts

Applicant used a one-mile radius of the site to locate sensitive receptors, such as schools, day care centers, and hospitals. (Ex. 1, § 8.6-2.) Applicant then applied the USEPA-approved ISCST3 air dispersion model to identify ground-level concentrations in all terrain settings based on one year of meteorological data. Additional modeling was performed to estimate the health risks at five residential locations near the MGS project site. (Ex. 28, p. 2-2.) The modeling results were

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[20] The following noncriteria pollutants were considered with regard to possible cancer risk: acetaldehyde, benzene, 1,3 butadiene, formaldehyde, PAHs, arsenic, lead, mercury and propylene oxide. (Ex. 1, Table 8.6.1; Ex. 35, p. 4.7-1.)

[21] Under the Air Toxics "Hot Spots" and the Proposition 65 programs, a risk of 10 in a million is considered significant and used as a threshold for public notification. The Proposition 65 significance level applies separately to each cancer-causing substance, whereas Staff determines significance based on the total risk from all cancer-causing chemicals. The Air District allows an incremental risk of 10 in a million for a source such as MGS where the best available control technology for air toxics (T-BACT) is used. (Ex. 34, p. 4.7-4.) In this case, T-BACT includes the project's dry low NO_x combustors, oxidation catalyst, and SCR technology.

incorporated into the health risk analysis established in the AB 2588 model. (*Ibid*.)

a. Construction Phase

The construction phase is expected to take approximately 16 months.[22] Potential construction-related public health impacts are due to (1) windblown dust from site grading and other construction-related activities, and (2) diesel fuel emissions from heavy equipment and vehicles used in construction. (Ex. 34, pp. 4.7-9.)

Worst-case daily dust emissions of 32.25 lb/day PM_{10} are expected. (Ex. 34, p. 4.7-9.) Mitigation measures will reduce the maximum calculated PM_{10} concentrations. (*See* **Air Quality** section in this Decision.) These measures include the use of extensive fugitive dust control measures (stipulated by SCAQMD Rule 403) which are assumed to result in a 90 percent reduction of emissions. Condition of Certification **AQ-C1** requires the spraying of water to manage buildup of loose materials and requires all trucks hauling loose material to apply an appropriate cover. (Ex. 34, pp. 4.7-9, 4.1-38; Ex. 42, p. 4.1-6.)

Diesel emissions are generated from sources such as trucks, graders, cranes, welding machines, electric generators, air compressors, and water pumps. Although diesel exhaust contains criteria pollutants such as nitrogen oxides, carbon monoxide, and sulfur oxides, it also includes a complex mixture of thousands of gases and fine particles. (Ex. 34, p. 4.7-8.) Exposure to diesel exhaust causes short-term adverse health effects, including increased cough, labored breathing, chest tightness, wheezing, and eye and nasal irritation. Long-term effects can include increased coughing, chronic bronchitis, reductions in lung function, and inflammation of the lung. Epidemiological studies also strongly

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[22] According to Applicant, due to the relatively short duration of construction of the project, significant long-term public health effects are not expected. To ensure worker safety, safe work practices will be followed. (See **Worker Safety**; Ex. 1, p. 8.6-4.)

suggest a causal relationship between occupational diesel exhaust exposure and lung cancer. (Ex. 34, p. 4.7-9.)

Condition of Certification **AQ-C1** requires the Applicant to submit an Air Quality Construction Mitigation Plan. Measures identified in the Plan include using water emulsion diesel fuel in all diesel powered construction equipment to reduce both PM10 and NOx emissions. If impractical, ultra-low sulfur diesel fuel must be used. (Ex. 42, p. 4.1-6; *see* **Air Quality** section.) The Applicant is also required to use only 1996 CARB or EPA Certified or better diesel engines. If not available, then the Applicant is required to use, in conjunction with ultra-low sulfur diesel fuel, a catalyzed diesel particulate filter on all diesel engines over 100 hp. *(Ibid.)*

The catalyzed diesel particulate filters are passive, self-regenerating filters that reduce particulate matter, carbon monoxide, and hydrocarbon emissions through catalytic oxidation and filtration. The degree of particulate matter reduction is comparable for both mitigation measures in the range of approximately 85-92 percent. Such filters will reduce diesel emissions during construction and reduce any potential for significant health impacts. (Ex. 34, p. 4.7-9.)

A Phase II Environmental Site Assessment (ESA) was performed and one boring on the MGS site revealed a detectable concentration of total petroleum hydrocarbons. Remediation was performed following a sub-service diesel fuel release at Station A, but the potential exists for encountering diesel-fuel contaminated soil during construction-related excavation and grading. (Ex. 34 p. 4.7-8; *see* **Waste Management** section.) The Conditions of Certification contained in the **Waste Management** section will reduce the risk to both on-site workers and the off-site public to insignificant levels.

b. Operation

The emissions sources at the MGS project include two combustion turbine generators; two heat recovery steam generators, one condensing steam turbine generator, a diesel fire pump and cooling tower. The existing emergency diesel generators can be used during peak emergency calls. During operation, potential public health risks are related to diesel exhaust emissions and natural gas combustion emissions. (Ex. 34, p. 4.7-9.)

The existing diesel generators, although not considered part of this project, will be started once a month for testing and maintenance in accordance with an existing Air District permit to operate. (Ex. 28, p. 2-3; Ex. 34, p. 4.1-34; Ex. 37; see **Air Quality** Condition **AQ-15**.) The diesel engine fire pump must be tested on a weekly basis in accordance with safety requirements to analyze diesel particulate emissions for adverse health effects. (Ex. 34, p. 4.1-34; Ex. 42, p. 4.1-1, see **Air Quality** Conditions of Certification **AQ-C8** and **AQ-15**.)

The AFC lists non-criteria pollutants that may be emitted from MGS project turbines, cooling tower, and Selective Catalytic Reduction (SCR) system as combustion byproducts. (Ex. 1, Table 8.6-1.) The parties identified the project's potential toxic air contaminant emissions based on the California Air Toxics Emission Factor (CATEF) Version 1.2 database maintained by the California Air Resources Board. (Ex. 34, p. 4.7-10; *see* pollutants in footnotes 19 & 20, *ante*.)

The screening health risk assessment for the project, including combustion and non-combustion emissions, resulted in a maximum acute hazard index of 0.062 at the site of the maximally exposed individual resident (MEIR) and 0.090 at the

site of the maximally exposed individual worker (MEIW).[23] The chronic hazard index at the point of maximum impact is 0.032 for the MEIR and the MEIW. (Ex. 34, p. 4.7-12.) **Public Health Table 2** (replicated below from Staff's testimony) shows both acute and chronic hazard indices are under the REL of 1.0, indicating that no short- or long-term adverse health effects are expected.

Public Health Table 2
Operation Hazard/Risk

Type of Hazard/Risk	Hazard Index/Risk	Significance Level	Significant?
RESIDENTIAL ACUTE NONCANCER	0.062	1.0	No
RESIDENTIAL CHRONIC NONCANCER	0.032	1.0	No
RESIDENTIAL INDIVIDUAL CANCER	0.57×10^{-6}	10.0×10^{-6}	No
OCCUPATIONAL ACUTE NONCANCER	0.090	1.0	No
OCCUPATIONAL CHRONIC NONCANCER	0.032	1.0	No
OCCUPATIONAL INDIVIDUAL CANCER	0.96×10^{-6}	10.0×10^{-6}	No

Source: Ex. 28, Table 2.

As shown in **Public Health Table 2**, total worst-case individual cancer risk is calculated to be 0.57 in one million at the site of the MEIR and 0.96 in one million at the site of the MEIW. Staff reviewed the health risk assessment performed by the Applicant and found it consistent with guidelines adopted by Office of

[23] The MEIR was assumed to be exposed 24 hours per day, 365 days per year for 70 years. The MEIW was assumed to be exposed for 40 hours per week, 50 weeks per year for 46 years. (Ex. 28, p. 2-2.) The points of maximum impact identified in Applicant's health risk assessment were 200 meters east/northeast of the project fenceline for the acute hazard index, 1.2 km east of the fenceline for the chronic hazard index, and at the north fenceline for maximum individual cancer risk. (Ex. 28, Appendix A.)

Environmental Health Hazard Assessment (OEHHA), CARB, and CAPCOA. (Ex. 34, p. 4.7-13.)

Staff also performed an independent analysis of risks posed by operations of the MGS facility using standard Cal-EPA exposure assumptions. The maximum theoretical cancer risk was determined by Staff to be 0.69 in a million for the MEIR, a value slightly higher than the 0.57 in a million value calculated by the Applicant but still significantly lower than the significance level of 10 in a million. For the MEIW, Staff determined cancer risk to be 0.97 in a million, a value equivalent to the 0.96 in a million value calculated by the Applicant. Therefore, Staff found the health risk assessment prepared by the Applicant in the Revised Public Health Section of the AFC (Ex. 28) accurately concludes that the maximum theoretical risks and hazards posed by the toxic air contaminants emitted by the three sources described above are less than the significance level of 10 in one million. (Ex. 34, p. 4.7-13.)

MGS will use reclaimed water for cooling. Its design includes wet cooling towers that produce associated drift (water droplets released to the atmosphere. In accordance with California Code of Regulations, Title 22, Section 60306[24], the cooling tower for the facility will have a high efficiency drift eliminator designed to reduce drift to 0.0005 percent of circulating water (cooling water). In addition, the circulating water will contain conditioning chemicals, including sodium hypochlorite, which will be shock fed into the system to act as an effective biocide. Finally, a proprietary nonoxidizing biocide will be available onsite for direct feed into the circulating water system to control algae, if necessary. (Ex. 1, § 3.4, 7.8.) Section 60306 also requires the use of biocides to minimize the growth of Legionella and other micro-organisms in cooling systems using

[24] Section 60306 states in pertinent part: "c) Whenever a cooling system, using recycled water in conjunction with an air conditioning facility, utilizes a cooling tower or otherwise creates a mist that could come into contact with employees or members of the public, the cooling system shall comply with the following: (1) A drift eliminator shall be used whenever the cooling system is in

recycled water. Legionella is a type of bacteria that grows in water and causes Legionellosis, otherwise known as Legionnaires' disease. Condition of Certification **Public Health-1** requires the project owner to develop and implement a Cooling Water Management Plan to minimize the potential for bacterial growth in cooling water. *(Ibid.)*

3. Cumulative Impacts

When toxic pollutants are emitted from multiple sources within a given area, the cumulative or additive impacts of such emissions could lead to significant health impacts, even when such pollutants are emitted at insignificant levels from the individual sources involved. Analyses of such emissions have shown, however, that the peak impacts of such toxic pollutants are normally localized within relatively short distances from the source. Toxic pollutant levels beyond the point of maximum impact normally fall within ambient background levels. (Ex. 3, § 9.3; Ex. 34, p. 4.7-12.)

According to Staff, there are no identified significant direct or cumulative impacts resulting from the construction or operation of the project (Ex. 34, p. 4.7-14.)

FINDINGS AND CONCLUSIONS

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

1. Potential construction-related adverse health effects from contaminated soils, diesel emissions, and fugitive dust will be mitigated to insignificant levels.

2. Normal operation of the project will result in the routine release of criteria and non-criteria pollutants that have the potential to adversely impact public health.

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operation. (2) A chlorine, or other, biocide shall be used to treat the cooling system recirculating water to minimize the growth of Legionella and other micro-organisms."

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 (HRA), using well-established scientific protocol, to analyze potential adverse health effects of non-criteria pollutants emitted by MGS.

5. There are sensitive receptors within a one-mile radius of the project site.

6. The HRA indicates that acute and chronic non-cancer health risks from project emissions during construction and operation are below the levels of significance.

7. The HRA indicates that implementation of the required T-BACT mitigation measures for air toxics will reduce the potential risk of cancer from project emissions to insignificant levels.

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

9. Implementation of the Condition of Certification, below, and the Conditions contained in the **Air Quality** section of this Decision will ensure that the project conforms with all applicable laws, ordinances, regulations, and standards (LORS) related to Public Health as identified in the pertinent portions of **Appendix A** in this Decision.

The Commission, therefore, concludes that with implementation of the Condition of Certification below, project emissions of non-criteria pollutants will not pose a significant direct, indirect, or cumulative adverse public health risk. All other Conditions of Certification that control project emissions are specified in the **Air Quality** section of this Decision.

CONDITION OF CERTIFICATION

Public Health-1 The project owner shall develop and implement a Cooling Water Management Plan to minimize the potential for bacterial growth in cooling water. The Plan may include weekly monitoring of biocide and chemical biofilm prevention agents, periodic maintenance of the cooling water system to remove bio-film buildup, and testing to determine the concentrations of Legionella bacteria in the cooling water.

Verification: At least 60 days prior to the commencement of cooling tower operations, the Cooling Water Management Plan shall be provided to the CPM for review and approval.

C. WORKER SAFETY AND FIRE PROTECTION

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

Summary and Discussion of the Evidence

1. Potential Impacts to Worker Safety

During construction and operation, workers may be exposed to chemical spills, hazardous wastes, fires, gas explosions, moving equipment, live electric conductors, confined space entry and egress problems, and exposure to contaminated soils. (Ex. 1, Table 8.7-1; Ex. 34, p. 4.14-4.) Exposure to these hazards can be minimized through adherence to appropriate design criteria and administrative controls, use of personal protective equipment (PPE), and compliance with applicable LORS.[25] (Ex. 1, § 8.7.3.1.)

2. Mitigation Measures

Applicant will develop and implement a "Construction Safety and Health Program" and an "Operation Safety and Health Program," both of which must be reviewed by the appropriate agencies prior to project construction and operation. (Ex. 1, §§ 8.7.2, 8.7.3; Ex. 34, pp. 4.14-5 et seq.) Separate Injury and Illness Prevention Programs, Personal Protective Equipment Programs, Exposure

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[25] California Occupational Health and Safety Administration (Cal/OSHA) regulations (Cal. Code of Regs., tit. 8, § 1500 et seq.) and other applicable federal, state, and local laws affecting industrial workers are identified in Appendix A of this Decision. (*See* Ex. 34, pp. 4.14-1 through 4.14-3.)

Monitoring Programs, Emergency Action Plans, Fire Protection and Prevention Plans, and other general safety procedures will be prepared for both the construction and operation phases of the project. (*Ibid*.) These comprehensive programs will contain more specific plans dealing with the site and ancillary facilities, such as the Emergency Action Plan, as well as additional programs under the General Industry Safety Orders, Electrical Safety Orders, and Unfired Pressure Vessel Safety Orders. (*Ibid.*) Conditions **Worker Safety-1** and **Worker Safety-2** require the project owner to consult with Cal/OSHA, as appropriate, and the City of Vernon Fire Department to ensure that these programs comply with applicable LORS.

3. Fire Protection and Prevention Plans

The project will include comprehensive on-site fire protection and suppression systems as first line defense in the event of fire. (Ex. 1, § 8.7-9-8.7-12; Ex. 34, pp. 4.14-9, 4.14-10.) To ensure that the fire protection and suppression systems comply with current standards, the City of Vernon Fire Department must approve the project's Construction Fire Protection and Prevention Plan thirty days prior to the start of construction activities. (Ex. 34, p. 4.14-11.) *See* Condition **Worker Safety-1**. Condition **Worker Safety-2** requires the project owner to provide a Fire Protection and Prevention Program for review by the City of Vernon Fire Department prior to the start of project operation.

The project will rely on both on-site fire protection systems and local fire protection services. The on-site fire protection system provides the first line of defense for small fires. During construction an interim fire protection system will be in place. The permanent facility fire protection system will be placed in service as early as possible during the construction phase. (Ex. 34, p. 4.14-9.)

According to Staff, if the Applicant follows the fire prevention plan as indicated in the AFC, it will meet the minimum fire protection and suppression requirements.[26] (Ex. 34, p. 4.14-9.) The fire water supply consists of 150,000 gallons of firewater that will be supplied from an existing 275,000-gallon underground cooling water tank. A fire main for the facility will be connected to this existing tank. According to Staff, this system will provide more than an adequate quantity of fire-fighting water to yard hydrants, hose stations, and water spray and sprinkler systems. The fire pumps have a capacity of 1,500 gallons/minute to deliver water to the fire protection water piping network. (Ex. 34, pp. 4.14-9, 4.14-10.)

In addition, a carbon dioxide fire protection system will be provided for the combustion turbine generator and accessory equipment, fire detection sensors will be installed, fire hydrants and hose stations will supplement the plant fire protection system, and smoke detectors, combustible gas detectors, and appropriate class of service portable extinguishers will be located throughout the facility at code-approved intervals. (Ex. 34, p. 4.14-10.)

In the event of a major fire, fire support services including trained firefighters and equipment for a sustained response would be required by the City of Vernon Fire Department. Fire Station 2 is the closest station to the site and is located approximately one mile from the project location. The response time to the project site is estimated at 3 minutes or less (Ex. 34, p. 4.14-4). This station will provide first EMS response, is able to provide adequate response in the event of a major accident involving multiple injuries, and is also assigned as the off-site hazardous materials (HazMat) responder for the MGS. Backup HazMat support would be provided by the Santa Fe Springs Fire Department. *(Ibid.)* Fire Station 1, located 1.25 miles from the MGS site, will be the second responder with response time of approximately 3 minutes. *(Ibid.)*

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[26] See Local LORS section of the Staff Assessment. (Ex. 34, p. 4.14-3.)

Staff concluded that fire risks at the proposed facility are similar to those of existing facilities in the immediate vicinity and thus pose no significant added demands on local fire protection services. (Ex. 34, p. 4.14-10.)

Staff reviewed the potential for MGS-related activities to result in cumulative impacts on the fire and emergency response capabilities of the City of Vernon Fire Department. (Ex. 34, p. 4.14-10.) The Fire Department indicated that its response time, equipment and personnel at Stations 1 and 2 were adequate to meet the needs of an industrial facility of this type. *(Ibid.)* Staff, therefore, concluded that the potential cumulative impacts of this project to the fire and emergency services of the City of Vernon Fire Department would be insignificant. (*Ibid.*)

FINDINGS AND CONCLUSIONS

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

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

2. To protect workers from job-related injuries and illnesses, the project owner will implement comprehensive Safety and Health Programs for both the construction and operation phases of the project; each of the programs will include an Injury/Illness Prevention Program, a Personal Protective Equipment Program, an Exposure Monitoring Program, an Emergency Action Plan, a Fire Protection and Prevention Plan, and other general safety procedures.

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

4. The City of Vernon Fire Department will provide fire protection and emergency response services to the project.

5. City of Vernon Fire Station 2, located about one mile from the project site, is the assigned first responder to the MGS with a response time of about 3 minutes. City of Vernon Fire Station 1 will provide backup emergency response to the MGS site with a response time of about 3 minutes.

6. City of Vernon Fire Station 2 is the assigned HazMat first responder. Back-up HazMat support will be provided by the Santa Fe Springs Fire Department.

7. Existing fire and emergency service resources are adequate to meet project needs.

8. The MGS will not result in cumulative impacts to the City of Vernon Fire Department's emergency response capabilities.

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

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

CONDITIONS OF CERTIFICATION

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

A Construction Injury and Illness Prevention Program;

A Construction Personal Protective Equipment Program;

A Construction Exposure Monitoring Program;

A Construction Emergency Action Plan; and

A Construction Fire Protection and Prevention Plan.

The Safety Program, Injury and Illness Prevention Program, Personal Protective Equipment Program, and the Exposure Monitoring Program shall be submitted to the California Department of Industrial Relations, Division of Occupational Safety and Health (Cal/OSHA) Consultation Service, if appropriate, for review and comment concerning compliance of the program with all applicable Safety Orders, and then to the CPM for review and approval. The Construction Fire Protection and Prevention Plan and Emergency Action Plan shall be submitted to

the City of Vernon Fire Department for review and comment prior to submittal to the CPM for review and approval.

Verification: At least 30 days prior to the start of construction, the project owner shall submit to the CPM a copy of the Project Construction Safety and Health Program, including a copy of the cover letter transmitting the Programs to Cal/OSHA's Consultation Service, if appropriate.

WORKER SAFETY-2 The project owner shall submit to the CPM a copy of the Project 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 Protection and Prevention Program (8 CCR § 3221); and;

Personal Protective Equipment Program (8 CCR §§ 3401-3411).

The Operation Injury and Illness Prevention Plan, Emergency Action Plan, and Personal Protective Equipment Program shall be submitted to the Cal/OSHA Consultation Service for review and comment concerning compliance of the program with all applicable Safety Orders prior to submittal to the CPM for review and approval. The Operation Fire Protection Plan and the Emergency Action Plan shall also be submitted to the City of Vernon Fire Department for review and comment prior to submittal to the CPM for review and approval.

Verification: At least 30 days prior to the start of operation, the project owner shall submit to the CPM a copy of the Project Operations and Maintenance Safety & Health Program.

D. HAZARDOUS MATERIALS MANAGEMENT

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

Summary and Discussion of the Evidence

Several locational factors affect the potential for project-related hazardous materials to cause adverse impacts, including local meteorological conditions, terrain characteristics, any special site factors, and the proximity of population centers and sensitive receptors. The evidence of record incorporates these factors in the analysis of potential impacts. (Ex. 1, § 8.12 et seq.; Ex. 34, p. 4.4-4.)

1. Potential Impacts

Staff's Appendix C (Ex. 34, § 4.4.) appended to Condition of Certification **HAZ-1**, below, lists the hazardous materials that will be used and stored on site including aqueous ammonia, sulfuric acid, and hydrochloric acid which are deemed *acutely hazardous*. None of these materials, however, will be used or stored in excess of regulated threshold quantities under the California Accidental Release Prevention (CalARP) Program[27] except for aqueous ammonia. (Ex. 34, p. 4.4-1.) The other substance of concern is natural gas, which will be used in large quantities but not stored on site. (*Id.*, Ex. 1, § 8.12.2.2.3.) Potential impacts from

[27] The CalARP Program includes both federal and state programs established to prevent accidental release of regulated toxic and flammable substances. (CA Health & Safety Code, § 25531 et seq.; Cal. Code of Regs., tit. 19, § 2720 et seq.) Regulated substances are those stored or used in amounts exceeding threshold planning quantities (TPQs) that would require the filing of a Risk Management Plan under the CalARP program. (Ex. 1, § 8.12.2.)

other gases currently stored on site are not considered significant since quantities are limited, incompatible gases are stored separately, and appropriate storage containers are maintained in accordance with applicable law. No significant changes are expected with the addition of the MGS. (Ex. 34, p. 4.4-1, 4.4-2.)

Other hazardous materials that will be used at the MGS include biocides, scale inhibitors, corrosion inhibitors, and small quantities of compressed gases used for maintenance. (Ex. 34, p. 4.4-6.) Staff does not expect these materials to pose a potential risk for off-site impacts as they will be stored in solid form or in small quantities, have low mobility or have low levels of toxicity. (*Ibid.*)

During the construction phase of the project, the only hazardous materials proposed for use include gasoline, diesel fuel, oil, welding gases, lubricants, solvents, antifreeze, pesticides and paint. Any impact of spills or other releases of these materials will be limited to the site due to the small quantities involved. Fuels such as mineral oil, lube oil, and diesel fuel are all of very low volatility and represent an insignificant hazard on and off site even in larger quantities. Sulfuric acid, sodium hydroxide and sodium hypochlorite – all in aqueous (water) solution - will be stored on-site in small quantities (350-700 gallons) and do not pose a risk of off-site impacts because in aqueous solution they have relatively low vapor pressures and spills would be confined to the site. (Ex. 34, pp. 4.4-6, 4.4-7.) The potential for accidental spills during transfer from delivery vehicles to storage tanks will be reduced to insignificance by implementation of the Safety and Management Plan required by Condition of Certification **HAZ-3**. (Ex. 35, p. 4.4-15.)

Condition of Certification **HAZ-1** prohibits the project owner from using any hazardous materials not listed in Appendix C or in greater quantities than those identified in Appendix C without prior approval of the Energy Commission's Compliance Project Manager.

a. Aqueous Ammonia

Aqueous ammonia is used in the Selective Catalytic Reduction (SCR) process to control NOx emissions from combustion of natural gas in the facility. The accidental release of aqueous ammonia without proper mitigation can result in hazardous downwind concentrations of ammonia gas.[28] (Ex. 34, p.4.4-9.)

Applicant performed an Off-Site Consequences Analysis (OCA) to evaluate potential public health impacts in a "worst case scenario" resulting from a catastrophic failure of the storage tank and an alternative scenario addressing accidental release during truck unloading. (Ex. 1, § 8.12.2.2.2 et seq.) Staff considers the threshold significance level to be a one-time exposure to 75 parts per million (ppm) of ammonia gas.[29] (Ex. 34, p. 4.4-10.) The results of the Applicant's accidental release modeling showed that off-site airborne concentrations of ammonia would not exceed the level the 75 ppm at any off-site location. Airborne concentrations of 75 ppm were predicted to extend to 25 meters, well within the facility fence line. The maximum airborne concentration predicted to occur at the site boundary (40 meters) is approximately 30 ppm. (Ex. 1, p. 8.12-10.)

Eleven sensitive receptors reside within one mile of the project site. (Ex. 1, p. 8.12-10.) However, Staff indicated that based upon the OCA modeling, the nearest resident at 0.25 mile from the site would not even notice an odor should a release occur. The same holds true for all sensitive receptors in the one-mile radius. (Ex. 1, Figure 8.12-1; Ex. 34, p. 4.4-10.) Based on these modeling results, Applicant and Staff concluded that no significant off- site public health

[28] The choice of aqueous ammonia significantly reduces the risk that is associated with the more hazardous anhydrous form, which is stored as a liquid gas. (Ex. 34, pp. 4.4-1.)

[29] Staff's Appendix A, Table 1, replicated at the end of this section, shows the acute ammonia exposure guidelines for different sectors of the population.

consequences would result from an accidental ammonia release. (Ex. 1, p. 8.12-10; Ex. 34, p. 4.4-10.)

Plant workers in the vicinity of the ammonia truck unloading area could be exposed to harmful concentrations of ammonia due to accidental release. The project includes several engineering and administrative controls to reduce the likelihood and consequences of an ammonia release. (Ex. 1, pp. 8.12-7, 8.12-8; Ex. 34, pp. 4.4-13 and 4.4-14.) Aqueous ammonia will be stored in a storage tank with a nominal 8,000 gallon tank capacity on a bermed pad with a concrete containment wall. (Ex. 1, p. 8.12-7.) Safety features include construction of concrete berms or dikes as a containment area surrounding the ammonia storage tank and a concrete truck unloading area to contain accidental releases that might occur during storage or delivery. The unloading area will include drainage to an underground catchment basin with sufficient capacity to contain the entire contents of the tank with freeboard for precipitation. (Ex. 1, pp. 8.12-7, 8.12-8.) Administrative controls include worker training programs, process safety management programs, and compliance with all applicable health and safety laws, ordinances and standards. (Ex. 34, pp.4.4-14.)

To ensure implementation of these design plans, Condition **HAZ-3** requires the project owner to develop and implement a Safety Management Plan for ammonia deliveries. Condition **HAZ-4** requires the ammonia storage tank to be constructed according to industry specifications. The Conditions of Certification in the **Facility Design** section of this Decision requires compliance with seismic design specifications for storage facilities. (Ex. 34, p. 4.4-5.)

Staff believes that transportation of aqueous ammonia poses significant risk of exposure in the event of an accidental release on public roads. According to Staff, compliance with the extensive regulatory program that applies to shipment of hazardous materials on California Highways will ensure safe handling in

general transportation.[30] To address the issue of tank truck safety, aqueous ammonia will be delivered to the MGS site in U.S Department of Transportation (DOT) certified vehicles that meet or exceed the specifications of DOT Code MC-307. These are high integrity tankers designed to haul caustic materials such as ammonia with design capacity of 6,100 gallons. Condition of Certification **HAZ-8** ensures that regardless of which vendor supplies the aqueous ammonia, delivery will be made in a tanker, which meets or exceeds the specifications described in the applicable regulations. (Ex. 34, pp. 4.4-11, 4.4-12.)

Staff determined that the original routing chosen by Applicant for delivery of hazardous materials to the site posed a high potential of risk and, therefore, Staff proposed a more appropriate route from Interstate 5 to Interstate 710 with exit at Bandini to Soto Road to the site. The land use along this route is industrial and there are no unmarked railroad crossings. (Ex. 34, p. 4.4-12.) Condition **TRANS-8** in the **Traffic and Transportation** section of this Decision ensures that appropriate delivery routes will be used.

b. Natural Gas

The project requires large amounts of natural gas, which creates a risk of both fire and explosion. (Ex. 34, p. 4.4-7.) This risk will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices. (*Ibid*.) The National Fire Protection Association (NFPA) Code 85A requires: 1) the use of double block and bleed valves for fast shut-off; 2) automated combustion controls; and 3) burner management systems. These measures significantly reduce the likelihood of an explosion. Additionally, start-up procedures will require air purging of gas turbines and combustion equipment to prevent build-up of an explosive mixture. (*Ibid.*)

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[30] *See* the Federal Hazardous Materials Transportation Act at 49 USC § 5101 et seq, the U.S. Department of Transportation Regulations at 49 CFR Subpart H, § 172-700, and California DMV Regulations on Hazardous Cargo.

Natural gas will not be stored on site; rather, it will be continuously delivered via the project's gas pipeline facilities (described in the **Facility Design** section of this Decision.) Since the facility will require the installation of a new gas pipeline off-site, impacts from this pipeline were evaluated. (Ex. 34, p. 4.4-8.)

The design of the gas pipeline is governed by laws and regulations requiring use of high quality arc welding techniques by certified welders and inspection of welds. The Applicant will construct a 1,300 feet (1,100 feet off-site and 200 feet on-site) 10-inch diameter pipeline connecting to the existing pipeline owned by the City of Vernon. If a release of gas occurs as a result of pipe, valve, or other mechanical failure or external forces, significant quantities of compressed natural gas could be released rapidly. Such a release can result in a significant fire and/or explosion hazard, which could cause loss of life and/or significant property damage in the vicinity of the pipeline route. However, the probability of such an event is extremely low if the pipeline is constructed according to current standards. According to Staff, existing regulatory requirements are sufficient to reduce the risk of accidental release from the pipeline to insignificant levels. (Ex. 34, p. 4.4-8.) Conditions of Certification **HAZ-6 & HAZ-7** ensure the integrity of the gas pipeline in the event of an earthquake and address the safety of the gas pipeline over time. (Ex. 34, p. 4.4-13.)

2. Site Security

The MGS will use hazardous materials that have been identified by the U.S. EPA as materials where special site security measures should be developed and implemented to ensure that unauthorized access is prevented. (Ex. 35, p. 4.4-1.) To ensure that this facility or a shipment of hazardous material is not the target of unauthorized access, security measures include perimeter fencing, guards, alarms, law enforcement contact in the event of security breach, and fire detection systems. Additional security measures include site personnel

background checks and strictly control of site access to vendors. (Ex. 35, p. 4.4-2.) General Condition of Certification on Construction and Operations Security Plan **COM-9** requires the preparation of a Vulnerability Assessment and the implementation of Site Security measures consistent with the above-referenced documents. (Ex. 35, p. 4.4-1.)

3. Closure

The requirements for handling hazardous materials remain in effect until such materials are removed from the site regardless of closure. In the event that the project owner abandons the facility in a manner that poses a risk to surrounding populations, emergency action will be coordinated by federal, state, and local agencies to ensure that any unacceptable risk to the public is eliminated. (Ex. 34, p. 4.4-15.)

FINDINGS AND CONCLUSIONS

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

1. The MGS will use hazardous materials during construction and operation, including the *acutely hazardous* aqueous ammonia, sulfuric acid, hydrochloric acid, and natural gas.

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

3. The Off-Site Consequences Analysis indicated that no significant offsite public health consequences would result from an accidental ammonia release during the delivery process.

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

5. The risk of fire and explosion from natural gas will be reduced to insignificant levels through adherence to applicable codes and the implementation of effective safety management practices.

6. Potential impacts from the other hazardous substances used on site are not considered significant since quantities will be limited and appropriate storage will be maintained in accordance with applicable law.

7. The project owner will submit an approved Safety Management Plan for handling aqueous ammonia, an approved Hazardous Materials Business Plan, and an approved Risk Management Plan prior to delivery of any hazardous materials to the site.

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

9. With implementation of the Conditions of Certification, below, the MGS will comply with all applicable laws, ordinances, regulations, and standards related to hazardous materials management as identified in the evidentiary record and in the pertinent portion of **Appendix A** of this Decision.

The Commission concludes therefore that the use of hazardous materials by the Malburg Generating Station will not result in any significant adverse public health and safety impacts.

CONDITIONS OF CERTIFICATION

HAZ-1 The project owner shall not use any hazardous materials not listed in Appendix C, below, or in greater quantities than those identified by chemical name in Appendix C, below, unless approved in advance by City of Vernon and the CPM.

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

HAZ-2 The project owner shall concurrently provide a Business Plan and a Risk Management Plan (RMP) to the Certified Unified Program Authority (CUPA) (City of Vernon Environmental Health Department) and the CPM for review at the

time the RMP is first submitted to the U.S. Environmental Protection Agency (EPA). The project owner shall reflect all recommendations of the CUPA and the CPM in the final documents. Copies of the final Business Plan and RMP, reflecting all comments, shall be provided to the CPM for approval.

Verification: At least 60 days prior to first receiving any hazardous material on the site, the project owner shall provide a copy of a final Business Plan to the CPM. At least 60 days prior to delivery of aqueous ammonia to the site, the project owner shall provide the final EPA-approved RMP, to the CUPA and the CPM for approval.

HAZ-3 The project owner shall develop and implement a Safety Management Plan for delivery of aqueous ammonia. The plan shall include procedures, protective equipment requirements, training and a checklist. It shall also include a section describing all measures to be implemented to prevent mixing of aqueous ammonia with incompatible hazardous materials.

Verification: At least 60 days prior to the initial delivery of aqueous ammonia to the facility, the project owner shall provide a safety management plan as described above to the CPM for review and approval.

HAZ-4 The aqueous ammonia storage facility shall be designed to either the ASME Pressure Vessel Code and ANSI K61.6, or to API 620. In either case, it shall be surrounded by a secondary containment basin capable of holding 125% of the storage volume or the volume of the tank plus the volume associated with 24 hours of rain assuming the 25-year storm. The final design drawings and specifications for the ammonia storage tank and secondary containment basins shall be submitted to the CPM.

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

HAZ-5 The project owner shall ensure that no combustible or flammable material is stored within 50 feet of the sulfuric acid tank.

Verification: At least 60 days prior to initial receipt of sulfuric acid on-site, the Project Owner shall provide copies of the facility design drawings showing the location of the sulfuric acid storage tank and the location of any tanks, drums, or piping containing any combustible or flammable materials within 50 feet of the sulfuric acid storage facility to the CPM for review and approval.

HAZ-6 The project owner shall require that the gas pipeline undergo a complete design review and detailed inspection 30 days after initial startup and every 5 years thereafter.

Verification: At least 30 days prior to the initial flow of gas in the pipeline, the project owner shall provide outline of the plan to accomplish a full and comprehensive pipeline design review to the CPM for review and approval. The full and complete plan shall be amended, as appropriate, and submitted to the CPM for review and approval, not later than one year before the plan is implemented by the project owner.

HAZ-7 After any significant seismic event in the area where surface rupture occurs within one mile of the pipeline, the gas pipeline shall be inspected by the project owner.

Verification: At least 30 days prior to the initial flow of gas in the pipeline, the project owner shall provide a detailed plan to accomplish a full and comprehensive pipeline inspection in the event of an earthquake to the CPM for review and approval. This plan shall be reviewed and amended, as appropriate, and submitted to the CPM for review and approval, at least every five years.

HAZ-8 The project owner shall direct each and every vendor delivering aqueous ammonia to the site to use only tanker truck transport vehicles that meet or exceed the specifications of DOT Code MC-307.

Verification: At least 60 days prior to initial receipt of aqueous ammonia on site, the project owner shall submit copies of the notification letter to supply vendors indicating these transport vehicle specifications to the CPM for review and approval.

APPENDIX A

HAZARDOUS MATERIAL MANAGEMENT

BASIS FOR STAFF'S USE OF 75 PPM AMMONIA EXPOSURE CRITERIA

Staff uses a health-based airborne concentration of 75 PPM to evaluate the significance of impacts associated with potential accidental releases of ammonia. While this level is not consistent with the 200-ppm level used by EPA and Cal/EPA in evaluating such releases pursuant the Federal Risk Management Program and State Accidental Release Program, it is appropriate for use in staff's CEQA analysis. The Federal Risk Management Program and the State Accidental Release Program are administrative programs designed to address emergency planning and ensure that appropriate safety management practices and actions are implemented in response to accidental releases. However, the regulations implementing these programs do not provide clear authority to require design changes or other major changes to a proposed facility. The preface to the Emergency Response Planning Guidelines (ERPGs) states that "these values have been derived as planning and emergency response guidelines, **not** exposure guidelines, they do not contain the safety factors normally incorporated into exposure guidelines. Instead they are estimates, by the committee, of the thresholds above which there would be an unacceptable likelihood of observing the defined effects." It is staff's contention that these values apply to healthy adult individuals and are levels that should not be used to evaluate the acceptability of avoidable exposures for the entire population. While these guidelines are useful in decision making in the event that a release has already occurred (for example, prioritizing evacuations), they are not appropriate for and are not binding on discretionary decisions involving proposed facilities where many options for mitigation are feasible. CEQA requires permitting agencies making discretionary decisions to identify and mitigate potentially significant impacts through changes to the proposed project.

Staff has chosen to use the National Research Council's 30 minute Short Term Public Emergency Limit (STPEL) for ammonia to determine the potential for significant impact. This limit is designed to apply to accidental unanticipated releases and subsequent public exposure. Exposure at this level should not result in serious effects but would result in "strong odor, lacrimation, and irritation of the upper respiratory tract (nose and throat), but no incapacitation or prevention of self-rescue." It is staff's opinion that exposures to concentrations above these levels pose significant risk of adverse health impacts on sensitive members of the general public. It is also staff's position that these exposure limits are the best available criteria to use in gauging the significance of public exposures associated with potential accidental releases. It is, further, staff's opinion that these limits constitute an appropriate balance between public protection and mitigation of unlikely events, and are useful in focusing mitigation efforts on those release scenarios that pose real potential for serious impacts on the public.

Table 1 provides a comparison of the intended use and limitations associated with each of the various criteria that staff considered in arriving at the decision to use the 75-ppm STPEL. Appendix B provides a summary of adverse effects, which might be expected to occur at various airborne concentrations of ammonia.

HAZARDOUS MATERIAL MANAGEMENT
APPENDIX A TABLE 1

Acute Ammonia Exposure Guidelines

Guideline	Responsible Authority	Applicable Exposed Group	Allowable Exposure Level	Allowable* Duration of Exposures	Potential Toxicity at Guideline Level/Intended Purpose of Guideline
IDLH[2]	NIOSH	Workplace standard used to identify appropriate respiratory protection.	300 ppm	30 min.	Exposure above this level requires the use of "highly reliable" respiratory protection and poses the risk of death, serious irreversible injury or impairment of the ability to escape.
IDLH/10[1]	EPA, NIOSH	Work place standard adjusted for general population factor of 10 for variation in sensitivity	30 ppm	30 min.	Protects nearly all segments of general population from irreversible effects
STEL[2]	NIOSH	Adult healthy male workers	35 ppm	15 min. 4 times per 8 hr day	No toxicity, including avoidance of irritation
EEGL[3]	NRC	Adult healthy workers, military personnel	100 ppm	Generally less than 60 min.	Significant irritation but no impact on personnel in performance of emergency work; no irreversible health effects in healthy adults. Emergency conditions one time exposure
STPEL[4]	NRC	Most members of general population	50 ppm 75 ppm 100 ppm	60 min. 30 min. 10 min.	Significant irritation but protects nearly all segments of general population from irreversible acute or late effects. One time accidental exposure
TWA[2]	NIOSH	Adult healthy male workers	25 ppm	8 hr.	No toxicity or irritation on continuous exposure for repeated 8 hr. Work shifts
ERPG-2[5]	AIHA	Applicable only to emergency response planning for the general population (evacuation) (not intended as exposure criteria) (see preface attached)	200 ppm	60 min.	Exposures above this level entail** unacceptable risk of irreversible effects in healthy adult members of the general population (no safety margin)

1) (EPA 1987) 2) (NIOSH 1994) 3) (NRC 1985) 4) (NRC 1972) 5) (AIHA 1989)
* The (NRC 1979), (WHO 1986), and (Henderson and Haggard 1943) all conclude that available data confirm the direct relationship to increases in effect with both increased exposure and increased exposure duration.
** The (NRC 1979) describes a study involving young animals, which suggests greater sensitivity to acute exposure in young animals. The (WHO 1986) warns that the young, elderly, asthmatics, those with bronchitis and those that exercise should also be considered at increased risk based on their demonstrated greater susceptibility to other non-specific irritants.

References for Appendix A, Table 1

AIHA. 1989. American Industrial Hygienists Association, Emergency Response Planning Guideline, Ammonia, (and Preface) AIHA, Akron, OH.

EPA. 1987. U.S. Environmental Protection Agency, Technical Guidance for Hazards Analysis, EPA, Washington, D.C.

NRC. 1985. National Research Council, Criteria and Methods for Preparing Emergency Exposure Guidance Levels (EEGL), short-term Public Emergency Guidance Level (SPEGL), and Continuous Exposure Guidance Level (CEGL) Documents, NRC, Washington, D.C.

NRC. 1972. Guideline for short-term Exposure of The Public To Air Pollutants. IV. Guide for Ammonia, NRC, Washington, D.C.

NIOSH. 1994. National Institute of Occupational Safety and Health, Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, Washington D.C., Publication numbers 94-116.

WHO. 1986. World health Organization, Environmental Health Criteria 54, Ammonia, WHO, Geneva, Switzerland.

Abbreviations for Appendix A, Table 1

ACGIH, American Conference of Governmental and Industrial Hygienists
AIHA, American Industrial Hygienists Association
EEGL, Emergency Exposure Guidance Level
EPA, Environmental Protection Agency
ERPG, Emergency Response Planning Guidelines
IDLH, Immediately Dangerous to Life and Health Level
NIOSH, National Institute of Occupational Safety and Health
NRC, National Research Council
STEL, Short Term Exposure Limit
STPEL, Short Term Public Emergency Limit
TLV, Threshold Limit Value
WHO, World Health Organization

APPENDIX B

SUMMARY OF ADVERSE HEALTH EFFECTS OF AMMONIA

638 PPM

WITHIN SECONDS:

- Significant adverse health effects;
- Might interfere with capability to self rescue;
- Reversible effects such as severe eye, nose and throat irritation.

AFTER 30 MINUTES:

- Persistent nose and throat irritation even after exposure stopped;
- Irreversible or long-lasting effects possible: lung injury;
- Sensitive people such as the elderly, infants, and those with breathing problems (asthma) experience difficulty in breathing;
- Asthmatics will experience a worsening of their condition and a decrease in breathing ability, which might impair their ability to move out of area.

266 PPM

WITHIN SECONDS:

- Adverse health effects;
- Very strong odor of ammonia;
- Reversible moderate eye, nose and throat irritation.

AFTER 30 MINUTES:

- Some decrease in breathing ability but doubtful that any effect would persist after exposure stopped;
- Sensitive persons: experience difficulty in breathing;
- Asthmatics: may have a worsening condition and decreased breathing ability, which might impair their ability to move out of the area.

64 PPM

WITHIN SECONDS:

Most people would notice a strong odor;

Tearing of the eyes would occur;

Odor would be very noticeable and uncomfortable.

Sensitive people could experience more irritation but it would be unlikely that breathing would be impaired to the point of interfering with capability of self rescue

Mild eye, nose, or throat irritation

Eye, ear, & throat irritation in sensitive people

Asthmatics might have breathing difficulties but would not impair capability of self rescue

22 or 27 PPM

WITHIN SECONDS:

Most people would notice an odor;

No tearing of the eyes would occur;

Odor might be uncomfortable for some;

Sensitive people may experience some irritation but ability to leave area would not be impaired;

Slight irritation after 10 minutes in some people.

4.0, 2.2, or 1.6 PPM

No adverse effects would be expected to occur; doubtful that anyone would notice any ammonia (odor threshold 5 - 20 PPM)

Some people might experience irritation after 1 hr.

APPENDIX C

Table 8.12-2
Anticipated Hazardous Materials Use at the Malburg Generating Station

Material	Label on Figure 8.12-2	CAS No. or Chemical Makeup)	Location/ Application	Hazardous Characteristics [31]	Maximum Quantity[32] On Site	Regulatory Thresholds (lb.)			
						CalARP	Federal RQ[33]	Federa l TPQ[34]	Federal TQ[35]
AUXILIARY COOLING WATER TREATMENT CHEMICALS									
Nalco 8322	Note 1	Molybdate, phosphate, TT, and polymer	Deposit and scale control	MSDS has been requested.	350-gallons	-	-	-	-
COOLING TOWER WATER TREATMENT									
Nalco H-510	Note 2	10377-60-3 (1.75wt%), 26172-55-4 (1.15wt%), 2682-20-4 (0.35wt%), 3251-23-8 (0.15wt%)	Biocide	*Health:* acute, chronic - dermatitis *Physical:* none.	55-gallons	-	-	100	-
Chlorine Bleach	Note 2	7681-52-9 1782-50-5	Infrequent addition will aid H-510 biocide	MSDS has been requested.	350-gallons	-	100	100	2,500
Nalco 232296	Note 2	Phosphate polymer blend	Deposit and scale control	MSDS has been requested.	350-gallons	-	-	-	-

[31] Hazard categories are defined by 40 CFR 370.2. Health hazards include acute (immediate) and chronic (delayed). Physical categories include fires, sudden release of pressure, and reactive.
[32] All quantities are approximate.
[33] RQ = Reportable Quantity
[34] TPQ = Threshold Planning Quantity
[35] TQ = Threshold Quantity

Table 8.12-2
Anticipated Hazardous Materials Use at the Malburg Generating Station

Material	Label on Figure 8.12-2	CAS No. or Chemical Makeup)	Location/ Application	Hazardous Characteristics [31]	Maximum Quantity[32] On Site	Regulatory Thresholds (lb.)			
						CalARP	Federal RQ[33]	Federa l TPQ[34]	Federal TQ[35]
COOLING TOWER WATER TREATMENT									
Nalco CL-361	Note 2	-	Penetrant to reduce oil & grease, as needed	MSDS has been requested.	350-gallons	-	-	-	-
Sulfuric Acid 29.5 wt%	Note 2	7664-93-9	Station and Gas Turbine Batteries	*Health:* acute, chronic *Physical:* reactive	350-gallons	1,000	1,000	1,000	-
CTG and HRSG WATER TREATMENT									
Nalco 356 Amine	Note 1	Cyclo-hexamine, morphaline blend	Feed Water pH control and passivator	MSDS has been requested.	350 gallons	-	-	-	-
Nalco Eliminox	Note 1	none	Oxygen scavenger, also promotes passivation.	MSDS has been requested.	350-gallons	-	5,000	-	-
Nalco BT-3000	Note 2	Sodium phosphate 7601-54-9	Phosphate control to minimize scale and control pH	MSDS has been requested.	350-gallons	-	-	-	-
Hydrochloric Acid[36] [37]	Stored off site	7664-39-3	HRSG Chemical Cleaning	*Health:* acute, chronic *Physical:* none	350-gallons	-	5,000	-	15,000

[36] Hydrochloric Acid assumed to be aqueous with a concentration greater than 27%.

[37] Gas turbine water wash cleaning chemicals are not stored on site, cleaning is by a contractor.

Table 8.12-2
Anticipated Hazardous Materials Use at the Malburg Generating Station

Material	Label on Figure 8.12-2	CAS No. or Chemical Makeup)	Location/ Application	Hazardous Characteristics[31]	Maximum Quantity[32] On Site	Regulatory Thresholds (lb.)			
						CalARP	Federal RQ[33]	Federa l TPQ[34]	Federal TQ[35]
Ammonium Bifluoride	Stored off site	1341-49-7	HRSG Chemical Cleaning	*Health:* acute, chronic *Physical:* none	350-gallons	-	100	-	-
Citric Acid	Stored off site	77-92-9	HRSG Chemical Cleaning	*Health:* acute, chronic *Physical:* none	350-gallons	-	-	-	-
EDTA Chelant	Stored off site	62-33-99	HRSG Chemical Cleaning	*Health:* acute *Physical:* none	350-gallons	-	100	-	-
Sodium Nitrate	Stored off site	7632-00-0	HRSG Chemical Cleaning	*Health:* acute *Physical:* none	350-gallons	-	-	100	-
SCR									
Aqueous Ammonia 19 wt%	Note 3	7664-41-7	NO_X Emissions Control	*Health:* acute, chronic *Physical:* fire, pressure	8,400 US gal	500	100	500	-
WATER TREATMENT PLANT CHEMICALS									
NALCO Sodium Hydroxide	Note 4	1310-73-2	Laboratory Reagent	*Health:* acute, *Physical:* none	350-gallons	-	-	1000	-
Nalco 8322	Note 4	Molybdate, phosphate, TT, and polymer	Deposit and scale control	MSDS has been requested.	350-gallons	-	-	-	-
Sodium hypochlorite	Note 4	7681-52-9	Residual chlorine	*Health:* acute, *Physical:* reactive	350-gallons	-	-	100	-
Sodium bisulfate	Note 4	7631-90-5	pH adjustment	None	350-gallons	-	-	5,000	-

Table 8.12-2
Anticipated Hazardous Materials Use at the Malburg Generating Station

Material	Label on Figure 8.12-2	CAS No. or Chemical Makeup)	Location/ Application	Hazardous Characteristics [31]	Maximum Quantity[32] On Site	Regulatory Thresholds (lb.)			
						CalARP	Federal RQ[33]	Federa l TPQ[34]	Federal TQ[35]
OTHER / PLANT MAINTENANCE									
Carbon Dioxide liquid	Note 5	124-38-9	Fire Suppression	*Health:* acute, chronic *Physical:* pressure	600 lb.	-	-	-	-
Sulfuric Acid 29.5 wt%	Note 2	7664-93-9	Station and Gas Turbine Batteries	*Health:* acute, chronic *Physical:* reactive	350-gallons	1,000	1,000	1,000	-
Mineral Insulating Oil	Note 6	None	Electrical Transformers	*Health:* acute, chronic *Physical:* fire	20,000 US gal	-	-	-	-
Lubricating Oil	Note 6	None	Mechanical Equipment	*Health:* acute, chronic *Physical:* fire	12,400 US gal	-	-	-	-
Diesel Fuel Oil	Note 6	68476-34-6	Diesel Firewater Pump Motor	*Health:* acute, chronic *Physical:* fire	MSDS has been requested.	-	-	-	-
Acetylene	Note 7	74-86-2	Metal cutting & welding	*Health:* acute, chronic *Physical:* fire	< 200 ft^3	-	-	-	-
Argon	Note 7	7440-37-1	Metal cutting & welding	*Health:* none *Physical:* reactive, sudden release	< 200 ft^3	-	-	-	-
Natural Gas	-	74-82-8 (as methane)	Gas Turbine Generator and Duct Burner Fuel	*Health:* Acute *Physical:* fire, pressure	Off-site via pipeline	-	-	-	10,000

E. WASTE MANAGEMENT

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

Federal and state laws regulate the management of hazardous waste. Hazardous waste generators must obtain EPA identification numbers, and only use permitted treatment, storage, and disposal facilities. Registered hazardous waste transporters must handle the transfer of hazardous waste to disposal facilities. (Ex. 34, p. 4.13-9.)

Summary and Discussion of the Evidence

1. Site Description

The MGS will be constructed in an area of the Station A site that formerly contained three above ground fuel oil storage tanks. (Ex. 1, p. 8.13-2.) The City of Vernon Environmental Health department completed a records search and site inspection of the entire Station A site, resulting in the identification of four potential waste management issues. (Ex.1, Appendix O.) Although three of the issues are associated exclusively with Station A operations, the fourth issue concerning the potential for diesel fuel contaminated soil is associated with the location of the MGS. (Ex. 1, p. 8.13-2.)

Geotechnical and Phase II environmental assessments of the Station A site were performed during the year 2001, including seven soil borings, four of which were within the MGS location. (Ex.1, Appendix C.) None of the seven borings showed any detectable concentrations of volatile organic compounds (VOCs), and six of the seven borings revealed no detectable concentrations of total petroleum hydrocarbons (TPH). One boring, located on the MGS site, revealed a detectable concentration of TPH of 67 mg/Kg (in the carbon range C_{22} to C_{32}), at

a depth of six feet below the soil surface. However, this concentration is below any risk-based cleanup level. (Ex.1, p. 8.13-2; Ex. 34, pp. 4.13-3, 4.13-4.)

Remediation was performed July 2001 following a sub-surface diesel fuel release on the Station A site. Consequently, some potential exists for encountering diesel fuel contaminated soil during construction, excavation, and grading activities. Condition of Certification **WASTE-2** outlines the procedures to be employed in the event that contaminated soil is encountered during construction-related activities. (Ex. 34, p. 4.13-9.)

2. Construction

a. Non-hazardous Wastes

During construction, the primary waste stream will be solid, non-hazardous materials such as excess scrap wood, paper, concrete, empty containers, scrap insulation, and waste oil filters. These wastes will be recycled, where practical, with the remainder deposited at a Class III landfill. Applicant indicated that approximately 2,400 pounds of waste materials will be generated monthly during construction. (Ex. 1, § 8.13.2.1.1.)

Waste metal generated during construction includes scrap from welding/cutting, construction materials, empty non-hazardous containers and electrical wiring. Metals that cannot be salvaged or recycled will be removed for disposal at a Class III landfill. (Ex. 1, p. 8.13-4.) Applicant estimates that 1,000 pounds of metal wastes will be generated per month for a total generation of eight tons of waste metal over the 16-month construction period. *(Ibid.)* Applicant's Table 8.13-1, replicated below, lists the estimated amounts of the construction waste stream and management methods.

b. Hazardous Wastes

The majority of the hazardous waste generated during construction will consist of liquid wastes, such as waste oil from routine equipment maintenance, flushing

and cleaning fluid, waste solvents, and waste paints. (Ex. 1, p. 8.13-5.) Solid waste in the form of used batteries, spent solvent, welding materials, and chemical cleaning solutions will also be generated. *(Ibid.)* Most of the liquid hazardous wastes will be recycled with the remainder removed on a regular basis by a certified waste handling contractor for disposal at a licensed Class I hazardous waste treatment or disposal facility. (Ex. 1, § 8.13.2.1.1.) Applicant estimates that up to 15,000 gallons of flushing and cleaning and passivating liquid waste will be generated during the construction period. Additionally, about 50 gallons per month of waste oil, 25 gallons per month of waste paint and waste solvents, and approximately 20 pounds per month of spent welding materials will be generated. (Ex. 1, p. 8.13-5.)

3. Operation

a. Non-hazardous Waste

Non-hazardous waste generated during project operation are expected to be similar to those generated by the existing facility, including scrap metal, plastic, insulation material, paper, glass, office wastes, empty containers, broken or used parts, used packaging, and used filters. Nonhazardous solid waste will be recycled with the remainder deposited at a Class III landfill. (Ex. 1, § 8.13.2.1.2.) The low volume of these wastes will result in a less than significant impact to available landfills. (Ex. 34, p. 4.13-5.) Non-hazardous liquid wastes will be generated during facility operation and are discussed in the **Water Resources** section of this Decision. *See* Applicant's Table 8.13-4, replicated below, which shows the operating waste streams and management methods.

b. Hazardous Waste

Hazardous wastes include waste oil, spent hydraulic fluid, oily rags and absorbents, spent cleaning solvents, Selective Catalytic Reduction (SCR) and oxidation catalysts, and acidic and alkaline chemical cleaning wastes, which if not recycled will be removed and transported by a certified hauler to a Class I

landfill. (Ex. 1, § 8.13.2.1.2.) Periodic turbine cleaning will generate contaminated wash water that will be analyzed for appropriate disposal. HRSG cleaning solutions will be recycled by the licensed contractor conducting the cleaning. (*Ibid.*) *See* Applicant's Table 8.13-4, replicated below. The amount of hazardous wastes requiring off-site disposal will be minimal and, therefore, any impact to permitted Treatment Storage and Disposal (TSD) facilities will be insignificant. (Ex. 34, p. 4.13-6.)

4. Potential Impacts on Waste Disposal Facilities

Applicant's Table 8.13-2, replicated below, shows local Class III landfills and identifies soil treatment and recycling facilities that will accept non-hazardous soils. Most of the non-hazardous waste produced during project construction and operation will be recyclable. According to Applicant, the amount of non-recyclable project wastes will be insignificant relative to current disposal volumes at the eight local Class III landfills. (Ex. 1, § 8.13.2.2.) Staff's analysis concurred that disposal of project-related wastes will account for less than one percent increase in disposal volume to these facilities and, thus, will not have any significant direct or cumulative impacts on the capacities of local Class III landfill facilities. (Ex. 34, p. 4.13-6.)

Three Class I landfills in California that are permitted to accept hazardous wastes include Kettleman Hills in King's County, Buttonwillow in Kern County, and Laidlaw in Imperial County. In total, there is an excess of 21.9 million cubic yards of remaining hazardous waste disposal capacity at these landfills, with remaining operating lifetimes up to the year 2078. (Ex. 34, p. 4.13-6.) Staff concluded that the amount of project-related hazardous waste is less than one percent of existing capacity and will not significantly impact the capacity or remaining life of any of California's Class I landfills. (*Ibid*.)

Table 8.13-1
Summary of Anticipated Construction Waste Streams and Management Methods

Waste Stream	Anticipated Waste Stream Classifica-tion	Estimated Quantity	Estimated Frequency of Genera-tion	Waste Management Method	
				Onsite	Offsite
Scrap wood, steel, glass, plastic, paper, calcium silicate insulation, mineral wool insulation	Non-hazardous solids / normal refuse	2,400 lb.	Monthly	Maintain daily housekeeping, and stockpile or containerize if mobile (i.e., due to wind)	Recycle and/or Class III/II landfill disposal
Scrap metals	Non-hazardous	1,000 lb.	Monthly	Maintain daily housekeeping, and stockpile or containerize	Recycle or disposal at Class III landfill
Empty hazardous material containers	Hazardous and non-hazardous solids	100 containers (< 5-gallon containers, 55-gallon drums or totes)	Intermittent	Store empties under cover in designated are for less than 90 days or reuse container	Containers < 5-gallons, dispose as normal refuse. Containers > 5-gallons, return to vendors, recycle, or recondition
Spent welding materials	Hazardous solid	20 lb.	Monthly	Accumulate as Satellite Storage[38] and store for less than 90 days after 5-gallon DOT containers are full	Dispose at Class I landfill
Waste oil filters	Non-hazardous waste solids	100 lb. Dispensed in a 55-gallon drum	Monthly	Accumulate as Satellite Storage and store for less than 90 days after DOT drums are full	Recycle at permitted TSDF
Used and waste lube oil during CT and ST lube oil flushes	Hazardous liquids	55 gallon drums	200 drums over life of construction	Accumulate as Satellite Storage and store for less than 90 days after DOT drums are full	Recycle at permitted TSDF
Oily rags, oil absorbent excluding lube oil flushes	Hazardous solids	Two 55-gallon drums	Monthly	Accumulate as Satellite Storage and store for less than 90 days after DOT drums are full	Recycle or dispose at permitted TSDF
Spent lead acid batteries	Hazardous waste	10 Batteries	Yearly	Store up to 10 batteries for less than 1 year	Recycle off-site
Spent alkaline batteries	Universal waste solids[39]	50 Batteries	Monthly	Store in 5-gallon DOT container in designated area for up to 1 year	Recycle or dispose off-site at Universal Waste Destination Facility(s)
Solvents, paint, adhesives	Hazardous liquids	180 lb. (or approx. 25-gal)	Monthly	Accumulate as Satellite Storage and store for less than 90 days after DOT drums are full	Recycle at permitted TSDF.

[38] Reference 22 CCR 66262.34(e). Allows generator to accumulate hazardous waste in 55-gallon DOT drums for up to one year from the initial date of accumulation and at the point of generation using an "accumulation" label. Once full, the drums must be managed off-site within 90 days.

[39] As designated under 22 CCR 66273. The City of Vernon is classified as a Small Quantity Handler of Universal waste (accumulates less than 11,000 lb. of Universal Waste at any one time).

Table 8.13-1
Summary of Anticipated Construction Waste Streams and Management Methods

Waste Stream	Anticipated Waste Stream Classifica-tion	Estimated Quantity	Estimated Frequency of Genera-tion	Waste Management Method	
				Onsite	Offsite
ST and pre-boiler piping cleaning waste, Chelan	Hazardous or non-hazardous liquids	200 gallons	Once before initial startup	Sample. Store hazardous portion in DOT approved container for less than 90 days	Dispose at permitted TSDF
Waste oil	Non-RCRA Hazardous liquids	50 gallons	Monthly	Store for less than 90 days in DOT containers	Recycle at permitted TSDF.
Sanitary waste from potable chemical toilets and construction office holding tanks	Non-hazardous liquids	200 gallons	Weekly	Periodically pumped to tanker truck by license contractors	Removed from site by sanitary toilet contractor
Storm water from construction area	Non-hazardous liquids	55,000-gallons	Average discharge per rain event[40]	Implement Best Management Practices (BMPs) established by SWPPP[41]	Discharge to the storm drain
Fluorescent, mercury vapor lamps	Universal waste solids	500-lb.	Yearly	Store in designated area for up to 1 year	Recycle or dispose off-site at approved Universal Waste Destination Facilities
Pasivating fluid waste, pipe cleaning and flushing	Non-hazardous or hazardous liquid	2,400-gallons	Over life of construction	Sample and characterize. Store on-site in covered container(s).	If not associated with cleaning activity and characterized clean, discharge to storm drain. If otherwise, manage appropriately off-site
Hydro test water	Hazardous or non-hazardous liquids	500-gallons per process unit	Once before initial startup for each process unit	Sample and characterize. Store on-site in covered container(s).	If not associated with cleaning activity and characterized clean, discharge to storm drain. If otherwise, manage appropriately off-site

[40] The Los Angeles County area receives an average rainfall of approximately 15-inches per year over an estimated 20 rainfall events. On this basis the average rainfall event is approximately 0.75-inches over a construction site area of 3.4 acres (148,000-ft^2) or an estimated volume of 69,000-gallons per rainfall event. With an estimated 20% lost to infiltration at the site, the stormwater runoff is estimated to be 55,000-gallons / rainfall event.

[41] The SWPPP (Storm Water Pollution Prevention Plan) is a requirement under the NPDES General Permit for Storm Water Associated with Construction Activities (General Permit) of the State Water Resources Control Board (SWRCB) and enforced by the Regional Water Quality Control Board, Los Angeles Region (RWQCB)

Table 8.13-2
Solid Waste Disposal Facilities

Waste Disposal Site	Title 23 Class	Permitted Capacity	Current Operating Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Puente Hills Landfill 2800 Workman Mill Road Whittier, CA	Class III	106 million cubic yards (CY)	13,200 cubic yards/day (CYD)	20 million CY	2003-2004	No
Burbank Landfill Site # 3 1600 Lockheed View Drive Burbank, CA	Class III	8 million CY	240 CYD	5 million CY	2053	No
Chiquita Canyon Sanitary Landfill 29201 Henry Mayo Drive, Valencia, Los Angeles County, CA	Class III	64 million CY	6,000 CYD	26 million CY	2019	No
Scholl Canyon Sanitary Landfill 3001 Scholl Canyon Road, Glendale, CA	Class III	69 Million CY	3,400 CYD	18 million CY	2014	No
Sunshine Canyon Sanitary Landfill - County Extension 14747 San Fernando Road, Los Angeles, CA	Class III	24 million CY	6,600 CYD	16 million CY	2004	No
Calabasas Sanitary Landfill 5300 Lost Hills Road, Calabasas, CA	Class III	70 million CY	3,500 CYD	28 million CY	2008	No
Waste Disposal Site	**Title 23 Class**	**Permitted Capacity**	**Current Operating Capacity**	**Remaining Capacity**	**Estimated Closure Date**	**Enforcement Action Taken?**
Savage Canyon Landfill 13919 East Penn Street San Dimas, CA	Class III	32 million CY	350 CYD	5 million CY	2025	No
Bradley Landfill West and West Extension 9227 Tujunga Avenue Los Angeles, CA	Class III	15 million CY	10,000 CYD	5 million CY	Not Available	No
Reference: California Integrated Waste Management Board (2001)						

Table 8.13-3
Class I Waste Disposal Facilities

Waste Disposal Site	Title 23 Class	Permitted Capacity	Current Operating Capacity	Remaining Capacity	Estimated Closure Date	Enforcement Action Taken?
Waste Management Kettleman Hills Landfill 36251 Old Skyline Road Kettleman City, CA 93239	Class I	10.7 million CYY	Current Operating Capacity Not Available	8 million CY	2037-2038	No
Laidlaw Buttonwillow Landfill Kern County, CA	Class I	13 million CYY	130,000-150,000 CYY	11 million cy	2068-2078	No
Laidlaw Westmoreland Landfill Imperial County, CA	Class I	4 million CYY	110,000 CYY	2.9 million cy	2021	No
Reference: California Integrated Waste Management Board (2001)						

Table 8.13-4
Summary of Anticipated Operating Waste Streams and Management Methods

Waste Stream	Waste Stream Classification	Estimated Amount	Estimated Frequency	Waste Management Method	
				On-Site	Off-Site
Scrap metal, plastic, paper, glass	Non-hazardous solid waste	500-lb.	Monthly	Stockpile or storage in covered area(s)	Recycle where feasible and practical, and Class III disposal
Empty containers	Non-hazardous solid waste	Less than 10 containers	Monthly	Temporary storage in designated, covered area	Containers < 5-gallons, dispose as normal refuse. Containers > 5-gallons, return to vendors, recycle, or recondition
Used equipment parts	Scrap or non-hazardous solid waste	Less than 200 lb.	Monthly	Temporary storage in designated, covered area	Return to vendors or recycle as metal scrap
Spent hydraulic fluid and oils	Non-RCRA Hazardous liquids	Less than 720 lb. (110 gallons)	Month	Store for less than 90 days	Recycled
Spent lead acid batteries	Hazardous waste	Less than 10 batteries	Yearly	Store less than 1 ton for no more than 1 year	Recycled (10 batteries or less does not require licensed transport with manifest to recycle facilities)
Spent alkaline batteries	Universal Waste solids	50 batteries	Monthly	Store in 5-gallon DOT container in designated area for up to 1 year	Recycle or dispose off-site at Universal Waste Destination Facility(s)
SCR and CO Spent catalyst (possible heavy metals)	Hazardous waste solids	45,000 lb.	Every 3 to 5 years	Removed to truck by licensed contractors	Regenerated and recycled, respectively
Waste oil from oil-water separator	Non-RCRA Hazardous waste liquid	1,500-gallons	Annually	Dispense to 55-gallon drums or 350-gallon totes. Store for less than 90 days	Recycled
Oily rags, oil absorbent (excludes lube oil flushes)	Non-Hazardous or non-RCRA Hazardous solids	One 55 gallon container	Monthly	Accumulate as Satellite Storage and store for less than 90 days after DOT drums are full	Recycle or dispose at permitted TSDF.
CTG used air filters	Non-hazardous solids	100 lb.	Monthly	Store for less than 90 days	Recycle or dispose at permitted TSDF.
CTG water wash	Hazardous or non- hazardous liquids	120 US gallons	6 months	Temporary storage in holding tank, and sample for metals and pH. Adjust pH (if necessary), process through oil-water separator or prepare for off-site management.	Discharge to sanitary sewer if below industrial waste discharge limits. Otherwise manage for appropriate disposal or recycle.
Spent Solvents	Hazardous liquids	90-gallons (~600 lb.)	3 months	Process storage for 90 day periods	Recycle
Fluorescent, mercury vapor lamps	Universal waste solids	500-lb.	Yearly	Store in designated area for up to 1 year	Recycle or dispose off-site at approved Universal Waste Destination Facilities
Sanitary wastewater	Non-hazardous liquids	2,000-gallons	Daily	Sewer collection system	Discharge to sanitary sewer (LACSD)
Industrial wastewater	Non-hazardous liquids	323,000-gallons	Daily / Continuous (224 gpm average)	Industrial wastewater sewer collection system, process through oil-water separator, and flow monitoring system	Discharge to sanitary sewer (LACSD) at industrial wastewater connection
Storm water	Non-hazardous liquids	79,000-gallons	Average discharge per rain event[42]	SWPPP under General NPDES Stormwater Permit for Industrial Facilities	Discharge storm drain and detained volume equal to or less than 28,000-gallons will be discharged to storm drain or sanitary sewer[5]

[42] As stated previously, the average rainfall event is approximately 0.75-inches over a construction site area of 5.9 acres (257,000-ft^2) or an estimated volume of 120,000-gallons per rainfall event. Of this and for average conditions, it is estimated that 41,000-gallons will be lost to infiltration at the site, approximately 28,000-gallons will be detained, and stormwater runoff at the time of the rainfall is estimated to be approximately 51,000-gallons / rainfall event. The detained quantity will be either discharged to the storm drain or discharged to the sanitary sewer 24-hours after cessation of a rainfall event.

FINDINGS AND CONCLUSIONS

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

1. The project will generate hazardous and non-hazardous wastes during construction and operation of the MGS.

2. Applicant's Geotechnical and Phase II environmental assessments of the site found contaminated soils and, although remediation was performed, some potential exists for encountering diesel fuel contaminated soil during construction excavation and grading activities.

3. The project will recycle hazardous and non-hazardous wastes to the extent possible and in compliance with applicable law.

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

5. Non-hazardous wastes that cannot be recycled will be deposited at Class III landfills in the local area.

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

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

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

CONDITIONS OF CERTIFICATION

WASTE-1 The project owner shall provide the resume of a Registered Professional Engineer or Geologist, who shall be available for consultation during soil excavation and grading activities, to the CPM for review and approval. The resume shall show experience in remedial investigation and feasibility studies.

The Registered Professional Engineer or Geologist shall be given full authority to oversee any earth moving activities that have the potential to disturb contaminated soil.

Verification: At least 30 days prior to the start of site mobilization, the project owner shall submit the resume to the CPM.

WASTE-2 If potentially contaminated soil is unearthed during excavation at either the proposed site or linear facilities as evidenced by discoloration, odor, detection by handheld instruments, or other signs, the Registered Professional Engineer or Geologist shall inspect the site, determine the need for sampling to confirm the nature and extent of contamination, and file a written report to the project owner and CPM stating the recommended course of action.

Depending on the nature and extent of contamination, the Registered Professional Engineer or Geologist shall have the authority to temporarily suspend construction activity at that location for the protection of workers or the public. If, in the opinion of the Registered Professional Engineer or Geologist, significant remediation may be required, the project owner shall contact representatives of the Los Angeles Regional Water Quality Control Board, the City of Vernon Environmental Health Department, the City of Vernon Fire Department, and the Glendale Regional Office of the California Department of Toxic Substances Control for guidance and possible oversight.

Verification: The project owner shall submit any reports filed by the Registered Professional Engineer or Geologist to the CPM within 5 days of their receipt. The project owner shall notify the CPM within 24 hours of any orders issued to halt construction.

WASTE-3 Upon becoming aware of any impending waste management-related enforcement action by any local, state, or federal authority, the project owner shall notify the CPM of any such action taken or proposed to be taken against the project itself, or against any waste hauler or disposal facility or treatment operator with which the owner contracts.

Verification: The project owner shall notify the CPM in writing within 10 days of becoming aware of an impending enforcement action. The CPM shall notify the project owner of any changes that will be required in the manner in which project-related wastes are managed.

WASTE-4 The project owner shall prepare a Construction Waste Management Plan and an Operation Waste Management Plan for all wastes generated during construction and operation of the facility, respectively, and shall submit both plans to the City of Vernon

Environmental Health Department and the City of Vernon Fire Department for comment and to the CPM for review and approval. The plans shall contain, at a minimum, the following:

- A description of all waste streams, including projections of frequency, amounts generated and hazard classifications; and

- Methods of managing each waste, including treatment methods and companies contracted with for treatment services, waste testing methods to assure correct classification, methods of transportation, disposal requirements and sites, and recycling and waste minimization/reduction plans.

Verification: No less than 30 days prior to the start of site mobilization, the project owner shall submit the Construction Waste Management Plan to the City of Vernon Environmental Health Department, City of Vernon Fire Department, and CPM.

The operation waste management plan shall be submitted no less than thirty (30) days prior to the start of project operation. The project owner shall submit any required revisions within 20 days of notification by the CPM.

In the Annual Compliance Reports, the project owner shall document the actual waste management methods used during the year compared to the planned management methods.

VI. ENVIRONMENTAL ASSESSMENT

Under its statutory mandate, the Commission must evaluate a project's potential effect upon the environment. The specific topics under review include biological resources, soil and water resources, cultural resources, and geological and paleontological resources to determine whether project-related activities will result in adverse impacts to the natural and human environment.

A. BIOLOGICAL RESOURCES

The Commission must consider the potential impacts of project-related activities on biological resources, including state and federally listed species, species of special concern, wetlands, and other topics of critical biological interest such as unique habitats. The following review describes the biological resources of the project site and off-site laydown and parking areas, assesses the potential for adverse impacts on biological resources, and determines whether mitigation measures are necessary to ensure compliance with applicable laws, ordinances, regulations, and standards.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed project site is located within the Los Angeles Basin, which includes Los Angeles and Orange Counties and portions of San Bernardino County. The Santa Monica Mountains bound this area to the north, the Whittier Fault to the east, the San Joaquin Hills to the south, and the Pacific Ocean to the west. Historically, the Los Angeles River, which traverses the proposed project region, consisted of riparian and freshwater habitats. However, commercial, industrial and residential development altered the historic landscape and many of the natural communities in the project region. Consequently, wildlife populations have been greatly diminished. Plant and/or animal species listed under state

and/or federal Endangered Species Acts are not known to inhabit the project region. (Ex. 34, p. 4.2-3.)

The project site is located in an area zoned General Industrial within the city limits of Vernon in Los Angeles County. The project will be situated on 3.4 acres of the existing 5.9-acre Station A, a highly disturbed industrial site that includes an existing power plant and the Vernon Substation owned and operated by the City of Vernon. The area designated for the MGS previously contained distillate fuel tanks and berms. The tanks have been removed and the site has been backfilled and leveled. (Ex. 34, p. 4.2-3.)

Applicant conducted sensitive species surveys on June 14, 2001. No sensitive species, sensitive habitats, or natural communities were observed at the project site or within a one-mile radius of the Station A site. (Ex. 34, p. 4.2-3.) The only wildlife observed at the site and along the linear routes was limited to common bird species including the American crow and rock dove. Plant species were limited to horticultural and ruderal species, including carrotwood tree, crepe myrtle, gardenia, and silver dollar eucalyptus. For a list of observed species, refer to **Biological Resources Table 1** below.

Biological Resources Table 1:
Species Observed On the Site by City of Vernon

Wildlife	
Rock dove (pigeon)	*Columba livia*
American crow	*Corvus brachyrhynchos*
Plants	
Carrotwood tree	*Cupaniopsis anacardioides*
Crepe myrtle	*Lagerstroemia indica*
Gardenia	*Gardenia sp.*
Gazenia	*Gazenia linearis*
Liquidambar	*Liquidambar styraciflua*
Loquat	*Eriobotrya japonica*
Navel orange	*Citrus sinensis*
Olive	*Olea sp.*
Pink lady	*Raphiolepsis indica*
Schefflera	*Tupidanthus calyptratus*
Silver dollar eucalyptus	*Eucalyptus polyanthemos*

Source: Ex. 34, Table 1, p. 4.2-4.

The project site is completely surrounded by industrial uses and ground surfaces at the adjacent Station A are covered with asphalt and concrete. The site itself is devoid of vegetation due to the previous backfill and leveling activities connected with removing the underground distillate fuel tanks. (Ex. 34, p. 4.2-6; *see* the **Waste Management** section of this Decision.) The off-site parking and laydown areas are also located on previously disturbed sites with no known biological resources. The Applicant will construct the natural gas pipeline, the reclaimed water line, and the sewer line within existing street rights-of-way, traversing industrially zoned areas. Since construction and operation of the project will

occur in disturbed areas with no sensitive biological resources, the parties concurred that the project would not adversely impact biological resources. (Ex. 34, p. 4.2-11.)

Applicant and Staff also analyzed the potential for direct, indirect, and cumulative impacts on sensitive biological resources in surrounding areas that may support natural habitat but found no potential impacts due to the industrialized character of the area. (Ex. 34 p. 4.2-9.) Tall structures such as the HRSG exhaust stack could pose aviary collision hazards, although there is no evidence of previous collisions with existing on-site structures. Lack of wildlife habitat in the area largely precludes use of the area by migratory birds and there are no terrestrial wildlife migration corridors in the project area. (*Ibid*.)

No jurisdictional wetlands exist on or near the MGS site. Project wastewater will be discharged to the County Sanitation District of Los Angeles County sewer system and storm water runoff will be controlled by Best Management Practices as described in the **Soil and Water** section of this Decision. According to Staff, the project will not adversely impact surface waters in the project area. (Ex. 34, pp. 4.2-9 and 4.2-10.)

Existing levels of development and disturbance at the site and in the project area indicate that there will not be any adverse incremental impacts to biological resources associated with the MGS. (Ex. 34, p. 4.2-10.) Staff therefore concluded that no specific mitigation measures related to biological resources would be necessary. (*Id.* at p. 4.2-11.)

FINDINGS AND CONCLUSIONS

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

1. There are no sensitive species or suitable habitat for sensitive species at the project site, the construction parking and laydown areas, along the linear facility corridors, or in the surrounding industrial areas.

2. The MGS will not result in any potential direct, indirect, or cumulative impacts to biological resources.

3. The MGS will conform with all applicable laws, ordinances, regulations, and standards related to biological resources as identified in the pertinent portions of **Appendix A** of this Decision.

We, therefore, conclude that the project does not pose significant impacts to biological resources and will conform with all applicable laws, ordinances, regulations, and standards related to biological resources. No specific Conditions of Certification are required for this topic.

B. SOIL AND WATER RESOURCES

This section focuses on the soil and water resources associated with the project, specifically the project's potential to induce erosion and sedimentation, adversely affect water supplies, and degrade water quality. The analysis also considers the potential cumulative impacts to water quality in the project vicinity. To prevent or reduce any potential adverse impacts, several mitigation measures are included in the Conditions of Certification to ensure that the project will comply with all applicable federal, state, and local LORS.

SUMMARY AND DISCUSSION OF THE EVIDENCE

1. Erosion Prevention and Stormwater Management

About 70 percent of the 3.4-acre site will be impervious surfaces; the remainder will be covered with gravel. Approximately 1.75 additional acres off-site will be used for construction/laydown and parking. Those areas are mostly asphalt with a small portion graveled. (Ex. 34, 4.9-4.) In addition to native soils, the project site is underlain with approximately 20 feet of non-native fill material. Areas along the natural gas line and reclaimed water and sewer lines may also contain fill material. (Ex. 34, 4.9-5.) There are no agricultural resources located in the area. (Ex. 1, § 8.9.1.1.)

Excavation at the site during construction can induce soil erosion from ground moving activities involved in clearing, grading, and soil stockpiling. Ground disturbance makes soil particles vulnerable to detachment by wind, rainfall, and stormwater runoff until the surface is covered. Since the site has already been graded, minimal future soil disturbance is anticipated. (Ex. 1, § 8.9.5.)

There are no natural surface water drainage features on the MGS site. The surface water feature closest to the MGS site is the concrete-lined Los Angeles

River located approximately 0.75-mile northeast of the project site. According to the City of Vernon Department of Community Services & Water and the Federal Emergency Management Agency, the MGS site is not located in any flood zone. (Ex. 34, p. 4.9-4.)

The MGS site is relatively flat with a slope of one-percent draining from the center to the east and west. The elevation of the site is approximately 182 feet above mean sea level. The site will be graded such that ground surfaces will slope away from structures and roads into swales and catch basins. The first 0.75 inches of stormwater runoff will be retained within stormwater sedimentation/detention basins, with ultimate discharge to the existing storm conveyance system. (Ex. 34, p. 4.9-3.)

The federal Clean Water Act requires an NPDES permit for municipal storm sewer discharges to surface waters. The City of Vernon MGS is covered by the California General NPDES Stormwater Construction Activity Permit (No. CAS000002) administered by the Los Angeles Regional Water Quality Control Board (RWQCB.) (Ex. 19A, p. 1; Ex. 34, p. 4.9-1.) As part of the municipal stormwater program, Los Angeles RWQCB adopted the Standard Urban Stormwater Mitigation Plan (SUSMP) to address stormwater pollution caused by new development. The SUSMP requires new projects to incorporate Best Management Practices (BMPs) for source control, structural, and treatment control. (Ex. 34, p. 4.9-3.)

Drainage of the MGS site has been designed to meet the requirements of the SUSMP of Los Angeles County. As designed, the stormwater retention structures have adequate storage capacity to prevent any increase in surface run-off or peak flow from the site from a 50-year storm event. (Ex. 34, p. 4.9-12.)

Preventive measures to avoid pollution of stormwater include separation of stormwater into two classes. Stormwater from facility contact areas will be

collected and routed for treatment using an oil-water separator before being discharged to the sewer system or stored for off-site disposal. Stormwater from other non-contact areas will be discharged directly to the stormwater retention structures prior to release to the existing stormwater conveyance system. The implementation of the SUSMP measures will prevent an increase in the runoff from that of the existing condition. (Ex.1, pp. 4.9-8, 4.9-12.) According to Staff, no significant impacts are expected. *(Ibid.)*

Conditions of Certification **Soil & Water 2 and 3** require the project owner to comply with requirements of the NPDES permit and develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for Construction Activity. (Ex. 34, pp. 4.9-16, 4.9-17.) Applicant has submitted a Draft SWPPP. (*See* Ex. 19A.) The implementation of a SWPPP, BMPs and LORS compliance will mitigate potential impacts to insignificant levels.

2. Water Sources

The MGS will use a combination of sources for its water supply. The project will use about 1,400 acre-feet of water per year.[43] (Ex. 34, p. 4.9-5.) The primary source of cooling and process water for the MGS will be reclaimed water from the Central Basin Municipal Water District (CBMWD). Potable water will be supplied by the City of Vernon through an existing water supply line. Potable water will also be used as emergency back-up water for the plant when reclaimed water is temporarily unavailable. (Ex. 1, § 7; Ex. 34, p. 4.9-3.) The City of Vernon Department of Community Services and Water provided a “Will Serve” letter stating it can supply the project’s 17 gallons per minute (gpm) of potable water demand and a maximum nine-day per year emergency back-up supply at 1,000 gpm. (Ex. 1, pp. 8-14.4, 8.14-5, Appendix E, Ex. 34, p. 4.9-5.) CBMWD also provided a "Will-Serve" letter stating that it can supply the project’s

[43] This assumes an operating schedule of 8,500 hours per year. (Ex. 34, p. 4.9-5.)

request for 1000 gpm by the estimated start-up date in 2004. (Ex. 1, Appendix E; Ex. 11, pp. 11-33, 11-34.) The City of Vernon must complete improvements to the reclaimed water distribution system prior to project start-up, including installation of approximately nine pressure-reducing stations, at existing recycled water customer sites and installation of 10,000 feet of pipeline. *(Ibid.)* Design and construction of these improvements will be coordinated with CBMWD. (See Condition of Certification SOIL AND WATER – 7.)

The maximum allowable withdrawal from the Central Basin is 217,000 acre-feet per year. Approximately 200,386 acre-feet of water was extracted from the Central Basin between July 1, 1999, and June 30, 2000, for use as the municipal potable water supply. Thus, Staff concluded that there is ample water available as back-up to the reclaimed water system should there be a temporary interruption of the reclaimed water supply. (Ex. 34, p. 4.9-5.)

3. Water Supply Requirements

The MGS facility water requirements are shown below in **Soil and Water Table 1**. The table shows the average and maximum amount of water required for equipment in the plant and the total required for the plant in gallons per minute. These calculations are based on 100 percent load at ambient temperatures of 75° F, 50% relative humidity (RH) (normal flow rate) and 93°F, 40% RH (maximum flow rate.) To meet the 1,000 gpm maximum water requirements, CBMWD will supply available reclaimed water from an existing 18-inch main that will be extended about 1.8 miles (10,000 feet) to the project site. (Ex. 1 § 3.4.7.2.)

The need for fire protection water is 150,000 gallons which will be supplied from an existing 275,000-gallon underground cooling water tank. (Ex. 1, § 3.4.7.3)

Soil and Water Table 1

Estimated Normal and Maximum Water Requirements

Equipment	Normal (gpm)	Maximum (gpm)
Cooling Tower Make-up less evaporative Cooler Blowdown	812	879
Evaporative Cooler Make-up	20	45
Evaporative Cooler Blowdown to Cooling Tower	16	30
HRSG Make-up Water	8.5	10
Water Treatment Losses	1	2
Other Losses	1.8	2.5
Miscellaneous uses, total	25	37
Total Make-up Water Rate	**894**	**1,001**

Source: Ex. 1, Table 3.4-9.

4. Wastewater Treatment and Disposal

Process wastewater will be discharged via a new 12-inch pipeline to be installed to interconnect with the existing 14-inch sewer line located at Fruitland Avenue. Wastewater will be discharged to the County Sanitation District of Los Angeles County (CSDLAC). (Ex. 1, § 7.2.2; Ex. 34, 4.9-3.)

The Applicant provided a copy of the draft Industrial Wastewater Discharge Permit Application, (Ex.1, Appendix P.). Condition of Certification **Soil & Water 6** requires an approved Industrial Wastewater Discharge Permit prior to the start of project operation.

5. Cumulative Impacts

The area surrounding the MGS site is primarily industrial. Construction and operational activities related to the MGS project could cause a short-term increase in cumulative wind and water erosion. However, implementation of the Conditions of Certification ensure that MGS will not contribute significantly to cumulative erosion and sedimentation impacts during construction and operation. The project will use reclaimed water for cooling and will not affect potable or fresh water supply. According to Staff, there will be no significant cumulative impacts to soil and water resources. (Ex. 34, p. 4.9-13.)

FINDINGS AND CONCLUSIONS

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

1. Soils at the project site are susceptible to erosion during excavation and construction.

2. Since the site has already been graded, minimal future soil disturbance is expected.

3. Stormwater runoff due to impervious paved surfaces at the site has potential to pollute surface water bodies in the project area.

4. The project owner will prepare Stormwater Pollution Prevention Plans (SWPPP) and Erosion Control and Sedimentation Plans (ESCP) for the construction and operation phases of the project.

5. The SWPPP and ESCP plans will be consistent with the Los Angeles RWQCB's requirements, including the Standard Urban Stormwater Mitigation Plan (SUSMP) and Best Management Practices (BMPs).

6. The primary source of water for the project will be reclaimed water supplied by the Central Basin Municipal Water District (CBMWD.)

7. Production of reclaimed water by the CBMWD is adequate to supply the MGS and other existing uses.

8. Backup water supply will be available from the City of Vernon Department of Community Services and Water.

9. There is ample water available as back-up to the reclaimed water demand should there be a temporary interruption of the reclaimed water supply.

10. The MGS will discharge process wastewater to the County Sanitation District of Los Angeles County.

11. No adverse cumulative impacts to soils or water resources were identified in the evidentiary record.

12. Implementation of the Conditions of Certification, below, ensures that the project will conform with all applicable laws, ordinances, regulations, and standards (LORS) related to soil and water resources as identified in the pertinent portions of **Appendix A** attached to this Decision.

We therefore conclude that the project will not cause any significant adverse direct, indirect, or cumulative impacts to soil or water resources, and will comply with all applicable laws, ordinances, regulations, and standards (LORS).

CONDITIONS OF CERTIFICATION

SOILS & WATER-1: Prior to beginning any site mobilization activities associated with construction of any project element, the project owner shall obtain Energy Commission Compliance Project Manager (CPM) approval for a site specific Erosion Control and Sedimentation Plan that addresses all project elements.

Verification: At least 60 days prior to the start of any site mobilization activities associated with any project element, the Erosion Control and Sedimentation Plan shall be submitted to the CPM for approval. The plan shall be provided to the City of Vernon for approval comments, and shall conform to all applicable city and county requirements. Approval of the final plan by the CPM must be received prior to the initiation of any site mobilization activities associated with construction of any project element.

SOILS & WATER-2: The project owner shall comply with all of the requirements of the NPDES general permit for stormwater discharges associated with construction activities for MGS. The project owner, as required under the General Construction Activity Stormwater Permit, will develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for the

construction of the entire project. Prior to beginning any site mobilization activities associated with construction of any project element, the project owner shall obtain Energy Commission CPM approval of the project-specific construction activity SWPPP.

Verification: At least 60 days prior to the start of any site mobilization activities associated with the construction of any project element, the project owner shall submit a copy of the SWPPP that address final design, to the CPM for review and approval. Approval of the plan by the CPM must be received prior to the initiation of any site mobilization activities associated with construction of any project element.

SOIL & WATER-3: The project owner shall comply with all of the requirements of the NPDES general permit for stormwater discharges associated with industrial activities of MGS. The project owner, as required under the General Industrial Permit, will develop and implement a Stormwater Pollution Prevention Plan (SWPPP) for operation of the power plant. The project owner must obtain approval of the General Industrial Activities SWPPP from the Energy Commission CPM prior to commercial operation of the MGS.

Verification: At least 60 days prior to the start of power plant operation, the project owner shall submit to the CPM for approval a copy of the SWPPP, which complies with the requirements of the General Industrial Activity Stormwater Permit. Power plant operations will not start until the industrial SWPPP has been approved by the CPM.

SOIL & WATER-4: The project owner shall install metering devices and record on a monthly basis the amount of water, listed by source (potable and reclaimed) used by the project. The annual summary shall include the monthly range and monthly average of daily usage in gallons per day, and total water used by the project on a monthly and annual basis in acre-feet. The annual summary shall also include the yearly range and yearly average water use by the project. This information shall be supplied to the CPM.

Verification: The project owner shall submit an annual water use summary to the CPM as part of its annual compliance report for the life of the project.

SOIL & WATER-5: The project owner shall not use potable water for process cooling water for more than 9 days (216 hours) per calendar year.

Verification: The project owner shall include a detailed summary of all potable water and reclaimed water used for process water in the Annual Compliance Report. If use of potable water exceeds 9 days per year, the project

owner shall be subject to noncompliance procedures and enforcement action described in the General Compliance Conditions.

SOIL & WATER-6: Prior to the start of operation, the project owner shall submit a copy of the approved Industrial Wastewater Discharge Permit for the process wastewater produced at the MGS.

Verification: At least 60 days prior to the start of project operation, the project owner shall submit a copy of the approved Industrial Wastewater Discharge Permit to the CPM.

SOIL & WATER-7 The project owner shall complete the necessary project-related improvements to the reclaimed water distribution system prior to project start-up, including the installation of pressure-reducing stations, at existing recycled water customer sites and installation of 10,000 feet of new reclaimed water pipeline. Design and construction of these improvements shall be coordinated with the CBMWD.

Verification: At least 60 days prior to the start of project operation, the project owner shall submit written evidence to the CPM of completion of the necessary project-related improvements to the reclaimed water distribution system as coordinated with the CBMWD.

C. CULTURAL RESOURCES

Cultural resource materials such as artifacts, structures, or land modifications reflect the history of human development. Certain places that are important to Native Americans or local national/ethnic groups are also considered valuable cultural resources. This topic analyzes the structural and cultural evidence of human development in the project vicinity, where cultural resources could be disturbed by project excavation and construction. Federal and state laws require a project developer, such as the City of Vernon, to implement mitigation measures that minimize potential adverse impacts to *significant* cultural resources.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The term "cultural resource" is used broadly to include the following categories of resources: buildings, sites, structures, objects, and historic districts. When a cultural resource is determined to be significant, it is eligible for inclusion in the California Register of Historic Resources (CRHR). (Pub. Resources Code, § 5024.1; Cal. Code of Regs., tit. 14, § 4850 et seq.) An archaeological resource that does not qualify as an historic resource may be considered a "unique" archaeological resource under CEQA. (*See* Pub. Resources Code, § 21083.2.)

1. Background

Throughout California, significant archaeological and historic artifacts related to Native American cultures, Spanish and Mexican settlements, and/or American frontier settlements, could be discovered during development and construction activities. In addition, structures older than 45 years, or less if determined to be exceptional, could be considered for listing as significant historic structures.

Named for a Civil War veteran, George R. Vernon, the City of Vernon was known as Vernondale until the City's incorporation in 1905. Founded by John B. Leonis, the City was conceived as an exclusively industrial city. One of the earliest industries to settle in Vernon was meatpacking, which at one time was represented by more than twenty plants. The City was highly connected through a number of railroads and provided inexpensive transfer between the various major railroads. (Ex. 34, p. 4.3-3.)

Leonis encouraged the City to build its own plant since it was unable to secure special rates for manufacturing concerns relocating to Vernon. The result was Station A, which at the time (1931) was the second largest, diesel-powered generating plant in the world. By 1937, the City had leased the plant to the Edison Company. In 1947, the existing switchyard was constructed to replace the original equipment of the 1930's. *(Ibid.)*

2. Methodology

To determine whether cultural resources exist in the project vicinity, Applicant conducted a records search and literature review of all recorded historic and prehistoric archeological sites within a 0.5-mile radius of the power plant site and natural gas and sewer pipeline at the South Central Coast Information Center (SCCIC) of the California Historical Resources Information System (CHRIS) at California State University at Fullerton. (Ex.1, § 8.3.1.2.1.) No recorded historic or prehistoric resources were identified for those areas. *(Ibid.)* However, the record search revealed two properties within a 0.5-mile of the reclaimed water pipeline. (Ex. 1, p. 8.3-7.) According to Staff, the project will not affect those resources. (Ex. 34, p. 4.3-6.)

The Applicant's cultural resource consultants also conducted field surveys in the Area of Potential Effect (APE), which covered a 0.5-mile radius of the project site. (Ex. 1, p. 8.3-8; Appendix J; Ex. 29.) No prehistoric resources were observed,

but one potentially historic resource,[44] the existing City of Vernon Station A, was identified. *(Ibid.)* The Applicant proposes to turn the care, preservation, and upkeep of the building over to a non-profit corporation. Staff and Applicant agree that the switchyard, because its construction postdates the period of significance for Station A, is not considered a contributing element of the significance of Station A. (Ex. 34, p. 4.3-4.)

The new MGS will not alter the existing building that houses Station A. The new plant will be smaller, and even with the addition of new stacks, will not visually overpower Station A. At present, tall portions of other industrial facilities extend above rooftops on nearby property. Staff therefore determined that alterations in setting would not be significant. (Ex. 34, p. 4.3-4.)

According to Staff, the industrial area surrounding Station A may be eligible for inclusion in the CRHR as an historical district. (Ex. 34, p. 4.3-5.) The Applicant identified a core area including Station A as the Vernon Historical District.[45] The potential district consists of the historic, pre-World War II, industrial core of the City of Vernon. The architecture of the district includes a range of historic American architectural styles including American (Commercial, Bungaloid/Craftsman), Modern (Art Deco, Art Moderne, and International), and California Mission/Spanish Colonial. Forty-two structures have been identified as contributing structures, including Station A and contributing linear features (i.e. the railroads and spurs). According to Staff, building a new power facility within a historical district adds another non-contributing element to the district. However, Staff does not believe this would materially impair the district and or represent a significant impact. (Ex. 34, p. 4.3-5.)

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[44] Station A has been found to be a potentially eligible historic resource under California Register of Historic Resources (CRHR) criteria 1 and 3 (Ex. 34, p. 4.3-4.)

[45] Applicant considers the proposed Vernon Historical District eligible under criteria A (historic events) and C (design and construction) of the National Register of Historic Places. These correspond to criteria 1 and 3 of the California Register of Historical Resources. (Ex. 34, p. 4.3-5.)

Condition of Certification **CUL-8** requires the project owner to ensure that Station A is maintained in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) (36 CFR Part 68). (Ex. 42, p. 4.3-1.)

3. The California Native American Heritage Commission

The Native American Heritage Commission (NAHC) maintains records and maps of traditional resource sites and sacred lands located throughout the state. Applicant's review of the NAHC records did not indicate the presence of sacred lands in the project area. (Ex. 1, § 8.3.7.) To obtain further information about Native American resources near the site, Applicant sent letters and maps to groups and individuals identified by the NAHC. The Gabrielino/Tongva Tribal Council of the Gabrielino Tongva Nation sent a letter expressing concern that the project may have a significant environmental impact to the cultural resources of their tribal group. They recommended archaeological and Native American monitoring of subsurface construction activity. (Ex. 34, p. 4.3-6.) Condition of Certification **CUL-6** requires the project owner to obtain a Native American monitor to monitor ground disturbance in areas where Native American artifacts may be discovered.

4. Cumulative Impacts

The evidentiary record indicates there are no potential cumulative impacts because the project will not affect any known cultural resources. (Ex. 34, p. 4.3-6.) Should any cultural resources be identified during construction, implementation of the Conditions of Certification will reduce impacts to insignificant levels. (*Ibid*.)

5. Mitigation

According to Staff and Applicant, further industrial development is planned in the City of Vernon. Mitigation measures, such as recordation of potential historic resources and avoidance or excavation and data recovery of archaeological resources, appear feasible. If these mitigation measures are conducted by all of the development projects, the impacts will be mitigated below a level of significance. (Ex. 34, P. 4.3-6.)

Condition of Certification **CUL-3** requires the project owner to develop and implement a Cultural Resource Monitoring and Mitigation Plan (CRMMP). If cultural resources are encountered during construction activities, the totality of mitigation measures contained in the Conditions of Certification will ensure that the resources are protected. Condition **CUL-1** requires the project owner to designate a qualified cultural resource professional to be responsible for implementing the CRMMP.

FINDINGS AND CONCLUSIONS

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

1. There are no known archaeological or historic resources within or adjacent to the critical Area of Potential Effect (APE) except for City of Vernon Station A and the City of Vernon Historic District.

2. Applicant will maintain Station A in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) (36 CFR Part 68).

3. The Native American Heritage Commission has not recorded any Native American sacred properties within the APE.

4. The potential for impacts to unknown cultural resources may not be discovered until subsurface soils are exposed during excavation and construction.

5. The mitigation measures contained in the Conditions of Certification below ensure that any direct, indirect, or cumulative adverse impacts to cultural resources resulting from project-related activities will be insignificant.

The Commission, therefore, concludes that with implementation of the Conditions of Certification below, the project will conform with all applicable laws, ordinances, regulations, and standards relating to cultural resources as set forth in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

CUL-1 Prior to the start of ground disturbance, the project owner shall submit the resume of the proposed Cultural Resources Specialist (CRS), and one alternate CRS, if an alternate is proposed, to the CPM for review and approval. The CRS shall be responsible for implementation of all cultural resources conditions of certification and may obtain qualified cultural resource monitors (CRMs) to monitor as necessary on the project.

The resume for the CRS and alternate, shall include information that demonstrates that the minimum qualifications specified in the U.S. Secretary of Interior Guidelines, as published by the CFR 36, CFR Part 61 are met. In addition, the CRS shall have the following qualifications:

a. The technical specialty of the CRS shall be appropriate to the needs of the project and shall include, a background in anthropology, archaeology, history, architectural history or a related field; and

b. At least three years of archaeological or historic, as appropriate, resource mitigation and field experience in California.

The resume shall include the names and phone numbers of contacts familiar with the work of the CRS on referenced projects and demonstrate that the CRS has the appropriate education and experience to accomplish the cultural resource tasks that must be addressed during ground disturbance, grading, construction and operation. In lieu of the above requirements, the resume shall demonstrate to the satisfaction of the CPM, that the proposed CRS or alternate has the appropriate training and background to effectively implement the conditions of certification.

CRMs shall meet the following qualifications:

a. A BS or BA degree in anthropology, archaeology, historic archaeology or a related field and one year experience monitoring in California; or

b. An AS or AA in anthropology, archaeology, historic archaeology or a related field and four years experience monitoring in California; or

c. Enrollment in upper division classes pursuing a degree in the fields of anthropology, archaeology, historic archaeology or a related field and two years of monitoring experience in California.

The project owner shall ensure that the CRS completes any monitoring, mitigation and curation activities necessary; fulfills all the requirements of these conditions of certification; ensures that the CRS obtains technical specialists, and CRMs, if needed; and that the CRS evaluates any cultural resources that are newly discovered or that may be affected in an unanticipated manner for eligibility to the California Register of Historic Resources (CRHR).

Verification: The project owner shall submit the resume for the CRS at least 45 days prior to the start of ground disturbance. If an alternate is proposed, the resume of the alternate shall be submitted for review and approval at least 10 days prior to the alternate beginning duties.

At least 10 days prior to a termination or release of the CRS, the project owner shall submit the resume of the proposed new CRS.
At least 20 days prior to ground disturbance, the CRS shall submit written notification identifying any anticipated CRMs for the project stating they meet the minimum qualifications required by this condition. If additional CRMs are needed later, the CRS shall submit written notice one week prior to any new CRMs beginning work.
At least 10 days prior to the start of ground disturbance, the project owner shall confirm in writing to the CPM that the approved CRS will be available for onsite work and is prepared to implement the cultural resources conditions of certification.

CUL-2 Prior to the start of ground disturbance, the project owner shall provide the CRS and the CPM with maps and drawings showing the footprint of the power plant and all linear facilities. Maps will include the appropriate USGS quadrangles and a map at an appropriate scale (e.g., 1:2000 or 1” = 200’) for plotting individual artifacts. If the CRS requests enlargements or strip maps for linear facility routes, the project owner shall provide copies to the CRS and CPM.

1. If the footprint of the power plant or linear facilities changes, the project owner shall provide maps and drawings reflecting these changes, to the CRS and the CPM for approval. Maps shall identify all areas of the project where ground disturbance is anticipated.

2. If construction of the project will proceed in phases, maps and drawings, not previously submitted, shall be submitted prior to the start of each phase. Written notification identifying the proposed schedule of each project phase shall be provided to the CRS and CPM.

3. At a minimum, the CRS shall consult weekly with the project construction manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

4. The project owner shall notify the CRS and CPM of any changes to the scheduling of the construction phases.

Verification: The project owner shall submit the subject maps and drawings at least 40 days prior to the start of ground disturbance.

If there are changes to any project related footprint, revised maps and drawings shall be provided at least 15 days prior to start of ground disturbance for those changes.

If project construction is phased, the project owner shall submit the subject maps and drawings 15 days prior to each phase.

A current schedule of anticipated project activity shall be provided to the CRS on a weekly basis during ground disturbance and also provided in each Monthly Compliance Report (MCR).

The project owner shall provide written notice of any changes to scheduling of construction phases within 5 days of identifying the changes.

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 the CRS, to the CPM for approval. The CRMMP shall identify general and specific measures to minimize potential impacts to sensitive cultural resources. Copies of the CRMMP shall reside with the CRS, alternate CRS, each monitor, and the project owner's on-site manager. No ground disturbance shall occur prior to CPM approval of the CRMMP, unless specifically approved by the CPM.

The CRMMP shall include, but not be limited to, the following elements and measures.

1. A proposed general research design that includes a discussion of research questions and testable hypotheses applicable to the project area. A refined research design will be prepared for any resource where data recovery is required.

2. The following statement shall be added to the Introduction: "Any discussion, summary, or paraphrasing of the conditions in the CRMMP is intended as general guidance and as an aid to the user in understanding the conditions and their implementation. If there appears to be a discrepancy between the conditions and the way in which they have been summarized described, or interpreted in the CRMMP, the conditions, as written in the Final Decision, supercede any interpretation of the Conditions in the CRMMP. (The Cultural Resources conditions of Certification are attached as an Appendix to this CRMP)."

3. Specification of the implementation sequence and the estimated time frames needed to accomplish all project-related tasks during ground disturbance, construction, and post-construction analysis phases of the project.

4. Identification of the person(s) expected to perform each of the tasks, their responsibilities; and the reporting relationships between project construction management and the mitigation and monitoring team.

5. A discussion of the inclusion of Native American observers or monitors, the procedures to be used to select them, and their role and responsibilities.

6. A discussion of all avoidance measures such as flagging or fencing, to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during construction and/or operation, and identification of areas where these measures are to be implemented. The discussion shall address how these measures will be implemented prior to the start of construction and how long they will be needed to protect the resources from project-related effects.

7. A discussion of the requirement that all cultural resources encountered will be recorded on a DPR form 523 and mapped (may include photos). In addition, all archaeological materials collected as a result of the archaeological investigations (survey, testing, data recovery) shall be curated in accordance with The State Historical Resources Commission's "Guidelines for the Curation of Archaeological Collections," into a retrievable storage collection in a public repository or museum. The public repository or museum must meet the standards and requirements for the curation of cultural

resources set forth at Title 36 of the Federal Code of Regulations, Part 79.

8. A discussion of any requirements, specifications, or funding needed for curation of the materials to be delivered for curation and how requirements, specifications and funding will be met. The name and phone number of the contact person at the institution. Indication the project owner pays all curation fees and that any agreements concerning curation will be retained and available for audit for the life of the project.

9. A discussion of the availability and the designated specialist's access to equipment and supplies necessary for site mapping, photographing, and recovering any cultural resource materials encountered during construction.

10. A discussion of the proposed Cultural Resource Report (CRR) which shall be prepared according to Archaeological Resource Management Report (ARMR) Guidelines.

Verification: The project owner shall submit the subject CRMMP at least 30 days prior to the start of ground disturbance. Per ARMR Guidelines the author's name shall appear on the title page of the CRMMP. Ground disturbance activities may not commence until the CRMMP is approved. A letter shall be provided to the CPM indicating that the project owner will pay curation fees for any materials collected as a result of the archaeological investigations (survey, testing, data recovery).

CUL-4 The project owner shall submit the Cultural Resources Report (CRR) to the CPM for review and approval The CRR shall be written by the CRS and provided in ARMR format. The CRR shall report on all field activities including dates, times and locations, findings, samplings and analysis. All survey reports, DPR 523 forms and additional research reports not previously submitted to the California Historic Resource Information System (CHRIS) shall be included as an appendix to the CRR.

Verification: The project owner shall submit the subject CRR within 90 days after completion of ground disturbance (including landscaping). Within 10 days after CPM approval, the project owner shall provide documentation to the CPM that copies of the CRR have been provided to the State Historic Preservation Office (SHPO), the CHRIS and to the curating institution (if archaeological materials were collected).

CUL-5 Worker Environmental Awareness Program (WEAP) shall be provided, on a weekly basis, to all new employees starting prior to the beginning and for

the duration of ground disturbance. The training may be presented in the form of a video. The training shall include:

1. a discussion of applicable laws and penalties under the law;

2. samples or visuals of artifacts that might be found in the project vicinity;

3. information that the CRS, alternate CRS or CRM has the authority to halt construction in the event of a discovery or unanticipated impact to a cultural resource;

4. instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the CRS or CRM;

5. an informational brochure that identifies reporting procedures in the event of a discovery;

6. an acknowledgement form signed by each worker indicating that they have received the training;

7. and a sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: The project owner shall provide the WEAP Certification of Compliance Report form in the Monthly Compliance Report identifying persons who have completed the training in the prior month and a running total of all persons who have completed training to date.

CUL-6 The CRS, alternate CRS, or monitors shall monitor ground disturbance full time in the vicinity of the project site, linears and ground disturbance at laydown areas or other ancillary areas to ensure there are no impacts to undiscovered resources and to ensure that known resources are not impacted in an unanticipated manner. In the event that the CRS determines that full-time monitoring is not necessary in certain locations, a letter or email providing a detailed justification for the decision to reduce the level of monitoring shall be provided to the CPM for review and approval prior to any reduction in monitoring.

CRMs shall keep a daily log of any monitoring or cultural resource activities and the CRS shall prepare a weekly summary report on the progress or status of cultural resources-related activities. The CRS may informally discuss cultural resource monitoring and mitigation activities with Energy Commission technical staff.

The CRS shall notify the project owner and the CPM, by telephone or e-mail, of any incidents of non-compliance with any cultural resources conditions of

certification within 24 hours of becoming aware of the situation. The CRS shall also recommend corrective action to resolve the problem or achieve compliance with the conditions of certification.

Cultural resources monitoring activities are the responsibility of the CRS. Any interference with monitoring activities, removal of a monitor from duties assigned by the CRS or direction to a monitor to relocate monitoring activities by anyone other than the CRS shall be considered non-compliance with these conditions of certification.

A Native American monitor shall be obtained, to monitor ground disturbance in areas where Native American artifacts may be discovered. Informational lists of concerned Native Americans and Guidelines for monitoring shall be obtained from the Native American Heritage Commission. Preference in selecting a monitor shall be given to Native Americans with traditional ties to the area that shall be monitored.

Verification: During the ground disturbance phases of the project, if the CRS wishes to reduce the level of monitoring occurring at the project, a letter identifying the area(s) where the CRS recommends the reduction and justifying the reductions in monitoring shall be submitted to the CPM for review and approval.

During the ground disturbance phases of the project, the project owner shall include in the MCR to the CPM copies of the weekly summary reports prepared by the CRS regarding project-related cultural resources monitoring. Copies of daily logs shall be retained and made available for audit by the CPM.

Within 24 hours of recognition of a non-compliance issue, the CRS shall notify the CPM by telephone of the problem and of steps being taken to resolve the problem. The telephone call shall be followed by an e-mail or fax detailing the non-compliance issue and the measures necessary to achieve resolution of the issue. Daily logs shall include forms detailing any instances of non-compliance with conditions of certification. In the event of a non-compliance issue, a report written no sooner than two weeks after resolution of the issue that describes the issue, resolution of the issue and the effectiveness or the resolution measures, shall be provided in the next MCR.

One week prior to ground disturbance in areas where there is a potential to discover Native American artifacts, the project owner shall send notification to the CPM identifying the person(s) retained to conduct Native American monitoring. If efforts to obtain the services of a qualified Native American monitor are unsuccessful, the project owner shall immediately inform the CPM who shall initiate a resolution process.

CUL-7 The CRS, alternate CRS and the CRMs shall have the authority to halt construction if previously unknown cultural resource sites or materials are encountered, or if known resources may be impacted in a previously unanticipated manner. Redirection of ground disturbance shall be accomplished under the direction of the construction supervisor.

In the event resources are found or impacts can be anticipated, the halting or redirection of construction shall remain in effect until all of the following have occurred:

1. the CRS has notified the project owner, and the CPM has been notified within 24 hours of the find description and the work stoppage.;

2. The CRS, the project owner, and the CPM have conferred and determined what, if any, data recovery or other mitigation is needed; and

3. Any necessary data recovery and mitigation has been completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the CPM with a letter confirming that the CRS, alternate CRS and CRMs have the authority to halt construction activities in the vicinity of a cultural resource find, and that the CRS or project owner shall notify the CPM immediately (no later than the following morning of the incident or Monday morning in the case of a weekend) of any halt of construction activities, including the circumstance and proposed mitigation measures. The project owner shall provide the CRS with a copy of the letter granting the authority to halt construction.

CUL-8 The project owner shall ensure that Station A is maintained in accordance with the Secretary of the Interior's Standards for the Treatment of Historic Properties (1995) (36 CFR Part 68). The project owner shall provide a summary of maintenance activities completed within each calendar year.

Verification: In each annual compliance report, the project owner shall include the summary of Station A maintenance activities completed within the last calendar year.

D. GEOLOGY AND PALEONTOLOGY

In this section, we discuss the project's potential impacts on significant geological and paleontological resources, and surface water hydrology. We also evaluate whether project-related activities could result in public exposure to geological hazards; and if so, whether proposed mitigation measures will adequately protect public health and safety.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The project site is located on the coastal floodplain of the Los Angeles River, which lies about 3/4-mile northeast of the project site in the central Los Angeles Basin. (Ex. 1, p. 8.16-1; Ex. 34, p. 5.2-2.) Applicant conducted a Geotechnical Investigation (GI) to assess potential geological hazards at the MGS site. (Ex. 1, Appendix C.)

1. Potential for Seismic Events

The MGS site is located within the northeast corner of the Peninsular Ranges geomorphic province. This area within the Peninsular Ranges is characterized by the Los Angeles Basin, an active structural basin. This portion of the Basin is bounded by the Santa Monica Mountains to the northwest, the Whittier Fault to the northeast, the San Joaquin Hills to the southeast, and the Newport-Englewood Fault to the southwest. (Ex.1, p. 8.15-1.) The project site is within a highly active seismic region and is designated Seismic Zone 4 for the highest level of earthquake activity. Over 30 faults are present within a 62-mile radius of the site. (Ex. 1, p. 8.15-2.)

Although the faults identified in the GI have the potential to cause ground shaking at the MGS site, neither the site nor the linears are located on an active fault. (Ex. 1, § 8.15.1.2; Ex. 34, p. 5.2-7.) However, the Los Angeles segment of the

Puente Hills blind thrust fault underlies the site. (Ex. 34, p. 5.2-3.) The project will be designed to withstand strong seismic ground shaking in accordance with the most current California Building Code (CBC) standards for Seismic Zone 4. (Ex. 34, p. 5.2-7; *see* Conditions of Certification **GEN-1, GEN-5,** and **CIVIL-3** in the **Facility Design** section of this Decision.)

The GI contains a site-specific study, which assessed the potential for ground rupture, liquefaction, hydrocompaction, landslides, expansive soils, and subsidence in soils beneath or adjacent to project components that would present potential hazards associated with strong seismic shaking and/or unusual water infusion. (Ex. 1, Appendix C.) Staff reviewed the GI and concluded that; based on site geology, the potential for liquefaction is considered low; the potential for landsliding at or adjacent to the site is considered to be negligible; and the potential for lateral spreading, subsidence, or collapse is considered low. Expansive soils are not present at this site. (Ex. 34, pp. 5.2-3, 5.2-4, 5.2-7.)

2. Potential Impacts to Geological/Paleontological Resources

There are no known geological or mineralogical resources located on or immediately adjacent to the proposed MGS site. (Ex. 34, p. 5.2-5.) Applicant's consultants conducted a paleontological resources field survey and a sensitivity analysis at the MGS site and along the linear facility corridors and found no fossil fragments. However, several paleontological localities exist near the MGS site in the same geologic formation that is present beneath the site's disturbed surface soils. The project site contains both fill material and Quaternary alluvium. As a result, the site is assigned a no potential sensitivity rating for the fill material and an undetermined sensitivity rating for the Quaternary alluvium. *(Ibid.)*

Conditions **PAL-1** through **PAL-7** ensure that any potential impacts on unknown paleontological resources will be reduced to insignificant levels should they be encountered during project-related activities. These Conditions of Certification

require the project owner to implement a Paleontological Resources Monitoring and Mitigation Plan to minimize impacts to any newly discovered fossil materials encountered at the site and along the linear alignments.

FINDINGS AND CONCLUSIONS

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

1. The project is located in Seismic Zone 4, which presents significant earthquake hazards.

2. The project will be designed to withstand strong earthquake shaking in accordance with the California Building Code.

3. Final project design will include measures to mitigate potential risk from ground rupture, liquefaction, hydrocompaction, landslides, expansive soils, and subsidence associated with strong seismic shaking.

4. There is no evidence of geological or paleontological resources at the project site.

5. To prevent impacts to unknown sensitive paleontological resources, the project owner will implement a Paleontological Resources Monitoring and Mitigation Plan.

6. With implementation of the Conditions of Certification, the project will conform with all applicable laws, ordinances, regulations, and standards relating to geological and paleontological resources as identified in the pertinent portions of **Appendix A** of this Decision.

The Commission, therefore, concludes that implementation of the Conditions of Certification, below, ensure that project activities will not cause adverse impacts to either geological or paleontological resources or expose the public to geological hazards.

CONDITIONS OF CERTIFICATION

General Conditions of Certification with respect to Geology are covered under Conditions of Certification **GEN-1**, **GEN-5**, and **CIVIL-1** in the **FACILITY DESIGN** section. Conditions of Certification for Paleontology are as follows:

PAL-1 The project owner shall provide the CPM with the resume and qualifications of its Paleontological Resource Specialist (PRS) and Paleontological Resource Monitors (PRMs) for review and approval. If the approved PRS or one of the PRMs is replaced prior to completion of project mitigation and report, the project owner shall obtain CPM approval of the replacement.

The resume shall include the names and phone numbers of contacts. 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 Paleontologists (SVP) guidelines of 1995. The experience of the PRS shall include the following:

1. institutional affiliations or appropriate credentials and college degree;
2. ability to recognize and recover fossils in the field;
3. local geological and biostratigraphic expertise;
4. proficiency in identifying vertebrate and invertebrate fossils;
5. publications in scientific journals; and
6. the PRS shall have 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 PRS shall obtain qualified paleontological resource monitors to monitor as necessary on the project. Paleontologic resource monitors (PRMs) shall have the equivalent of the following qualifications:

1. BS or BA degree in geology or paleontology and one year experience monitoring in California; or

2. AS or AA in geology, paleontology or biology and four years experience monitoring in California; or

3. Enrollment in upper division classes pursuing a degree in the fields of geology or paleontology and two years of monitoring experience in California.

Verification: At least 60 days prior to the start of ground disturbance, the project owner shall submit a resume and statement of availability of its designated PRS for on-site work.

At least 20 days prior to ground disturbance, the PRS or project owner shall provide a letter with resumes naming anticipated monitors for the project and stating that the identified monitors meet the minimum qualifications for paleontological resource monitoring required by the condition. If additional monitors are obtained during the project, the PRS shall provide additional letters and resumes to the CPM for approval. The letter shall be provided to the CPM no later than one week prior to the monitor beginning on-site duties.

Prior to the termination or release of a PRS, the project owner shall submit the resume of the proposed new PRS to the CPM for review and approval.

PAL-2 The project owner shall provide to the PRS and the CPM, for approval, maps and drawings showing the footprint of the power plant and all linear 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 the plan and profile drawings for the utility lines would normally be acceptable for this purpose. The plan drawings should show the location, depth, and extent of all ground disturbances and can be 1 inch = 40 feet to 1 inch = 100 feet range. If the footprint of the power plant or linear facility changes, the project owner shall provide maps and drawings reflecting these changes to the PRS and CPM.

If construction of the project will proceed in phases, maps and drawings may be submitted prior to the start of each phase. A letter identifying the proposed schedule of each project phase shall be provided to the PRS and CPM. Prior to work commencing on affected phases, the project owner shall notify the PRS and CPM of any construction phase scheduling changes.

At a minimum, the PRS shall consult weekly with the project superintendent or construction field manager to confirm area(s) to be worked during the next week, until ground disturbance is completed.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall provide the maps and drawings.

If there are changes to the footprint of the project, revised maps and drawings shall be provided 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 5 days of identifying the changes.

PAL-3 The PRS shall prepare, and the project owner shall submit to the CPM for review and approval, a Paleontological Resources Monitoring and Mitigation Plan (PRMMP) to identify general and specific measures to minimize potential impacts to significant paleontological resources. Approval of the PRMMP by the CPM shall occur prior to any ground disturbance. The PRMMP shall function as the formal guide for monitoring, collecting and sampling activities and may be modified with CPM approval. This document shall be used as a basis for discussion in the event that on-site decisions or changes are proposed. Copies of the PRMMP shall reside with the PRS, each monitor, the project owner's on-site manager, and the CPM.

The PRMMP shall be developed in accordance with the guidelines of the Society of the Vertebrate Paleontologists (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 recovery; identification and inventory; preparation of final reports; and transmittal of materials for curation will be performed according to the PRMMP procedures;
2. Identification of the person(s) expected to assist with each of the tasks identified within the PRMMP and all conditions for certification;
3. A thorough discussion of the anticipated geologic units expected to be encountered, the location and depth of the units relative to the project when known, and the known sensitivity of those units based on the occurrence of fossils either in that unit or in correlative units;
4. An explanation of why, how, and how much sampling is expected to take place and in what units. Include descriptions of different sampling procedures that shall be used for fine-grained and coarse-grained beds;
5. A discussion of the locations of where the monitoring of project construction activities is deemed necessary, and a proposed schedule for the monitoring;
6. A discussion of the procedures to be followed in the event of a significant fossil discovery, including notifications;

7. A discussion of equipment and supplies necessary for recovery of fossil materials and any specialized equipment needed to prepare, remove, load, transport, and analyze large-sized fossils or extensive fossil deposits;
8. Procedures for inventory, preparation, and delivery for curation into a retrievable storage collection in a public repository or museum, which meets the Society of Vertebrate Paleontologists standards and requirements for the curation of paleontological resources; and
9. Identification of the institution that has agreed to receive any data and fossil materials recovered, requirements or specifications for materials delivered for curation and how they will be met, and the name and phone number of the contact person at the institution; and,
10. A copy of the paleontological conditions of certification.

Verification: At least 30 days prior to ground disturbance, the project owner shall provide a copy of the PRMMP. The PRMMP shall include an affidavit of authorship by the PRS, and acceptance of the project owner evidenced by a signature.

PAL-4 Prior to ground disturbance and for the duration of construction, the project owner and the PRS shall prepare and conduct weekly CPM-approved training for all project managers, construction supervisors and workers who operate ground disturbing equipment or tools. Workers to be involved in ground disturbing activities in sensitive units shall not operate equipment prior to receiving worker training. The training program may be combined with other training programs prepared for cultural and biological resources, hazardous materials, or any other areas of interest or concern.

The Worker Environmental Awareness Program (WEAP) shall address the potential to encounter paleontological resources in the field, the sensitivity and importance of these resources, and the legal obligations to preserve and protect such resources. In-person training shall be provided for each new employee involved with ground disturbing activities, while these activities are occurring in highly sensitive geologic units, as detailed in the PRMMP. The in-person training shall occur within four days following a new hire for highly sensitive sites and as established by the PRMMP for sites of moderate, low, and zero sensitivity. Provisions will be made to provide the WEAP training to workers not fluent in English.

The training shall include:

1) A discussion of applicable laws and penalties under the law;

2) For training in locations of high sensitivity, the PRS shall provide good quality photographs or physical examples of vertebrate fossils that may be expected in the area;

3) Information that the PRS or PRM has the authority to halt or redirect construction in the event of a discovery or unanticipated impact to a paleontological resource;

4) Instruction that employees are to halt or redirect work in the vicinity of a find and to contact their supervisor and the PRS or PRM;

5) An informational brochure that identifies reporting procedures in the event of a discovery;

6) A Certification of Completion of WEAP form signed by each worker indicating that they have received the training; and

7) A sticker that shall be placed on hard hats indicating that environmental training has been completed.

Verification: At least 30 days prior to ground disturbance, the project owner shall submit the proposed WEAP including the brochure with the set of reporting procedures the workers are to follow.

At least 30 days prior to ground disturbance, the project owner shall submit the script and final video to the CPM for approval if the project owner is planning on using a video for interim training.

If an alternate paleontological trainer is requested by the owner, the resume and qualifications of the trainer shall be submitted to the CPM for review and approval. Alternate trainers shall not conduct training prior to CPM authorization.

The project owner shall provide in the Monthly Compliance Report the WEAP copies of the Certification of Completion forms with the names of those trained and the trainer for each training offered that month. The Monthly Compliance Report shall also include a running total of all persons who have completed the training to date.

PAL-5 The PRS and PRM(s) shall monitor consistent with the PRMMP, all construction-related grading, excavation, trenching, and augering in areas where potentially fossil-bearing materials have been identified. In the event that the PRS determines full time monitoring is not necessary in locations that were identified as potentially fossil-bearing in the PRMMP, the PRS shall notify and seek the concurrence of the CPM.

The PRS and PRM(s) shall 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:

Any change of monitoring different from the accepted schedule presented in the PRMMP shall be proposed in a letter from the PRS and the project owner to the CPM prior to the change in monitoring. The letter shall include the justification for the change in monitoring and submitted to the CPM for review and approval.

PRM(s) shall keep a daily log of monitoring of paleontological resource activities. The PRS may informally discuss paleontological resource monitoring and mitigation activities with the CPM at any time.

The PRS shall immediately notify the project owner and the CPM 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.

For any significant paleontological resources encountered, either the project owner or the PRS shall notify the CPM immediately (no later than the following morning after the find, or Monday morning in the case of a weekend) of any halt of construction activities.

Verification: The PRS shall prepare a summary of the monitoring and other paleontological activities that will be placed in the Monthly Compliance Reports. The summary will include the name(s) of PRS or monitor(s) active during the month; general descriptions of training and construction activities and general locations of excavations, grading, etc. A section of the report will include the geologic units or subunits encountered; descriptions of sampling within each unit; and a list of fossils identified in the field. A final section of the report will address any issues or concerns about the project relating to paleontologic monitoring including any incidents of non-compliance and any changes to the monitoring plan that have been approved by the CPM. If no monitoring took place during the month, the project shall include a justification in summary as to why monitoring was not conducted.

PAL-6 The project owner, through the designated PRS, shall ensure the recovery, preparation for analysis, analysis, identification and inventory, the preparation for curation, and the delivery for curation of all significant paleontological resource materials encountered and collected during the monitoring, data recovery, mapping, and mitigation activities related to the project.

Verification: The project owner shall maintain in their compliance file copies of signed contracts or agreements with the designated PRS and other qualified research specialists. The project owner shall maintain these files for a period of three years after completion and approval of the CPM-approved PRR. The

project owner shall be responsible to pay curation fees for fossils collected and curated as a result of paleontological monitoring and mitigation.

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 recovered fossil materials and related information and submitted to the CPM for review and approval.

Verification: The report shall include, but not be 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.

Within 90 days after completion of ground disturbing activities, including landscaping, the project owner shall submit the Paleontological Resources Report under confidential cover.

VII. LOCAL IMPACT ASSESSMENT

All aspects of a power plant project affect to some degree the community in which it is located. The impact on the local area depends upon the nature of the community and the extent of the associated impacts. Technical topics discussed in this portion of the Decision consider issues of local concern, including land use, traffic and transportation, visual resources, noise, and socioeconomics.

A. LAND USE

The land use analysis focuses on two main issues (1) whether the project is consistent with local land use plans, ordinances, and policies; and (2) whether the project is compatible with existing and planned land uses.

Summary and Discussion of the Evidence

The project site is located within the western portion of the City of Vernon in central Los Angeles County. Land use LORS applicable to the proposed project are contained in the City of Vernon's General Plan and Zoning Ordinance. (Ex. 34, pp. 4.5-1 and 4.5-2.)

1. The Site

The project site is located in the City of Vernon in Los Angeles County, and is bordered on the north and west by the City of Los Angeles, on the east by the cities of Commerce and Bell, and on the south by the cities of Huntington Park and Maywood. Vernon is an exclusively industrial area of approximately 5.25 square miles and employs approximately 50,000 people within its boundaries.[73] (Ex. 1, p. 8.4-2; Ex. 34, p. 4.5-3.)

[73] The City of Vernon has a population of approximately 95 people, consisting primarily of the City's emergency workforce. (Ex. 34, p. 4.5-3.)

Staff and Applicant agreed that the MGS is consistent with the City's existing and planned uses and zoning designations for the site and surrounding area and does not conflict with any relevant land use policies contained in the Vernon General Plan. (Ex. 1, p. 8.4-3; Ex. 34, p. 4.5-8.) The project will be situated on an existing power plant site, which is designated Industrial "M" District. The existing power plant is zoned "Public Facility" in the City's Land Use Element. This zoning permits power plants and a range of light and heavy industrial uses, including public utilities and related facilities. (Ex. 34, pp. 4.5-1, 4.5-8.)

According to Staff, the project will comply with the City's parking standards and the minimum design and performance standards applicable to the construction of industrial buildings in the "M" District. (Ex. 34, p. 4.5-8.) Condition of Certification **LAND-1** will ensure the project's compliance with the City's industrial design and performance standards for those standards subject to interpretation. Condition of Certification **LAND-2** requires that the project comply with the City of Vernon's parking standards. Given the project's consistency with the City's applicable land use LORS and with implementation of these two Conditions of Certification, impacts will be less than significant. (*Ibid*.)

2. Potential Impacts

The evidentiary record indicates that the MGS has no potential to physically divide an existing community since it is located entirely on City property and neither the size nor nature of the project would alter any land use patterns in the area. (Ex. 34, p. 4.5-7.)

Staff testified that the project is consistent with the City of Vernon's long-range land use policies for this Industrial designated area as expressed in the General Plan. (Ex. 34, p. 4.5-9.) Since the project is consistent with the long-range policies, there is no evidence of potential cumulative land use impacts. (*Id*. at pp. 4.5-9 and 4.5-10.)

FINDINGS AND CONCLUSIONS

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

1. The MGS is located within the City of Vernon in Los Angeles County.

2. The project will be constructed entirely on the City's Station A site where the existing Station A generating facility and the Vernon Substation are situated.

3. The site is located in the City's Industrial "M" District, which allows power plants and a range of light and heavy industrial uses including public utilities and related facilities.

4. The project is compatible with existing and planned land uses, and will not preclude or unduly restrict existing or planned land uses.

5. There is no potential for the MGS to physically divide the community nor is there evidence of potential cumulative impacts.

6. Implementation of the Conditions of Certification, below, will ensure that the MGS complies with all applicable laws, ordinances, regulations, and standards identified in the pertinent portions of **Appendix A** in this Decision.

We, therefore, conclude that construction and operation of the MGS will not result in direct, indirect, or cumulative land use impacts. Implementation of the Conditions of Certification, below, ensures that the MGS will comply with all applicable laws, ordinances, regulations, and standards (LORS) related to land use.

CONDITIONS OF CERTIFICATION

LAND-1 The project owner shall comply with the minimum design and performance standards for the Industrial (M) District set forth in the City of Vernon Zoning Ordinance (Division 2, Sec.31-808).

Verification: At least 30 days prior to site mobilization of the MGS project, the project owner shall submit written evidence to the Energy Commission Compliance Project Manager (CPM) that the project conforms to all applicable design and performance standards for the Industrial (M) District set forth in the

City of Vernon Zoning Ordinance (Section 31-808). The submittal to the CPM shall include written evidence of review by the City.

LAND-2 The project owner shall comply with the parking standards established by the City of Vernon Zoning Ordinance (Division 2, Sec. 21-808).

Verification: At least 30 days prior to site mobilization, the project owner shall submit written evidence to the Energy Commission Compliance Project Manager (CPM) that the project conforms to all applicable parking standards as established by the City of Vernon zoning ordinance (Title 8, Chapter 82-16). The submittal to the CPM shall include written evidence of review by the City.

B. TRAFFIC AND TRANSPORTATION

In this section, we examine the extent to which the proposed project will affect the regional and local transportation systems. In some cases, construction and operation of the project have the potential to adversely impact the transportation system in the vicinity. During the construction phase, large numbers of workers arriving and leaving during peak traffic hours and the delivery of large pieces of equipment could increase roadway congestion and affect traffic flow. During plant operation, there is reduced potential for impacts due to the limited number of vehicles involved; operations and maintenance traffic will be minimal but a slight increase in deliveries of hazardous materials is expected. In all cases, transportation of hazardous materials must comply with federal and state laws.

The evidentiary record contains a review of the relevant roads and routings in the vicinity; the potential traffic problems associated with those routes; the anticipated number of deliveries of oversized/overweight equipment; the anticipated encroachments upon public rights-of-way; the frequency of and routes associated with the delivery of hazardous materials; and the availability of alternative transportation methods.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The City of Vernon has large concentrations of industrial, manufacturing, and warehouse land uses, which generate large volumes of truck traffic. In addition, an extensive rail network is located within the City and serves as a terminus for the truck transportation element that delivers both raw materials used in the manufacturing process and the finished products to their markets. (Ex. 1, p. 8.10-1.)

Regional access to the City is provided via the Long Beach Freeway (I-710) that runs along the eastern border of the City and the San Bernardino Freeway (I-10)

that runs to the north of the City in the City of Los Angeles. A direct ramp connection with the I-710 is provided at Atlantic and Bandini Boulevards. Additional freeway access is provided to the west by the Harbor Freeway (I-110), which is accessed via Vernon Avenue. Access to the I-10 and I-5 is provided through ramp connections at Alameda Street, Santa Fe Avenue, and Soto Street respectively, but these ramps are outside the City of Vernon. (Ex. 34, p. 4.10-10.)

North-south arterial access to and through the City is provided via Alameda Street, Santa Fe Avenue, Soto Street, Downey Road, and Atlantic Boulevard. East-west arterial access is provided via Bandini Boulevard, Slauson Avenue, and District Boulevard. (Ex. 34, p. 4.10-10.)

Local access is provided through a system of collector streets designed to serve the local area. These streets include Fruitland Avenue, Vernon Avenue, Pacific Boulevard, 26th Street, Boyle Avenue, Leonis Avenue, and 37th/38th Streets. (Ex. 1, pp. 8.10-1, 8.10-2.)

Traffic and Transportation Table 8.10-2, **Existing Roadway System Utilization**, replicated below from Applicant's testimony, identifies the annual average daily traffic (ADT), annual average peak-hour traffic, annual average percent of truck traffic, design capacity in vehicles per day, and level of service (LOS) for highways in the vicinity of the project. These traffic estimates are presented for various road segments between mileposts or junctions on each road. LOS levels refer to the average vehicle capacity and the flow of traffic. LOS A denotes free flow of traffic while LOS F represents severe traffic congestion and a potential for delays. A LOS of C or D is usually considered acceptable for planning purposes, whereas LOS E and F are considered unacceptable.

Table 8.10-2
Existing Roadway System Utilization

Jurisdiction	Impacted Roadway Segments On	Between	Road Class	Median	No. of Lanes	Design Capacity	Current ADT	V/C	Current LOS	Percent Trucks
Vernon	Bandini	Soto & Downey	Major	Undivided	6	48,000	17,100	0.36	A	24%
Vernon	Bandini	Downey & I-710	Major	Undivided	6	48,000	21,900	0.46	A	29%
Vernon	Leonis	Soto & Boyle	Collector	Undivided	4	24,000	12,700	0.53	A	11.0%
Vernon	Leonis	Boyle & Alcoa	Collector	Undivided	4	24,000	13,500	0.56	A	14.0%
Vernon	Leonis	Alcoa & Downey	Collector	Undivided	4	24,000	16,800	0.70	B	13.0%
Vernon	Fruitland	Soto & Boyle	Collector	Undivided	4	24,000	4,200	0.18	A	10.0%
Vernon	50th Street	Soto & Boyle	Local	Undivided	2	12,000	3,700	0.31	A	11.0%
Vernon	Soto St.	Fruitland & Leonis	Primary	Undivided	6	48,000	26,000	0.54	A	10.0%
Vernon	Soto St.	Leonis & Vernon	Primary	Undivided	6	48,000	27,400	0.57	A	8.0%
Vernon	Soto St.	Vernon & Bandini	Primary	Undivided	6	48,000	34,000	0.71	C	10.0%
Vernon	Boyle	Fruitland & Leonis	Secondary	Undivided	4	24,000	12,500	0.52	A	6.0%
Vernon	Boyle	Leonis & Vernon	Collector	Undivided	4	32,000	3,300	0.10	A	8.0%
Vernon	Alcoa	Fruitland & Leonis	Collector	Undivided	4	32,000	2,700	0.08	A	13.0%
Vernon	Alcoa	Leonis & Vernon	Collector	Undivided	4	32,000	900	0.03	A	39.0%
Vernon	Downey	Fruitland & Leonis	Primary	Undivided	4	32,000	16,400	0.51	A	8.0%
Vernon	Downey	Leonis & Vernon	Primary	Undivided	4	32,000	18,800	0.59	A	11.0%
Vernon	Downey	Vernon & Bandini	Primary	Undivided	4	32,000	19,600	0.61	B	12.0%

As shown below in Applicant's **Table 8.10-5, Projected Level of Service during Construction**, many of the routes potentially affected by the MGS are operating at LOS A or B. Only one intersection is operating at Level C. (Ex. 1, pp. 8.10-19; Ex. 34, p. 4.10-7.)

Table 8.10-5
Projected Level of Service During Construction

Jurisdiction	Impacted Roadway Segments		Road Class	Median	No. of Lanes	Design Capacity	Current ADT	V/C	Current LOS	Projected ADT	V/C	LOS
	On	Between										
Vernon	Bandini	Soto & Downey	Major	Undivided	6	48,000	17,100	0.36	A	17,121	0.36	A
Vernon	Bandini	Downey & I-710	Major	Undivided	6	48,000	21,900	0.46	A	22,047	0.46	A
Vernon	Leonis	Soto & Boyle	Collector	Undivided	4	24,000	12,700	0.53	A	12,700	0.53	A
Vernon	Leonis	Boyle & Alcoa	Collector	Undivided	4	24,000	13,500	0.56	A	13,500	0.56	A
Vernon	Leonis	Alcoa & Downey	Collector	Undivided	4	24,000	16,800	0.70	B	16,800	0.70	B
Vernon	Fruitland	Soto & Boyle	Collector	Undivided	4	24,000	4,200	0.18	A	4,215	0.18	A
Vernon	50th Street	Soto & Boyle	Local	Undivided	2	12,000	3,700	0.31	A	4,012	0.33	A
Vernon	Soto St.	Fruitland & Leonis	Primary	Undivided	6	48,000	26,000	0.54	A	26,092	0.54	A
Vernon	Soto St.	Leonis & Vernon	Primary	Undivided	6	48,000	27,400	0.57	A	17,421	0.36	A
Vernon	Soto St.	Vernon & Bandini	Primary	Undivided	6	48,000	34,000	0.71	C	34,021	0.71	C
Vernon	Boyle	Fruitland & Leonis	Secondary	Undivided	4	24,000	12,500	0.52	A	12,500	0.52	A
Vernon	Boyle	Leonis & Vernon	Collector	Undivided	4	32,000	3,300	0.10	A	3,300	0.10	A

Jurisdiction	Impacted Roadway Segments		Road Class	Median	No. of Lanes	Design Capacity	Current ADT	V/C	Current LOS	Projected ADT	V/C	LOS
	On	Between										
Vernon	Alcoa	Fruitland & Leonis	Collector	Undivided	4	32,000	2,700	0.08	A	2,700	0.08	A
Vernon	Alcoa	Leonis & Vernon	Collector	Undivided	4	32,000	900	0.03	A	900	0.03	A
Vernon	Downey	Fruitland & Leonis	Primary	Undivided	4	32,000	16,400	0.51	A	16,604	0.52	A
Vernon	Downey	Leonis & Vernon	Primary	Undivided	4	32,000	18,800	0.59	A	18,926	0.59	A
Vernon	Downey	Vernon & Bandini	Primary	Undivided	4	32,000	19,600	0.61	B	19,726	0.62	B

Major Highways

Carry high traffic volumes and are the primary thoroughfares linking adjacent cities. Driveway access to these roadways is typically limited to provide efficient high volume traffic flow

Primary Highways

Carry high traffic volumes and provide limited access. They function to link the major highways to the secondary highways as well as carry vehicles entering and exiting the city. Driveway access is also typically limited, where feasible.

Secondary Highways

Carry traffic along the perimeters of major developments and are also through streets enabling traffic to cross large areas of the city.

NOTE:

Roadway segments that are currently operating at or above capacity are highlighted.

The truck routes in the City of Vernon pass through a mixture of industrial and commercial areas. The industrial activity in Vernon results in the area having a high level of truck traffic. Truck traffic on the local roadways reaches a high of 39 percent along a portion of Alcoa Boulevard with a low of 6 percent on Boyle Road (**Table 8.10-2, Existing Roadway Characteristics**, above). Since Vernon is an industrial city with no major residential or retail areas, the potential impacts of project-related truck traffic on local traffic do not present a significant concern. (Ex. 34, p. 4.10-8.)

According to Applicant, only the intersections identified in its **Table 8.10-4**, **Existing Intersection Capacity Utilization** replicated below, would likely experience impacts due to project-related traffic. As the table indicates, the off ramp from I-710 at Bandini Avenue has a LOS of E. It is operating at a level near capacity during the morning ambient peak traffic hour between 7:00 a.m. and 9:00 a.m. The Bandini and Atlantic intersection, just off the ramp, is operating at a level greater than its capacity as indicated by the LOS of F during the afternoon peak hours between 4:00 p.m. and 6 p.m. (Ex. 1, p. 8.10-21; Ex. 34, p. 4.10-7.)

1. Construction Impacts

Construction of the MGS will take about 16 months and will require a total average daily construction workforce of 108 workers over this period, assuming a single shift and an 8-hour, five day work week. During the peak construction period, an estimated 179 workers will be required daily. Work hours will be either from 7 a.m. to 3:30 p.m., Monday through Friday, or 7 a.m. to 5:30 p.m., four days a week, to allow the workforce to travel to and from the site at off-peak traffic hours. The four-day workweek would substantially reduce traffic impacts during worker commuting hours. (Ex. 1, p. 8.10-5; Ex. 34, p. 4.10-9.)

A worst case commute scenario assumes that during the peak construction period all construction workers will drive to work individually, generating 312

vehicle trips to and from the site each day. (Ex. 1, p. 8.10-5; Ex. 34, 4.10-10.) The available labor pool in the Los Angeles area is substantial and diverse. Thus, the construction workforce is expected to come from local communities surrounding the MGS. (Ex. 34, p. 4.10-10.)

TRAFFIC AND TRANSPORTATION TABLE 8.10-4
Existing Intersection Capacity Utilization
Plus Project Conditions

INTERSECTION	Existing		Existing+ Operation		Existing		Existing+ Construction	
	Typical Street Peak Hour		Typical Street Peak Hour		Project Peak Hour		Project Peak Hour	
	AM	PM	AM	PM	AM	PM	AM	PM
Soto & 37th-Bandini	0.79	0.96 *	0.79	0.96 *	0.75	0.89	0.75	0.89
Soto & Vernon	0.84	0.70	0.84	0.70	0.80	0.65	0.80	0.65
Soto & Leonis	0.76	0.77	0.76	0.77	0.73	0.72	0.73	0.72
Soto & Fruitland	0.83	0.77	0.83	0.77	0.78	0.71	0.80	0.72
Boyle & Leonis	0.54	0.78	0.54	0.78	0.52	0.72	0.52	0.72
Boyle & Fruitland	0.68	0.65	0.69	0.65	0.65	0.60	0.66	0.61
Alcoa Ave & Leonis Blvd.	0.56	0.53	0.56	0.53	0.54	0.49	0.54	0.49
Alcoa Ave & Fruitland	0.43	0.44	0.44	0.44	0.41	0.41	0.41	0.41
Downey & Bandini	0.80	0.88	0.80	0.88	0.76	0.81	0.76	0.81
Downey & Vernon	0.65	0.73	0.65	0.73	0.62	0.68	0.62	0.68
Downey & District-Leonis	0.79	0.78	0.79	0.78	0.75	0.72	0.75	0.72
Downey & Fruitland	0.83	0.66	0.83	0.66	0.79	0.61	0.80	0.63
Atlantic & District Blvd.	0.60	0.86	0.60	0.86	0.58	0.80	0.58	0.82
I-710 SB off-ramp & Bandini	0.91*	0.64	0.91*	0.64	0.87	0.60	0.90	0.61
Atlantic & Bandini	0.71	1.015*	0.71	1.015*	0.67	0.94**	0.69	0.95**

* Unacceptable level of service
** Actual ICUs are 0.937 Existing and 0.946 with project, the increase by project being 0.009, i.e., less than .01. Therefore no significant impact due to project.

Level of Service Ranges:
A = 0.00 - 0.60
B = 0.61 - 0.70
C = 0.71 - 0.80
D = 0.81 - 0.90
E = 0.91 - 1.00
F = Above 1.00

Source: Ex. 1, Table 8.10-4, p. 8.10-21.

Applicant estimated the following traffic pattern distribution for the commuting workforce: 50 percent from the north on the I-710 Freeway; 25 percent from the south along I-710 and the remaining 25 percent is assumed to originate from the area southwest of the site. (Ex. 34, p. 4.10-10.) Exiting from the I-710 Freeway, workers can take either Bandini Boulevard to Downey Road or Soto Street or Atlantic Street to Fruitland Avenue to the plant site. The MGS construction workforce on average would add approximately 81 morning and afternoon vehicle trips and, during the peak construction month, 120 morning and afternoon vehicle trips to this intersection. Given the 7:00 a.m. to 3:30 p.m. construction shift time, these trips would occur outside of the morning and evening peak traffic hours and would not result in a significant increase in volume. (*Ibid.*)

Trucks will be used to deliver some of the heavy equipment, construction materials, and hazardous materials.[74] Most of the trucks delivering materials to the construction site will use either the I-5 or I-710 Freeways. Truck deliveries will be spread throughout the 7:00 a.m. to 3:30 p.m. workday. (Ex. 34, p. 4.10-11.)

The Applicant estimates that 250 major truck deliveries will be made to the project site, with a maximum of 38 truck deliveries per day during the peak month of construction. During the other months of construction, truck traffic is estimated at six trucks per day. This increase is less than one percent for the area roadways. Therefore, the increase in construction truck traffic will not be significant. (Ex. 1, p. 8.10-6; Ex. 34, p. 4.10-11.)

To keep truck traffic to a minimum during construction, Applicant will use rail service for the delivery of heavy equipment. Applicant will arrange for this

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[74] Tanker trucks delivering aqueous ammonia must meet or exceed specifications established by the U.S. Department of Transportation and must use appropriate routing for delivery of such hazardous materials as required by Condition **TRANS-8**. *See* the **Hazardous Materials** section of this Decision for further discussion on the transport of hazardous materials.

equipment to be shipped to the nearest common shipping depot, where it will be off-loaded and transported to the site or to one of the proposed laydown areas by trucks or heavy equipment haulers. Approximately 174 pieces of equipment will be delivered by rail.

Condition of Certification **TRANS-6** requires Applicant to make necessary arrangements with the rail carrier for delivery of heavy equipment. (Ex. 34, p. 4.10-11.) Condition of Certification **TRANS-1** requires Applicant to comply with regulations established by Caltrans and other relevant jurisdictions regarding oversize or heavy weightloads on the roadways.

To ensure that construction traffic does not significantly affect area traffic, Condition of Certification **TRANS-5** requires Applicant to develop a traffic control plan that addresses, *inter alia,* the following site construction issues: the timing of heavy equipment deliveries, redirecting construction traffic, traffic control devices, commute and work hours to avoid traffic peak periods, emergency vehicle access to the site, and temporary travel lane closure.

Condition **TRANS-5** also requires Applicant to implement traffic control measures during construction of linear facilities, such as notification to property owners to be effected, access to properties via temporary access routes, lower speed limits, and adequate illumination. With implementation of a traffic control plan, the limited amount of roadway (500 feet) under construction at any one time and the short duration of construction activity on any portion of the roadways will not cause long-term significant effects on traffic. (Ex. 34, p. 4.10-13.)

The traffic associated with construction of the natural gas, sewer, and reclaimed water pipelines located in roadways could result in decreasing the LOS. Roadway construction will also require encroachment permits from the Cities of Vernon and Huntington Park. Condition of Certification **TRANS-2** requires

Applicant to obtain the necessary encroachment permits for construction activity taking place in the roadway.

2. Operational Impacts

Transportation of hazardous substances to the site during project construction and operation can increase potential roadway hazards. During operations, there will be truck deliveries of aqueous ammonia once a week. (Ex.1, p. 8.10-13; Ex. 34, p. 4.10-16.) Condition **TRANS-8** requires the project owner to follow a preferred or alternate truck route for hazardous materials deliveries and to ensure that appropriate permits and licenses are obtained by the subcontractors responsible for the deliveries.[75] (Ex. 34, p. 4.10-16, Ex. 36, p. 4.10-20.) Furthermore, Condition **TRANS-3** ensures that the project will comply with applicable LORS for hauling hazardous materials. (Ex. 36, p. 4.10-18.)

Traffic impacts associated with project operation consist of incremental commute trips by new employees and periodic truck deliveries. The project will add only 32 new full-time employees. The evidence indicates that even if each employee commutes in a single vehicle during morning and evening peak hours, worker commute trips will be insignificant. (Ex. 34, p. 4.10-15.) Truck deliveries expected during project operation constitute less than one percent of traffic on area roadways and will be insignificant. (*Ibid.*)

The potential exists for vapor plumes to form during operation of the MGS during periods of cold weather or cool wet weather. Although the plume formation can occur during daytime or nighttime, the conditions for the formation of visible

[75] Staff determined that the City's existing truck route from I-5 at the Garfield Exit, west on Telegraph, south on Garfield, west on Slauson to Soto is inappropriate for deliveries of hazardous materials such as aqueous ammonia due to a high number of sensitive receptors along the route including retail and commercial enterprises. Moreover, in the City of Maywood, the LOS for Slauson is F. Staff identified the preferred route for hazmat deliveries along Bandini or District Boulevards. (Ex. 34, p. 4.10-16.) *See* also the **Hazardous Materials** section of this Decision.

plume formation will be most prevalent during the nighttime and early morning hours. (Ex. 34, p. 4.10-5.)

Staff testified that there would be no plume fogging at 100 meters or more from the cooling towers. (Ex. 34, p. 4.10-5.) The local roadways that would be most affected by plume fogging include 50th Street, Seville Avenue, and Leonis Avenue. However, any ground level fogging should not result in a significant impact on traffic because the amount of roadway potentially affected is limited and traffic activity around the MGS mainly serves local industrial activity around the site. To ensure that the effect of the vapor plume is insignificant, Applicant will consult with the City of Vernon traffic engineer to determine if signs are necessary to warn motorists about the potential of fog. (Ex. 34, p. 4.10-15; see Condition of Certification **TRANS-9**.)

3. Cumulative Impacts

The Applicant indicated that no other construction projects are planned in the vicinity of the MGS project site. (Ex. 1, § 8.10.4; Ex. 34, p. 4.10-17.) Therefore, there is no evidence that project-related traffic would result in cumulative impacts to traffic and transportation in the project vicinity. (*Ibid.*)

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission finds as follows:

1. The addition of traffic associated with construction or operation of the MGS Project will not have a significant effect on existing LOS at local intersections in the project vicinity.

2. The construction of the project linears will not result in a significant effect on traffic due to the temporary nature of the construction period and the changing locations for construction activities.

3. 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.

4. Potential cumulative impacts to traffic and transportation resulting from construction and operation of the project will be insignificant.

5. Implementation of the Conditions of Certification, below, will ensure that both construction and operation of the project comply with all applicable laws, ordinances, regulations, and standards on traffic and transportation as identified in the pertinent portions of **Appendix A**.

The Commission, therefore, concludes that construction and operation of the project, as mitigated herein, will not result in any significant, direct, indirect, or cumulative adverse impacts to the local or regional traffic and transportation system, and will comply with all applicable LORS.

CONDITIONS OF CERTIFICATION

TRANS-1 The project owner shall comply with Caltrans and other relevant jurisdictions' limitations on vehicle sizes and weights. In addition, the project owner or its contractor shall obtain necessary transportation permits from Caltrans and all relevant jurisdictions for roadway use.

Verification: In the Monthly Compliance Reports, the project owner shall submit copies of any permits received during that reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least 6 months after the start of commercial operation.

TRANS-2 The project owner or its contractor shall comply with Caltrans and other relevant jurisdictions' limitations for encroachment into public rights-of-way and shall obtain necessary encroachment permits from Caltrans and all relevant jurisdictions.

Verification: In Monthly Compliance Reports, the project owner shall submit copies of permits received during the reporting period. In addition, the project owner shall retain copies of these permits and supporting documentation in its compliance file for at least 6 months after the start of commercial operation.

TRANS-3 The project owner shall ensure that permits and/or licenses are secured from the California Highway Patrol and Caltrans for the transport of hazardous materials.

Verification: The project owner shall include in its Monthly Compliance Reports, copies of all permits/licenses acquired by the project owner and/or subcontractors concerning the transport of hazardous substances.

TRANS-4 During construction of the power plant and all related facilities, the project shall develop a parking and staging plan for all phases of project construction to enforce a policy that all project-related parking occurs on-site or in designated off-site parking areas.

Verification: At least 60 days prior to start of site mobilization, the project owner shall submit the plan to the (City and/or County) for review and comment, and to the CPM for review and approval.

TRANS-5 The project owner shall consult with the City of Vernon and the City of Huntington Park, and prepare and submit to the CPM for approval of a construction traffic control plan and implementation program which addresses the following issues:

- Timing of heavy equipment and building materials deliveries;
- Notification and updates to residences and businesses likely be affected by construction along the linear corridors, including driveway obstructions;
- Redirecting construction traffic with a flagperson;
- Warning signs, lighting, and traffic control device placement if required;
- Scheduling construction work hours and arrival/departure times to avoid peak traffic periods;
- Access for emergency vehicles to the project site;
- Adequate illumination in the work zone when limited visibility likely;
- Temporary travel lane closure with at least one lane open or detour; and
- Access to adjacent residential and commercial property during the construction of all linear facilities.

Verification: At least 30 days prior to site mobilization, the project owner shall provide to the CPM a copy of the referenced documents.

TRANS-6 Prior to the start of site mobilization the project owner shall make all necessary arrangements to allow the use of the existing rail line for delivery of construction material and heavy equipment.

Protocol: The project owner shall reach an agreement with the owner of the rail line to permit the use of the line for the purpose described above.

Verification; At least 30 days prior to the start of site mobilization the project, owner shall reach an agreement with the owner of the rail line for use of the line for the purpose described above and submit a copy of the agreement to the CPM.

TRANS-7 Following construction of the MGS project, the project owner shall meet with the CPM and the Cities of Vernon and Huntington Park to determine if any action is necessary and develop a schedule to complete the repair of any roadways damaged due to project construction.

Prior to start of construction, the project owner shall photograph, videotape or digitally record images of the roadways directly adjacent to the project site and between the laydown area and project site. This would include the following roadway segments: Seville Avenue between the plant site and Fruitland Avenue, 50th Street between Seville Avenue and Boyle Road, Boyle Road between 50th Street and Slauson Avenue, State Street between Slauson Avenue and Randolph Street, and Randolph Street between State Street and Newell Street.

Protocol: The project owner shall provide the Compliance Project Manager (CPM), the Cities of Vernon and Huntington Park with a copy of these images. Prior to start of construction, the project owner shall also notify the Cities of Vernon and Huntington Park about the schedule for project construction. The purpose of this notification is to postpone any planned roadway resurfacing and/or improvement projects until after the project construction has taken place and to coordinate construction related activities associated with other projects.

Verification: Within 30 days after completion of the project, the project owner shall meet with the CPM and the Cities of Vernon and Huntington Park to determine and receive approval for the actions necessary and schedule to complete the repair of identified sections of public roadways to original or as near original condition as possible. Following completion of any regional road improvements, the project owner shall provide to the CPM a letter from the Cities

of Vernon and Huntington Park stating their satisfaction with the road improvements.

TRANS-8 The City of Vernon shall only use the preferred and alternate truck travel routes for deliveries of aqueous ammonia to the MGS site. The preferred route shall be from Interstate 710, exiting at the Bandini Boulevard. Trucks will then travel west along Bandini Boulevard, south on Soto Avenue, and finally west on 50th Street to the MGS. The City shall use this route unless it notifies the CPM otherwise and the CPM approves.

In the event that conditions are such that the City and CPM determine that the preferred route is not the safest route, the City shall direct aqueous ammonia deliveries to the MGS along the following alternative route. Delivery trucks shall travel along Interstate 5, exiting at Garfield Avenue. Trucks will then travel west along Telegraph Road, south on Garfield Avenue, west on Bandini Boulevard, south on Soto Avenue, and finally west on 50th Street to the MGS.

The City may re-route ammonia trucks from the alternative route to another alternative route not yet identified if the City and the CPM agree that another alternative route is the safest route.

Verification: The final preferred and alternative truck travel routes for aqueous ammonia delivery will be submitted to the Compliance Project Manager for approval 30 days prior to the first delivery of aqueous ammonia to the MGS. During operations, the City may alter the final truck travel route only upon prior approval of the CPM.

TRANS-9 Before start-up of the MGS, the project owner shall consult with the CEC CPM and the City of Vernon to determine the necessity for warning signage and the locations for sign placement to inform motorists about the possibility of ground level fog on 50th street, Seville Avenue and Leonis Avenue.

Verification: At least 30 days prior to project start up, the project owner shall meet with the CPM and the City of Vernon to determine whether permanent signage is necessary to inform motorists about the possibility of ground level fog due to project operations, and if so, to establish an installation date. No later than 15 days after installation, the project owner shall notify the CPM in writing that the signs have been installed.

C. VISUAL RESOURCES

Visual resources are the natural and cultural features of the landscape that contribute to the visual character or quality of the environment. CEQA requires an examination of a project's visual impacts on the environment which, in this case, would focus on the project's potential to cause substantial degradation to the existing visual character of the site and its surroundings. (Cal. Code of Regs., tit. 14, § 15382, Appendix G.)

SUMMARY AND DISCUSSION OF THE EVIDENCE

The proposed MGS will be located on approximately 3.4 acres of vacant land at the City of Vernon's existing Station A power plant, in a predominantly industrial setting. The existing generating units of Station A are located within a 56-foot tall, concrete building. Ten 90-foot tall exhaust stacks protrude from the top of the building. A four-cell cooling tower and an electrical substation also occupy the Station A site. (Ex. 34, p. 4.12-3.)

Vernon is a primarily industrial city, with a few remaining pockets of residential uses, including five residences east of the MGS site on Fruitland Avenue east of Alcoa Avenue and an apartment complex on 50th Street and Downey Road. To the north of the project site are railroad tracks and industrial warehouses. Seville Avenue runs west of the site, and more railroad tracks and industrial warehouses are situated on the opposite side of the roadway. The Orval Kent Food Processing facility is located immediately south of the site across East 50th Street. Staff's testimony indicated that water vapor plumes were observed emanating from a vent at the top of the Orval Kent facility. (Ex. 34, p. 4.12-3.)

1. Methodology

The City of Vernon General Plan and Zoning Ordinances establish applicable visual resource management policies, including the establishment and maintenance of landscaped areas. (Ex. 34, pp. 4.12-1 and 4.12-14.)

Due to intervening structures and distance, MGS project structures will not be visible from sensitive viewing locations, including the few residences in Vernon and the residential areas of Huntington Park and Maywood to the south and east. Project structures will be visible to travelers along nearby roadways, including East 50th Street, Seville Avenue, Leonis Avenue, and Soto Street. These roadways in the vicinity of the MGS site are all industrial in character. (Ex. 34, p. 4.12-3.)

As a basis for evaluating project-related visual impacts, the parties identified key observation points (KOPs) from which photographs were taken to document existing conditions and serve as a basis for evaluating project-related visual impacts.[76] KOPs were selected to be representative of the most critical locations from which a project would be seen. Staff and Applicant were able to identify only one sensitive viewing location that would have views of the project structures. (Ex. 34, p. 4.12-4.) However, subsequent to the filing of the AFC, a warehouse was constructed between the KOP area and the project site. Consequently, the new warehouse building screens the project and sensitive viewers cannot see the project from that KOP. (*Ibid.)*

To complete the visual resources analysis, Applicant chose another KOP to represent residential viewers' exposure to the project's visible plumes. The new KOP was located about 3,000 feet south of the project site in Huntington Park along East 58th Street (between Seville Avenue and Soto Street). **Visual**

[76] The use of KOPs or similar view locations is common in visual resource analysis. The U.S. Bureau of Land Management and the U.S. Forest Service use such an approach.

Resources Figure 4, replicated below from Staff's testimony, shows the location and view direction of the East 58th Street KOP. (*Ibid*.)

To assess the existing visual setting of the East 58th Street KOP, Staff considered the following elements: visual quality, viewer concern, and viewer exposure. These elements combine into a rating of ***overall visual sensitivity*** or the susceptibility of a view area to impacts due to visual change. (Ex. 34, p. 4.12-4.)

Approximately 30 residential dwellings exist along East 58th Street; however, many of these will not have a direct, or unobstructed view of the project. There are approximately 100 residences along East 57th Street and another 11 residences along East 56th Street. For the majority of these residences, either the primary view direction is to the south, or existing structures or vegetation block views in the direction of the site. (Ex. 34, p. 4.12-5.)

Staff indicated that although visual concern was rated high because the viewers are residential, visual quality in the direction of the site is low. A litter-strewn street and weed filled vacant lot surrounded by a chain link fence occupy the foreground and middleground of the view. Power poles and lines and a large water tower also detract from the quality of the view. (Ex. 34, p. 4.12-4.) Viewer exposure was rated moderate to high because the plume will be visible to a varying amount to a moderate number of residential viewers in the KOP area and plumes are typically present during the early morning and evening hours when residents are expected to be home. Considering the low visual quality, high viewer concern, and moderate to high viewer exposure, Staff found the overall visual sensitivity at the KOP would be moderate. (*Id*. at p. 4.12-6.)

2. Potential Impacts

Construction of the power plant and linear facilities will cause temporary visual impacts due to the presence of equipment, materials, excavated piles of dirt, and workforce. Construction activities include site clearing and grading, trenching, construction of actual facilities, and cleanup and restoration of the site and rights-of-way. The sites identified for construction staging, laydown, fabrication and parking areas are industrial in character and have low visual quality. (Ex. 34, p. 4.12-7.)

Construction of the 1,300-foot long natural gas and 1,300-foot wastewater discharge pipelines is expected to last about one month. The 1.8-mile long reclaimed water supply pipeline will interconnect with an existing reclaimed water pipeline at Randolph and Newell Streets. The route will traverse industrial, commercial, and residential areas. (Ex. 34, p. 4.12-7.)

The visual impacts of construction will not be significant because power plant construction will occur in the context of a low visual quality industrial setting in which large construction equipment and the visual chaos associated with construction will not be conspicuously out of character, and because pipeline construction activities will be transitory and will primarily occur within industrial areas. Therefore, no significant adverse visual impacts are anticipated.

Construction activities will occur in the context of the low visual quality industrial setting in which large construction equipment and the visual chaos associated with construction will not be conspicuously out of character. Since all potential views of these activities are located in the surrounding industrial zone and are transitory in nature, no significant adverse visual impacts are anticipated. (Ex. 34, p. 4.12-7.)

After construction of the project, Applicant will install appropriate landscaping, fencing, and screening around the site to shield views of the project components from passersby on nearby roadways. Conditions of Certification **VIS-3** and **VIS-4** ensure that the project will comply with applicable LORS regarding landscape and screening standards. Applicant will also paint project components to reduce contrast with surrounding buildings and structures. Condition **VIS-2** requires the Applicant to use gray colors to blend with the existing Station A facilities.

Visible Plumes

Based on Staff's modeled analysis of cooling tower plumes, visible plumes will mainly occur during the cold weather or cool wet weather months. (Ex. 34, pp. 4.12-7, 4.12-8.) Additionally, Staff testified that visible plumes can occur during the daytime or nighttime; however, the meteorological data reviewed indicates that conditions for visible plume formation are more prevalent during nighttime and early morning hours. The actual frequency of occurrence is weather dependent and will vary from year to year. Visual plumes from the cooling tower are predicted at a maximum temperature, for both duct firing and no duct firing, of 69° Fahrenheit (F) when the relative humidity is 100 percent. (Ex. 34, p. 4.12-8.)

Staff uses a plume frequency of 10 percent of seasonal (November through April) daylight no rain/no fog (SDNRNF) hours as an initial plume impact threshold trigger; if exceeded, the analysis is further refined by performing a high visual contrast hours analysis of the SDNRNF plume hours. According to Staff, it is reasonable to assume that the actual plume frequency would be somewhere between 22.8 percent and 49.6 percent because duct firing is typically used to increase generating capacity during periods of high electrical demand, which normally do not occur during the cold weather periods most favorable to plume formation. (Ex. 34, p. 4.12-9.)

Because Staff found the cooling tower plume frequency would exceed 10 percent of SDNRNF hours, Staff refined its analysis further by performing a high visual contrast hours analysis of the SDNRNF plume hours. Those results indicated that a visual impact analysis of the cooling tower plumes was warranted. (Ex. 34, p. 4.12-10.)

Staff assessed the amount of visual change that would result from the project's cooling tower plumes and determined that the overall visual change that would be experienced at the KOP would be low to moderate due to the plumes' moderate contrast, low to moderate dominance, and low view blockage. When considered within the context of moderate overall visual sensitivity, the low to moderate visual change perceived at this KOP would result in an adverse perceptible change but not a significant impact. Staff therefore concluded that unabated cooling tower plumes would not cause significant adverse visual impacts. (Ex. 34, pp. 4.12-9 to 4.2-12.)

Staff anticipates low frequency of steam plumes from the HRSGs due to the high exhaust temperatures anticipated by the Applicant. According to Staff, these exhaust temperatures are as much as 60°F or more higher than other combined cycle projects currently before the Energy Commission. The predicted maximum temperature for a visible plume is 45°F when the relative humidity is 100 percent. Since that meteorological event is uncommon in the Vernon vicinity, visible plumes from the HRSGs will rarely occur and are well below 10 percent frequency for SDNRNF hours. Therefore, unabated HRSG plumes are not expected to cause significant visual impacts under the anticipated operating conditions and no further impact analysis was performed for the HRSG plumes. (Ex. 34, pp. 4.12-8, 4.12-9.)

Nighttime Lighting and Light or Glare

Given the industrial and highly urbanized nature of the site and immediate project area, and because project structures and lighting would either not be visible or not substantially visible from sensitive viewing locations due to intervening structures and distance, light and glare impacts will not be significant. Furthermore, Applicant has proposed measures to reduce the impacts of nighttime lighting and glare, including hooded external lights, lower wattage to minimize brightness, and motion sensors to control the extent of lighting. Staff generally agreed with the Applicant's proposed mitigation measures and these measures are incorporated into Conditions of Certification **VIS-1** (lighting controls) and **VIS-2** (structure painting). (Ex. 34, pp. 4.12-12, 4.12-15, 4.12-16.)

3. Cumulative Impacts

Cumulative impacts to visual resources could occur where project plumes occupy the same field of view as other existing plumes. According to Staff, the nearest existing plume to the KOP area emanates from the Orval Kent food processing facility located at East 50th Street and Soto Street. Staff testified that this plume could be up to 100 feet tall or higher during a very cold winter day. (Ex. 34, p. 4.12-13.) A plume 100 feet tall will be barely visible from the KOP area due to intervening structures and distance, and would most likely merge together with the MGS plume and appear as one plume because of their close proximity to each other. Thus, the MGS cooling tower plume will not cause cumulative visual impacts. (*Ibid*.)

FINDINGS AND CONCLUSIONS

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

1. The MGS Project will be located in an industrial zone of the City of Vernon.

2. Power Plant construction activities will occur in the industrial zone where large construction equipment and the visual chaos associated with construction are not conspicuously out of character for the area. Pipeline construction will be transitory and will primarily occur within industrial areas

3. The project will not result in significant adverse visual impacts at the key observation point (KOP)

4. The MGS does not substantially degrade the existing visual character or quality of the site and its industrial surroundings since the design of the MGS will be consistent with other industrial features in the area.

5. The MGS does not create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

6. The visual plume created by the cooling tower and HRSG stack will not cause significant adverse visual impacts.

7. Implementation of the proposed mitigation measures and the Conditions of Certification, listed below, will reduce the project's visual impacts to less than significant levels in the area.

8. Implementation of the Conditions of Certification, below, will ensure that the MGS complies with all applicable laws, ordinances, regulations, and standards identified in the pertinent portions of **Appendix A** in this Decision.

The Commission concludes that implementation of the mitigation measures contained in the Conditions of Certification and otherwise described in the evidentiary record ensures that the MGS will not result in significant adverse impacts to visual resources.

CONDITIONS OF CERTIFICATION

VIS-1 The project owner shall design and install all permanent lighting such that light bulbs and reflectors are not visible from public viewing areas; lighting does not cause reflected glare; and illumination of the project, the vicinity, and the nighttime sky is minimized. To meet these requirements the project owner shall ensure that:

a) Lighting shall be designed so exterior light fixtures are hooded, with lights directed downward or toward the area to be illuminated and so that

backscatter to the nighttime sky is minimized. The design of the lighting shall be such that the luminescence or light source is shielded to prevent light trespass outside the project boundary;

b) All lighting shall be of minimum necessary brightness consistent with worker safety;

c) High illumination areas not occupied on a continuous basis (such as maintenance platforms) shall have switches or motion detectors to light the area only when occupied;

d) A lighting complaint resolution form (following the general format of that in Appendix VR-1 attached hereto) shall be used by plant operations to record all lighting complaints received and document the resolution of those complaints. All records of lighting complaints shall be kept in the on-site compliance file.

Verification: At least 60 days prior to ordering any permanent exterior lighting, the project owner shall submit to the CPM for review and comment written documentation describing the lighting control measures and fixtures, hoods, shields proposed for use, and incorporate the CPM's comments in lighting equipment orders.

Prior to first turbine roll, the project owner shall notify the CPM that the lighting has been completed and is ready for inspection. If the CPM notifies the project owner that modifications to the lighting are needed to minimize impacts, within 30 days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed.

The project owner shall report any complaints about permanent lighting and provide documentation of resolution in the Annual Compliance Report, accompanied by any lighting complaint resolution forms for that year.

VIS-2 The project owner shall paint or treat the surfaces of all project structures and buildings visible to the public in a gray color to blend with the existing Station A building. Surfaces shall be treated with finishes that minimize glare. The project owner shall ensure proper treatment maintenance for the life of the project.

Verification: At least 30 days prior to the start of commercial operation, the project owner shall notify the CPM that all buildings and structures are ready for inspection. The project owner shall provide a status report regarding treatment maintenance in the Annual Compliance Report.

VIS-3 The project owner shall plant trees along the east side of the MGS site to enhance views of the new power plant from Soto Street, consistent with

the City of Vernon General Plan policy 1.3. The project owner shall ensure proper maintenance of the trees for the life of the project.

Verification: At least 30 days prior to the start of commercial operation, the project owner shall notify the CPM that the trees are ready for inspection. The project owner shall provide a status report regarding tree maintenance in the Annual Compliance Report.

VIS-4 The project owner shall ensure that any outdoor activities and storage at the MGS site are not visible from public rights-of-way, consistent with the City of Vernon Zoning Ordinance, Article III, Section 26.3.5-4(C). Screening materials may consist of fences covered with polyethylene screening strips, industrial fabric, or other opaque (or appears essentially opaque when viewed from public rights-of-way) material. The color of the screening material shall minimize visual intrusion and contrast by blending with the landscape.

Verification: At least 60 days prior to ordering any screening materials, the project owner shall submit to the CPM for review and comment written documentation describing the type and color of screening material proposed for use, and incorporate the CPM's comments in screening material orders.

Prior to start of commercial operation, the project owner shall notify the CPM that outdoor activities and storage have been screened and are ready for inspection. If the CPM notifies the project owner that modifications to the screening are needed to ensure compliance with the ordinance, within thirty (30) days of receiving that notification the project owner shall implement the modifications and notify the CPM that the modifications have been completed.

Chapter 2 Appendix VR – 1: Lighting COMPLAINT RESOLUTION FORM

LIGHTING COMPLAINT RESOLUTION FORM

Malburg Generating Station City of Vernon, Los Angeles County, California
Complainant's name and address: Phone number:
Date complaint received: Time complaint received:
Nature of lighting complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted:
Description of corrective measures taken: Complainant's signature: _____ Date:
Approximate installed cost of corrective measures: $ Date installation completed: Date first letter sent to complainant: _____(copy attached) Date final letter sent to complainant: _____(copy attached)
This information is certified to be correct: Plant Manager's Signature:

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

D. NOISE AND VIBRATION

The construction and operation of any power plant project will create noise. The character and loudness of this noise, the times of day or night during which it is produced, and the proximity of the project to sensitive receptors combine to determine whether project noise will cause significant adverse impacts to the environment. In addition, operation of the facility may generate vibration and acoustic noise that could affect adjacent properties. In this technical area, the Commission evaluates whether noise produced by project-related activities during operation will be sufficiently mitigated to comply with applicable law.

Summary of the Evidence

Laws that regulate noise disturbance in the property vicinity are found in the City of Vernon Noise Element and the City of Huntington Park Municipal Code.[77] The City of Vernon Noise Element defines exterior noise limits for single-occupancy dwellings in high-density population areas in terms of noise levels that are not to be exceeded. Acceptable noise levels are 70 dBA[78] during the daytime, 65 dBA for evening periods, and 62 dBA during the night. The daytime period is defined as those hours from 7 a.m. to 7 p.m., the evening is defined as 7 p.m. to 10 p.m., and the night period is defined as the hours from 10 p.m. to 7 a.m. (Ex. 34, p. 4.6-4.) Neither the City of Vernon nor the City of Huntington Park specifies noise limits for construction activities. (Ex. 1, p. 8.5-12, Ex. 34, p. 4.6-4.)

CEQA Guidelines set forth characteristics of noise impacts that may indicate potentially significant effects from project-related noise, such as “a substantial

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[77] The City of Huntington Park is adjacent to the City of Vernon. Section 5-11 of its Municipal Code limits noise that creates "a Nuisance". An increase in the ambient of more than 5 dBA will be noticeable by the public and thus could be considered a nuisance. (Ex. 34, p. 4.6-4.)

[78] Staff’s Noise Tables Appendices 1, 2, 3, and 4 replicated at the end of this section, explain the definitions of these and other noise measurement terms.

permanent increase in ambient noise levels in the project vicinity above levels existing without the project." (Cal. Code Regs., tit. 14, § 15000 et seq., Appendix G, Section XI.) In accordance with this standard, Staff uses the significance threshold of 5 dBA L_{90} when project-related noise emissions exceed existing ambient noise levels at the nearest sensitive receptor. (Ex. 34, p. 4.6-3.)

1. The Setting

The properties adjacent to the project site are the Station A power plant and other industrial uses. Under the City's Noise Element, facilities in areas zoned "General Industrial" cannot exceed 75 dBA (CNEL) at their property line. The City of Huntington Park limits outdoor operational noise to 65 dBA (CNEL) at noise-sensitive receptors. (Ex. 1, p. 8.5-12.) A population of 8,871 resides within a one-mile radius of the site. The three nearest sensitive residential receptors are approximately 750 feet (R2), 1,600 feet (R3), and 3,500 feet (R1) from the site as shown in Table 2. (Ex. 34, p. 4.6-4, 4.6-5.)

Existing noise levels taken at the nearest sensitive receptors are shown below in **Noise Table 2** replicated from Staff's testimony. (Ex. 1, p. 8.5-14; Ex. 34, p. 4.6-5.)

Noise: Table 2 - Long-Term Noise Measurement Summary—AFC

Monitoring Location	CNEL	Average L_{90} in dBA	
		Day	Night
R1 – Furlong Place	(64)	(55)	(49)
R2 – La Villa Basque (Apt.)	(63)	(54)	(48)
R3 – 53rd St. Residences	60	53	47

(Ex. 1, Table 8.5-1; Ex. 34, p. 4.6-5.) ( ) = Estimated from samples.

Although some residents will temporarily be affected by construction noise, the reclaimed water pipeline traverses mostly industrial areas. The natural gas

pipeline and power lines are not near any noise sensitive receptors. (Ex. 34, p. 4.6-5.)

2. Potential Impacts

The City of Vernon and the City of Huntington Park are exposed to existing high levels of noise emanating from industrial facilities, trucks, automobiles, and railroad operations. (Ex. 1, p. 8.5-3.)

a. Construction

Construction of the power plant will cause temporary noise impacts. As noted above, the City of Vernon Noise Element does not specifically address construction noise. (Ex. 1, p. 8.5-12; Ex. 34, pp. 4.6-4, 4.6-6.)

Applicant provided data on the anticipated construction noise levels and equipment usage for each phase of construction. (Ex. 1, § 8.5.2, Table 8.5-2.) During pipeline construction, predicted sound levels for this activity at the nearest residence will be between 43 and 80 dBA. The highest levels will be produced during construction of the reclaimed water pipeline along Boyle Avenue and Randolph Street. Construction will be generally limited to the hours of 7 a.m. to 4 p.m. Most of the remaining pipeline construction will produce noise levels below the average hourly daytime ambient L_{eq} levels and, therefore, should not result in a significant noise impact. (Ex.1, Table 8.5-3) (For an explanation of noise terminology, *see* Noise Table Appendix A-1 at the end of this section.)

Noise levels produced by construction of the power plant will increase the average hourly L_{eq} values by less than 5 dBA. Because noise from construction activity and related traffic are subject to the Conditions of Certification, and are of limited duration, potential construction noise impacts to receptors in the MGS project area are considered to be less than significant. Furthermore, most of the

power plant construction, and all but a small amount of pipeline construction, will be limited to daytime hours as required in Condition of Certification **NOISE-8**.[79] There are no pile driving operations planned for this project. (Ex. 34, pp. 4.6-6.)

Typically, the loudest noise encountered during construction, inherent in building any project incorporating a steam turbine, is created by the steam blows, which are necessary to flush piping and tubing of accumulated debris prior to start-up. A series of short steam blows, lasting a few minutes, could be performed several times daily over a period of two to three weeks. These high-pressure steam blows could produce noise as loud as 130 dBA at a distance of 100 feet. (Ex. 34, p. 4.6-7.)

In recent years, a new, quieter steam blow process, variously referred to as QuietBlow™ or Silentsteam™, has become popular. This method utilizes lower pressure steam over a continuous period of about 36 hours. Resulting noise levels reach only about 80 dBA at 100 feet. Thus, steam blow noise at nearby receptors is predicted to be similar to the ambient background noise level, and thus barely noticeable. (Ex. 34, p. 4.6-7.)

Although Applicant did not address the steam blow process in its testimony, Staff indicated that a low-pressure steam blow process must be utilized for this project to minimize the possible disruption to the public and nearby workers. (Ex. 34, p. 4.6-7.) Condition of Certification **NOISE-4** requires Applicant to employ a low-pressure steam blow process that will not produce a noise level greater than a combined noise level of 52 dBA at the nearest sensitive receptor (Site R3). (Ex. 34, p. 4.6-12.) Condition of Certification **NOISE-5** requires a notification process to make neighbors and businesses aware of the steam blow schedule. (Ex. 34,

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[79] The pipeline construction at the intersection of Fruitland and Seville Avenue must be performed at night to avoid traffic congestion. This will entail about 3 nights of activity. (Ex. 34, pp. 4.6-6.)

pp. 4.6-12, 4.6-13.) Implementation of these Conditions should render the steam blow process tolerable to the project's neighbors.

Project workers are susceptible to injury from excessive noise during construction-related activities. (Ex. 45, p. 4.6-7.) Condition **NOISE-3** requires the project owner to implement a noise control program for construction workers in accordance with Cal/OSHA standards.[80]

b. Operations

During its operating life, the MGS represents essentially a steady, continuous noise source day and night. Occasional brief increases in noise levels would occur as steam relief valves open to vent pressure, or during startup or shutdown as the plant transitions to and from steady-state operation. The primary noise sources anticipated from the new facility include the cooling towers, the heat recovery steam generator (HRSG), and the evaporator pump. Secondary noise sources are anticipated to include auxiliary pumps, ventilation fans, motors, valves and gas compressors. (Ex. 34, p. 4.6-8.)

Using data from the Applicant's noise survey, Staff found that in the area of MGS, daytime noise levels are sometimes lower than those measured at night, most likely due to truck traffic on nearby Interstate Highway 5. Since nighttime noise levels impact people when sleeping, the nighttime average L_{90} was selected as the background ambient. (Ex. 34, p. 4.6-8.) Based on the results of the noise survey, ambient L_{90} values were assumed as follows:

[80] Regulations adopted by the federal Occupational Safety and Health Administration (OSHA) and the state Cal/OSHA protect workers from noise-related health and safety hazards. (29 C.F.R., § 1910 et seq.; Cal. Code of Regs., tit. 8, § 5095 et seq.)

Noise: Table 3 — Assumed Average Ambient Background Levels

Monitoring Site	Average Nighttime L_{90} (dBA)
R1 — Furlong Place	(49)
R2 — La Villa Basque (Apt.)	(48)
R3 — 53rd St. Residences	47

( ) = Estimated from samples (Ex. 34, p. 4.6-8.)

The noise level from the power plant was modeled to evaluate whether the new plant would contribute to an incremental increase in noise levels at the nearest residential receptors. The projected noise level at the closest residential receptors is a constant hourly L_{eq} of 35 dBA to 48 dBA. Based on the results of the noise survey, the project's constant noise level would be less than the assumed average ambient L_{90} of 47 to 49 dBA, resulting in composite noise levels at the three receptors as shown in **Noise: Table 4**. (Ex. 34, 4.6-8, 4.6-9.)

Noise: Table 4 — Resultant Noise Levels Due to Project Operation

Monitoring Site	Resultant Level L_{eq} (dBA)	Increase at Receptor L_{eq} (dBA)
R1 — Furlong Place	49	0
R2 — La Villa Basque (Apt.)	51	3
R3 — 53rd St. Residences	49	2

(Ex. 34, p. 4.6-9.)

With these small increases, project noise will barely be noticeable during the quietest periods of the night and thus represents an insignificant impact. (Ex. 34, p. 4.6-9.)

To ensure that no strong tonal noises or hissing sounds are present and that intermittent noises are mitigated, Condition of Certification **NOISE-6** requires the project be designed to blend noise levels and muffle equipment to prevent legitimate complaints from affected receptors. (Ex. 34, pp. 4.6-8, 4.6-13.)

In order to protect plant operating and maintenance personnel from noise hazards, Condition **NOISE-7** requires the project owner to conduct an occupational noise survey, identify necessary protective measures for onsite employees during project operation, and implement a hearing conservation program. (Ex. 34, p. 4.6-13.)

Regarding potential cumulative noise impacts, Applicant identified only one planned project about 0.6 miles from the MGS site. (Ex. 1, § 8.5.3) However, this project will be completed before MGS construction begins, so there will be no cumulative construction noise impacts. An elementary school is planned between 57th and 58th Streets, about 3,000 feet south of the MGS. The resultant noise level at this location is predicted to be less than 35 dBA and thus would not result in a significant impact. (Ex. 1, Table 8.5-8; Ex. 34, p. 4.6-10.)

FINDINGS AND CONCLUSIONS

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

1. Construction and operation of the MGS will not increase noise levels significantly above existing ambient levels in the surrounding community.

2. Construction noise levels are temporary and transitory in nature and will be mitigated to the extent feasible by sound reduction devices, limiting construction to daytime hours in accordance with local noise control laws and ordinances, and providing notice to nearby residences and businesses, as appropriate.

3. The nearest sensitive receptor to the MGS project is located 750 feet southwest of the project site.

4. Noise reduction measures will be incorporated into project design to ensure that operation noise levels are maintained at Leq 48 dBA measured at any residence, which avoids significant adverse impacts by limiting any noise increase to 5 dBA or less above background levels.

5. The project owner will implement measures to protect workers from injury due to excessive noise levels by complying with pertinent Cal/OSHA regulations.

6. There is no evidence of potential cumulative impacts due to project-related noise.

7. The project owner will implement the mitigation measures identified in the evidentiary record and the Conditions of Certification to ensure that project-related noise emissions do not cause significant adverse impacts to sensitive noise receptors.

The Commission concludes that implementation of the following Conditions of Certification ensure that MGS will comply with the applicable laws, ordinances, regulations, and standards on noise and vibration as set forth in the pertinent portions of **Appendix A** of this Decision.

CONDITIONS OF CERTIFICATION

NOISE-1 At least 15 days prior to the start of ground disturbance, the project owner shall notify all residents, business owners, and commercial operators within one mile of the site, by mail or other effective means, of the commencement of project construction. This notification must include residents of Vernon and Huntington Park. At the same time, the project owner shall establish a telephone number for use by the public to report any undesirable noise conditions associated with the construction and operation of the project. If the telephone is not staffed 24 hours per day, the project owner shall include an automatic answering feature, with date and time stamp recording, to answer calls when the phone is unattended. This telephone number shall be posted at the project site during construction in a manner visible to passersby. This telephone number shall be maintained until the project has been operational for at least one year.

Verification: The project owner shall transmit to the Energy Commission Compliance Project Manager (CPM) in the first Monthly Construction Report following the start of ground disturbance, a statement, signed by the project manager, attesting that the above notification has been performed, and describing the method of that notification. This statement shall also attest that the telephone number has been established and posted at the site.

NOISE-2 Throughout the construction and operation of the project, the project owner shall document, investigate, evaluate, and attempt to resolve all project related noise complaints.

The project owner or authorized agent shall:

- Use the Noise Complaint Resolution Form (see Exhibit 1), or functionally equivalent procedure acceptable to the CPM, to document and respond to each noise complaint;
- Attempt to contact the person(s) making the noise complaint within 24 hours;
- Conduct an investigation to determine the source of noise related to the complaint;
- If the noise is project related, take all feasible measures to reduce the noise at its source; and
- Submit a report documenting the complaint and the actions taken. The report shall include a complaint summary, including final results of noise reduction efforts; and, if obtainable, a signed statement by the complainant stating that the noise problem is resolved to the complainant's satisfaction.

Verification: Within 30 days of receiving a noise complaint, the project owner shall file a copy of the Noise Complaint Resolution Form, or similar instrument approved by the CPM, with the City of Vernon Director of Community Services & Water and the City of Huntington Park Senior Planner and with the CPM, documenting the resolution of the complaint. If mitigation is required to resolve a complaint, and the complaint is not resolved within a 30-day period, the project owner shall submit an updated Noise Complaint Resolution Form when the mitigation is finally implemented.

NOISE-3 Prior to the start of ground disturbance, the project owner shall submit a noise control program to the CPM for review. The noise control program shall be used to reduce employee exposure to high noise levels during construction and also to comply with applicable OSHA and Cal-OSHA standards.

Verification: At least 30 days prior to the start of ground disturbance, the project owner shall submit to the CPM the above referenced program. The project owner shall make the program available to OSHA upon request.

NOISE-4 The project owner shall employ a low-pressure continuous steam blow process. The project owner shall submit a description of this process, with expected noise levels and projected period of execution, to the CPM, who shall review the proposal with the objective of ensuring that the resulting steam blow noise does not produce a combined noise level greater than 52 dBA at Site R3 where the average nighttime ambient L_{90} value is 47 dBA. If the low-pressure process is approved by the CPM, the project owner shall implement it in accordance with the requirements of the CPM.

Verification: At least 15 days prior to any steam blow activity, the project owner shall submit to the CPM drawings or other information describing the process, including the noise levels expected and the projected time schedule for execution of the process.

NOISE-5 At least 15 days prior to the first steam blow, the project owner shall notify all residents, business owners, and commercial operators within one mile of the site, of the planned activity, and shall make the notification available to other area residents in an appropriate manner. The notification may be in the form of letters to the area residences, telephone calls, fliers or other effective means. The notification shall include a description of the purpose and nature of the steam or air blow(s), the proposed schedule, the expected sound levels, and the explanation that it is a one-time operation and not a part of normal plant operations.

Verification: Within 5 days of notifying these entities, the project owner shall send a letter to the CPM confirming that they have been notified of the planned steam or air blow activities, including a description of the method(s) of that notification.

NOISE-6 The project design and implementation shall include appropriate noise mitigation measures adequate to ensure that the noise level produced by operation of the power plant will not exceed an hourly L_{eq} of 48 dBA measured at any residence. Steam relief valves shall be adequately muffled to preclude noise that draws legitimate complaints.

A. Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct a 25-hour community noise survey at Locations R1, R2, and R3 as a minimum. The noise survey shall also include short-term measurement of one-third octave band sound pressure levels at each of the above locations to ensure that no new pure-tone noise components have been introduced.

B. If the results from the noise surveys (pre-construction vs. operations) indicate that the noise level due to the plant

operations exceeds 48 dBA at any residence for any given hour during the 25-hour period, mitigation measures shall be implemented to reduce noise to a level of compliance with these limits.

C. If the results from the noise surveys (pre-construction vs. operations) indicate that pure tones are present, mitigation measures shall be implemented to eliminate the pure tones.

Verification: Within 15 days after completing the post-construction survey, the project owner shall submit a summary report of the survey to the City of Vernon Director of Community Services and Water, and to the CPM. Included in the post-construction survey report will be a description of any additional mitigation measures necessary to achieve compliance with the above listed noise limits, and a schedule, subject to CPM approval, for implementing these measures. Within 15 days of completion of installation of these measures, the project owner shall submit to the CPM a summary report of a new noise survey, performed as described above and showing compliance with this condition.

NOISE-7 Within 30 days of the project first achieving a sustained output of 80 percent or greater of rated capacity, the project owner shall conduct an occupational noise survey to identify the noise hazardous areas in the facility. The survey shall be conducted by a qualified person in accordance with the provisions of Title 8, California Code of Regulations, sections 5095-5099 (Article 105) and Title 29, Code of Federal Regulations, section 1910.95. The survey results shall be used to determine the magnitude of employee noise exposure. The project owner shall prepare a report of the survey results and, if necessary, identify proposed mitigation measures that will be employed to comply with the applicable California and federal regulations.

Verification: Within 30 days after completing the survey, the project owner shall submit the noise survey report to the CPM. The project owner shall make the report available to OSHA and Cal-OSHA upon request.

NOISE-8 Noisy construction or demolition work shall be restricted to the times of day delineated below with one exception as noted below:

Weekdays	7 a.m. to 7 p.m.
Weekends and Holidays	8 a.m. to 5 p.m.

Haul trucks and other engine-powered equipment shall be equipped with adequate mufflers. Haul trucks shall be operated in accordance with

posted speed limits. Truck engine exhaust brake use shall be limited to emergencies.

Horizontal drill rigs may be operated on a continuous basis, provided that the rigs are fitted with adequate mufflers and engine enclosures, and that the rigs are shielded from view of residences by berms, canal banks or other suitable barriers.

Due to heavy daytime traffic, Applicant may perform construction at the intersection of Fruitland and Seville during nighttime hours over a period of approximately 3 days. The schedule for this activity shall be provided in a notice to nearby residents and businesses as defined in **NOISE-1** above.

Verification: The project owner shall transmit to the CPM in the first Monthly Construction Report a statement acknowledging that the above restrictions will be observed throughout the construction of the project.

NOISE COMPLAINT RESOLUTION FORM
MALBURG GENERATING STATION, Docket No. 01-AFC-25(C)

NOISE COMPLAINT LOG NUMBER
Complainant's name and address: Phone number:
Date complaint received: Time complaint received:
Nature of noise complaint:
Definition of problem after investigation by plant personnel: Date complainant first contacted: _____
Initial noise levels at 3 feet from noise source _____ dBA Date: _____ Initial noise levels at complainant's property: _____ dBA Date: _____ Final noise levels at 3 feet from noise source: _____ dBA Date: _____ Final noise levels at complainant's property: _____ dBA Date: _____
Description of corrective measures taken: Complainant's signature: _____ Date: _____
Approximate installed cost of corrective measures: $ _____ Date installation completed: _____ Date first letter sent to complainant: _____ (copy attached) Date final letter sent to complainant: _____ (copy attached)
This information is certified to be correct: Plant Manager's Signature: _____ Date: _____

Noise Table Appendix 1 Definition of Some Technical Terms Related to Noise	
Terms	**Definitions**
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micronewtons per square meter).
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a Sound Level Meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this testimony are A-weighted.
L_{10}, L_{50}, & L_{90}	The A-weighted noise levels that are exceeded 10%, 50%, and 90% of the time, respectively, during the measurement period. L_{90} is generally taken as the background noise level.
Equivalent Noise Level, L_{eq}	The energy average A-weighted noise level during the Noise Level measurement period.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 4.8 decibels to levels in the evening from 7 p.m. to 10 p.m., and after addition of 10 decibels to sound levels in the night between 10 p.m. and 7 a.m.
Day-Night Level, L_{dn} or DNL	The Average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10 p.m. and 7 a.m.
Ambient Noise Level	The composite of noise from all sources, near and far. The normal or existing level of environmental noise at a given location.
Intrusive Noise	That noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Pure Tone	A pure tone is defined by the Model Community Noise Control Ordinance as existing if the one-third octave band sound pressure level in the band with the tone exceeds the arithmetic average of the two contiguous bands by 5 decibels (dB) for center frequencies of 500 Hz and above, or by 8 dB for center frequencies between 160 Hz and 400 Hz, or by 15 dB for center frequencies less than or equal to 125 Hz.

Source: California Department of Health Services 1976, 1977.

Noise Table Appendix 2 Typical Environmental and Industry Sound Levels			
Noise Source (at distance)	A-Weighted Sound Level in Decibels (dBA)	Noise Environment	Subjective Impression
Civil Defense Siren (100')	140-130		Pain Threshold
Jet Takeoff (200')	120		Very Loud
Very Loud Music	110	Rock Music Concert	
Pile Driver (50')	100		
Ambulance Siren (100')	90	Boiler Room	
Freight Cars (50')	85		
Pneumatic Drill (50')	80	Printing Press Kitchen with Garbage Disposal Running	Loud
Freeway (100')	70		Moderately Loud
Vacuum Cleaner (100')	60	Data Processing Center Department Store/Office	
Light Traffic (100')	50	Private Business Office	
Large Transformer (200')	40		Quiet
Soft Whisper (5')	30	Quiet Bedroom	
	20	Recording Studio	
	10		Threshold of Hearing

Source: Peterson and Gross 1974

SUBJECTIVE RESPONSE TO NOISE

The adverse effects of noise on people can be classified into three general categories:

- Subjective effects of annoyance, nuisance, dissatisfaction.
- Interference with activities such as speech, sleep, and learning.
- Physiological effects such as anxiety or hearing loss.

The sound levels associated with environmental noise, in almost every case, produce effects only in the first two categories. Workers in industrial plants can experience noise effects in the last category. There is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction, primarily because of the wide variation in individual tolerance of noise.

One way to determine a person's subjective reaction to a new noise is to compare the level of the existing (background) noise, to which one has become accustomed, with the level of the new noise. In general, the more the level or the tonal variations of a new noise exceed the previously existing ambient noise level or tonal quality, the less acceptable the new noise will be, as judged by the exposed individual.

With regard to increases in A-weighted noise levels, knowledge of the following relationships (Kryter 1970) can be helpful in understanding the significance of human exposure to noise.

1. Except under special conditions, a change in sound level of one dB cannot be perceived.
2. Outside of the laboratory, a three dB change is considered a barely noticeable difference.
3. A change in level of at least five dB is required before any noticeable change in community response would be expected.
4. A ten dB change is subjectively heard as an approximate doubling in loudness and almost always causes an adverse community response.

Combination of Sound Levels

People perceive both the level and frequency of sound in a non-linear way. A doubling of sound energy (for instance, from two identical automobiles passing simultaneously) creates a three dB increase (i.e., the resultant sound level is the sound level from a single passing automobile plus three dB). The rules for decibel addition used in community noise prediction are:

Noise Table Appendix 3
Addition of Decibel Values

When two decibel Values differ by:	Add the following Amount to the Larger value
0 to 1 dB	3 dB
2 to 3 dB	2 dB
4 to 9 dB	1 dB
10 dB or more	0

Figures in this table are accurate to ± 1 dB.

Source: Thumann, Table 2.3

Sound and Distance

1. Doubling the distance from a noise source reduces the sound pressure level by six dB.

2. Increasing the distance from a noise source ten times reduces the sound pressure level by 20 dB.

Worker Protection

OSHA noise regulations are designed to protect workers against the effects of noise exposure, and list permissible noise level exposure as a function of the amount of time to which the worker is exposed:

Noise Table Appendix 4

OSHA Worker Noise Exposure Standards

Duration of Noise (Hrs/day)	A-Weighted Noise Level (dBA)
8.0	90
6.0	92
4.0	95
3.0	97
2.0	100
1.5	102
1.0	105
0.5	110
0.25	115

Source: 29 CFR § 1910.95

E. SOCIOECONOMICS

The "socioeconomics" topic evaluates the effects of project-related population changes on local schools, medical and fire protection services, public utilities, and other public services, as well as the fiscal and physical capacities of local government to meet these needs. The public benefits of the project, including economic, environmental, and electricity reliability benefits are also reviewed. In addition, an environmental justice screening analysis is conducted to determine whether project-related activities would result in disproportionate impacts on minority and/or low-income populations.

SUMMARY AND DISCUSSION OF THE EVIDENCE

The construction phase is typically the focus of the analysis because of the potential influx of workers into the area. Socioeconomic impacts are considered significant if a large influx of non-resident workers and dependents move to the project area, increasing demand for community resources that are not readily available.

Applicant and Staff considered the Los Angeles Basin labor market area in evaluating construction and operation worker availability, community services, and potential infrastructure impacts from MGS construction and operation. Staff identified the potentially affected area to include, regionally, Los Angeles County, and locally, the cities of Bell, Huntington Park, Los Angeles, Maywood, and Vernon. These communities are within commute distance of the power plant site. The evidentiary record indicates that the Los Angeles Basin area has more than adequate labor supply for the MGS. (Ex. 1, p. 8.8-3; Ex. 34, p. 4.8-1.)

1. Potential Impacts

During the 16-month construction period, a total of 392 jobs will be created, of which an estimated 108 construction jobs will be directly related to the project and 284 will be secondary (indirect and induced) jobs. There is a large skilled labor pool in the Los Angeles region and construction workers are willing to commute one to two hours roundtrip rather than relocate due to the temporary nature of construction work. Thus, the record does not indicate that a large influx of workers would relocate to the local area and, therefore, the MGS will not result in a significant adverse socioeconomic impact on housing. (Ex. 34, p. 4.8-4.) Applicant estimated that the plant will be operated by 32 contract employees who will be drawn from the local labor force, thereby not creating any impact on housing supplies in the area. (Ex.1, § 8.8.2.3; Ex. 34, p. 4.8-5.) The record, therefore, establishes that the project will not directly, or indirectly, induce population growth and there would be no significant impact to schools[81], police, medical services or other public service providers. (Ex. 34, p. 4.8-7.)

The total project cost for the MGS is $142 million.[82] (Ex. 34, p. 4.8-5.) The cost of constructing the project is estimated at $43 million. Of this amount, approximately $13 million will be expended on construction-related payroll. The total project cost for the operation phase is estimated to be $4 million annually, which includes labor and materials for the operation and maintenance of the project. The project will generate about $4.6 million in taxes from sales in Los Angeles County for the acquisition of $58 million in equipment. The project's capital cost is estimated to exceed $95 million, including the equipment cost of $58 million. Since the City of Vernon is a municipal utility, there is no direct source of property tax revenue from the MGS Project. (Ex. 3, p. 4-4; Ex. 34, pp. 4.8-5, 4.8-6.)

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[81] As a municipality, the City of Vernon is exempt from paying a school impact fee.

[82] This cost is in 2001 dollars, which is the case for all economic estimates except the economic impact analysis that used 2003 dollars.

2. Section 25523(h) Public Benefit Finding

Public Resources Code section 25523(h) requires a discussion of the project's public benefits. According to the Applicant, the most important public benefit of the project is the local generation of reliable power. In addition, the local economy is enhanced by the multiplier effect of MGS workers spending payroll income in the area and local purchases of equipment and materials. The MGS will provide reliable electricity to the area due to state-of-the-art project design and efficiency levels. As a result of the project's state-of-the art technology, generation from older, less efficient, and more polluting power plants will be replaced by the new MGS.

3. Environmental Justice Screening Analysis

Applicant conducted a screening analysis to determine whether environmental justice concerns are present in this case.[83] (Ex. 1, § 8.8.1.9; Ex. 34, p. 4.8-6.) The screening analysis assessed (1) whether the potentially affected community includes minority and/or low-income populations; and (2) whether the project's potential environmental impacts are likely to fall disproportionately on minority and/or low-income members of the community. According to EPA guidelines, a minority population exists if the minority/low-income population of the affected area constitutes 50 percent or more of the general population. Relevant 2000 Census data within a six-mile radius of the site indicate that minority populations

[83] Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" requires the U.S. Environmental Protection Agency (EPA) and all other federal agencies and state agencies receiving federal aid to identify and address disproportionately high and adverse human health or environmental effects of their programs on minority and low-income populations. Although the Energy Commission is not obligated as a matter of law to conduct an environmental justice analysis, we include this analysis in power plant siting decisions to ensure that any potential adverse impacts on identified populations will be addressed.

constitute more than 50 percent of the general population, and thus, the MGS could result in disproportionate impacts to minority populations.[84] (*Ibid.*)

In its initial testimony, Staff relied on 1990 Census data to analyze low-income populations in the study area and found that the low-income population was below fifty percent. Upon the Committee's direction, Staff updated its analysis using 2000 Census data, and found that the low-income population was still less than fifty percent (32.03 percent) within the same radius. (Ex. 36, pp. 5-6.)

Applicant mapped all known pollution sources within the six-mile radius of the power plant site and reclaimed water line. (Ex. 1, § 8.8.1.9, Figure 8.8-1, Table 8.8-7.) Compliance with all Conditions of Certification adopted by this Decision will ensure that no unmitigated significant adverse impacts will result from project-related activities. As described in the **Air Quality** and **Public Health** sections, changes in air quality values and public health indices that could occur as a result of project operations are below regulatory thresholds for significant impact. Since the MGS will not result in significant adverse effects to any population, including minority populations, no further environmental justice analysis is required. (Ex. 34, p. 4.8-7.)

Since the MGS will be built in an industrial area, it will not physically alter the residential and commercial community, and will utilize a local labor force that would not create new demands on community infrastructure and services. Staff concluded that no significant direct or cumulative socioeconomic impacts would result from construction or operation of the project. Therefore, the evidentiary record establishes that there are no socioeconomic EJ issues related to this project. (Ex. 34, pp. 4.8-6, 4.8-7.)

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[84] Staff requires a six-mile radius for this analysis because it is the same radius used for Staff's cumulative air quality and public health analyses and captures the areas most likely to be impacted by the project. (Ex. 1, p. 8.8-5.)

4. Labor Agreement

The AFC for the Malburg Generating Station remains subject to the six-month process established by Public Resources Code § 25550[85], which requires evidence of a project labor agreement. At the evidentiary hearing, the Applicant submitted a letter indicating that a Project Labor Agreement was being negotiated with the State Building Trades. (Ex. 41.) On March 17, 2003, Applicant submitted a signed Project Labor Agreement between the general contractor and the State Building Trades Council of California and the Los Angeles/Orange Counties Building & Construction Trades Council and its affiliated unions. (Ex. 43.)

5. Cumulative Impacts

The Applicant indicated that there are 11 projects in discussion, five in the planning stages, 25 under construction (as of May 2002), and three demolition projects near the power plant site. (Ex. 3, Table 4-2, Table 4-3.) None of these projects will require new infrastructure facilities. Since there is an ample supply of labor in the Los Angeles Basin, no labor shortages are expected. The MGS will not result in any significant socioeconomic impacts, and thus it is unlikely to contribute to any cumulative socioeconomic impacts. (Ex. 34, p. 4.8-8.)

[85] PRC § 25550(f) states: "With respect to thermal power plants and related facilities reviewed under the process established by this chapter, it shall be shown that the applicant has a contract with a general contractor and has contracted for an adequate supply of skilled labor to construct, operate, and maintain the plant.

FINDINGS AND CONCLUSIONS

Based on the uncontroverted evidence of record, the Commission finds as follows:

1. A large skilled labor pool in the greater Los Angeles area is available for construction and operation of the project.

2. The project will not cause an influx of a significant number of construction or operation workers to relocate in the local Vernon area.

3. The project will not result in significant adverse effects to local employment, housing, schools, public utilities, or emergency.

4. The MGS is a public utility exempt from property taxes.

5. The MGS project will create 392 jobs (108 direct and 284 indirect) during construction and 176 jobs (32 direct and 144 indirect) during operation.

6. The estimated construction payroll will be approximately $13 million (2001 dollars) and the annual operations payroll will be about $2.5 million (2001 dollars).

7. The MGS will spend an estimated $58 million on equipment. The project will generate about $4.6 million in taxes from sales in Los Angeles County for the acquisition of $58 million in equipment.

8. The environmental justice screening analysis indicates that more than 50 percent of the population within a six-mile radius of the project is minority but not low-income.

9. There is no evidence of disproportionate impacts to minorities or low-income populations.

10. The project will provide public benefits, including economic and environmental benefits, and electricity reliability to the participating municipalities.

11. Construction and operation of the project will not result in any direct, indirect, or cumulative adverse socioeconomic impacts.

We, therefore, conclude that implementation of all Conditions of Certification in this Decision and the mitigation measures identified in the evidentiary record, ensures that the project will comply with all applicable laws, ordinances,

regulations, and standards relating to socioeconomic factors as identified in the pertinent portions of **Appendix A**. No specific Conditions of Certification are required for socioeconomics in this case.

Appendix A: *Laws, Ordinances, Regulations, and Standards*

Appendix B: *Proof of Service List*

Appendix C: *Exhibit List*

Appendix D: *Glossary of Terms*

APPENDICES

AIR QUALITY

FEDERAL

Under the Federal Clean Air Act (40 CFR 52.21), there are two major components of air pollution law, New Source Review (NSR) and Prevention of Significant Deterioration (PSD). NSR is a regulatory process for evaluation of those pollutants that violate federal ambient air quality standards. Conversely, PSD is a regulatory process for evaluation of those pollutants that do not violate federal ambient air quality standards. The NSR analysis has been delegated by the Environmental Protection Agency (EPA) to the South Coast Air Quality Management District (District). The District determines the conformance with the PSD regulations. The PSD requirements apply only to those projects (known as major sources) that exceeds 100 tons per year for any pollutant.

STATE

The California State Health and Safety Code, section 41700, requires that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerate number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property."

LOCAL - SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

The proposed project is subject to the following South Coast Air Quality Management District rules and regulations:

Regulation II – Permits

This regulation sets forth the regulatory framework of the application for and issuance of construction and operation permits for new, altered and existing equipment.

Rule 202 – Temporary Permit to Operate

This rule states that any new equipment that has been issued a Permit to Construct (PTC) shall be allowed to use that PTC as a temporary Permit to Operate (PTO) upon notification to the Air Pollution Control Officer (APCO).

Rule 203 – Permit to Operate

This rule prohibits the use of any equipment that may emit air contaminants or control the emission of air contaminants, without first obtaining a PTO except as provided in Rule 202.

Rule 217 – Provisions for Sampling and Testing

The Executive Officer (EO) may require the applicant to provide and maintain facilities necessary for sampling and testing. The EO will inform the applicant of the need for testing ports, platforms and utilities.

Rule 218 – Continuous Emission Monitoring

This rule describes the installation, QA/QC and reporting requirements for all sampling interfaces, analyzers and data acquisition systems used to continuously determine the concentration or mass emission of an emission source. However, this rule does not apply to the CEMS required for NOx monitoring under RECLAIM (Regulation XX).

Regulation IV – Prohibitions

This regulation sets forth the restrictions for visible emissions, odor nuisance, fugitive dust, various air emissions, fuel contaminants, start-up/shutdown exemptions and breakdown events. Please note that San Bernardino County Rule 53 and 53A have not been superseded by District rules and may apply to this project.

Rule 401 – Visible Emissions

Generally this rule restricts visible emissions from a single source for more than three minutes in any one hour from being as dark or darker than that designated on the No. 1 Ringelman Chart (US Bureau of Mines).

Rule 402 – Nuisance

This rule restricts the discharge of any contaminant in quantities which cause or have a natural ability to cause injury, damage, nuisance or annoyance to businesses, property or the public.

Rule 403 – Fugitive Dust

This rule requires that the applicant must prevent, reduce or mitigate fugitive dust emissions from the project site. Rule 403 restricts visible fugitive dust to the project property line, restricts the net PM10 emissions (between up and down wind measurements) to less than 50 ug/m^3 and restricts the tracking out of bulk materials onto public roads. Additionally, the applicant must utilize one or more of the best available control measures (identified in the tables within the rule). Mitigation measures may include, adding freeboard to haul vehicles, covering loose material on haul vehicles, watering, using chemical stabilizers and/or ceasing all activities. Finally, a contingency plan maybe required if so determined by the US EPA.

Rule 407 – Liquid and Gaseous Air Contaminants

This rule limits CO emissions to 2,000 ppm and SO2 emissions to 500 ppm, averaged over 15 minutes. However, internal combustion engines are exempt from the SO2 limit, as are equipment that comply with rule 431.1. The applicant will comply with rule 431.1 and thus the sulfur limit of rule 407 will not apply.

Rule 408 – Circumvention

This rule allows the concealment of emissions released to the atmosphere in cases where the only violation involved is of Section 48700 of the Health and Safety Code or District Rule 402.

Rule 409 – Combustion Contaminants

This rule restricts the discharge of contaminants from the combustion of fuel to 0.23 grams per cubic meter of gas, calculated to 12% CO_2, averaged over 15 minutes. This rule does not apply to IC engines or jet engine test stands.

Rule 431.1 – Sulfur Content of Gaseous Fuels

This rule restricts the sale or use of gaseous fuels that exceed a sulfur content limit. The sulfur content limit for natural gas is 16 ppmv calculated as H_2S. This rule also establishes monitoring and reporting requirements, as well as test methods to be used.

Rule 431.2 – Sulfur Content of Liquid Fuels

This rule establishes a sulfur content limit for diesel fuel of 0.05% by weight, as well as, record keeping requirements and test methods.

Rule 475 – Electric Power Generating Equipment

This rule limits combustion contaminants (PM10) from electric power generating equipment to 11 pounds per hour and 23 milligrams per cubic meter @ 3% O_2 (averaging time subject to Executive Officer decision).

Regulation VII – Emergencies

Rule 701 – Air Pollution Emergency Contingency Actions

This rule requires that facilities employing 100 or more people or emitting 100 or more tons of pollutants (NOx, SOx or VOC) per year, upon declaration or prediction of a Stage 2 or 3 episode, reduce NOx, SOx and VOC emissions by at least 20% of normal workday operations. This rule also requires that upon declaration of a state of emergency by the Governor that the facility complies with the Governor's requirements. A power plant facility may be exempt from Rule 701 if they are determined to be an essential service responding to a public emergency or utility outage.

Regulation IX – Standards of Performance for New Stationary Sources

Regulation IX incorporates provisions of Part 60, Chapter I, Title 40, of the Code of Federal Regulations (CFR) and is applicable to all new, modified or reconstructed sources of air pollution. Sections of this regulation apply to electric utility steam generators (Subpart Da) and stationary gas turbines (Subpart GG). These subparts establish limits of particulate matter, SO2 and NO2 emissions from the facility as well as monitoring and test method requirements.

Regulation XI – Source Specific Standards

Rule 1110.1 – Emissions from Stationary Internal Combustion Engines

This rule generally applies to engines larger that 50 brake horsepower (bhp) and places restriction on rich-burn or lean-burn engines. These restrictions are in the form of NOx and CO emission limits and the required submittal of a control plan

to demonstrate compliance. Emergency standby engines, operating less than 200 hours per year are exempt from Rule 1110.1.

Rule 1110.2 – Emissions from Gas and Liquid Fueled Engines

This rule establishes NOx, VOC and CO emission limits for stationary and portable engines over 50 bhp in rated capacity. Emergency standby engines, operating less than 200 hours per year are exempt from Rule 1110.2.

Regulation XIII – New Source Review

This regulation sets forth the pre-construction review requirements for new, modified or relocated facilities to ensure that these facilities do not interfere with progress in attainment of the national ambient air quality standards and that future economic growth in the SCAQMD is not unnecessarily restricted. This regulation limits the emissions of non-attainment contaminants and their precursors as well as ozone depleting compounds (ODC) and ammonia by requiring the use of Best Available Control Technologies (BACT). However, this regulation does not apply to NOx or SOx emissions from certain sources, which are regulated by Regulation XX (RECLAIM). This regulation applies to SOx emissions from the MGS, but not to the NOx emissions from the project.

Regulation XVII – Prevention of Significant Deterioration

This regulation sets forth the pre-construction requirement for stationary sources to ensure that the air quality in clean air areas does not significantly deteriorate while maintaining a margin for future industrial growth. This regulation establishes maximum allowable increases over ambient baseline concentrations for each pollutant. The MGS will trigger PSD review for NOx only.

Regulation XX – Regional Clean Air Incentives Market (RECLAIM)

The Regional Clean Air Incentives Market (RECLAIM) is designed to allow facilities flexibility in achieving emission reduction requirements for NOx and SOx through controls, equipment modifications, reformulated products, operational changes, shutdowns, other reasonable mitigation measures or the purchase of excess emission reductions. The RECLAIM program establishes an initial allocation (beginning in 1994) and an ending allocation (to be attained by the year 2003) for each facility within the program (Rule 2002). Each facility then reduces their allocation annually on a straight line from the initial to the ending. The RECLAIM program supercedes other specified district rules, where there are conflicts. As a result, the RECLAIM program has its own rules for permitting, reporting, monitoring (including CEM), record keeping, variances, breakdowns and the New Source Review program, which incorporates BACT requirements (Rules 2004, 2005, 2006 and 2012). RECLAIM also has its own banking rule, RECLAIM Trading Credits (RTCs), which is established in Rule 2007. The MGS is exempt from the SOx RECLAIM program (Rule 2011) because it uses natural gas exclusively (per Rule 2001). However, it will be a NOx RECLAIM project and therefore subject to the rules of RECLAIM for NOx emissions.

Regulation XXX – Title V Permits

The Title V federal program is the air pollution control permit system required by the federal Clean Air Act as amended in 1990. Regulation XXX defines the permit application and issuance as well as compliance requirements associated with the

program. Any new or modified major source which qualifies as a Title V facility must obtain a Title V permit prior to construction, operation or modification of that source. Regulation XXX also integrates the Title V permit with the RECLAIM program such that a project cannot proceed without the other.

Regulation XXXI – Acid Rain Permits

Title IV of the federal Clean Air Act provides for the issuance of acid rain permits for qualifying facilities. Regulation XXXI integrates the Title V program with the RECLAIM program. Regulation XXXI requires a subject facility to obtain emission allowances for SOx emissions as well as monitoring SOX, NOx and CO2 emissions from the facility.

BIOLOGICAL RESOURCES

FEDERAL

- Clean Water Act of 1977
  Title 33, United States Code, sections 1251-1376, and Code of Federal Regulations, part 30, section 330.5(a)(26), which prohibits the discharge of dredged or fill material into the waters of the United States without a permit.
- Endangered Species Act of 1973
  Title 16, United States Code, section 1531 et seq., and Title 50, Code of Federal Regulations, part 17.1 et seq., designate and provide protection of threatened and endangered plant and animal species, and their critical habitat.
- Migratory Bird Treaty Act
  Title 16, United States Code, sections 703-712, prohibit the take of migratory birds.

STATE

- California Endangered Species Act of 1984
  Fish and Game Code sections 2050 et seq. protects California's rare, threatened, and endangered species.
- Nest or Eggs-Take, Possess, or Destroy
  Fish and Game Code section 3503 protects California's birds by making it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird.
- Birds of Prey or Eggs-Take, Possess, or Destroy
  Fish and Game Code section 3503.5 protects California's birds of prey and their eggs by making it unlawful to take, possess, or destroy any birds of prey or to take, possess, or destroy the nest or eggs of any such bird.
- Migratory Birds-Take or Possession
  Fish and Game Code section 3513 protects California's migratory birds by making it unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act or any part of such migratory non-game bird.
- Fully Protected Species
  Fish and Game Code sections 3511, 4700, 5050, 5515 prohibit take of animals that are classified as Fully Protected in California.
- Significant Natural Areas
  Fish and Game Code section 1930 et seq. designates certain areas such as refuges, natural sloughs, riparian areas, and vernal pools as significant wildlife habitat.
- Native Plant Protection Act of 1977
  Fish and Game Code section 1900 et seq. designates state rare, threatened, and endangered plants.

- Streambed Alteration Agreement
  Fish and Game Code section 1600 et seq. requires CDFG to review project impacts to waterways, including impacts to vegetation and wildlife from sediment, diversions, and other disturbances.
- California Code of Regulations
  Title 14, sections 670.2 and 670.5 list animals of California designated as threatened or endangered.
- Clean Water Act
  To verify that the federal Clean Water Act permitted actions comply with state regulations, the Regional Water Quality Control Board provides its certification after reviewing the federal permit(s) provided, if necessary, by the U.S. Army Corp of Engineers.

LOCAL

- City of Vernon General Plan
  Section 3.0, Goals 1 and 2 provide for the preservation of open space land and the conservation and protection of regional natural resources.
- Los Angeles County Significant Ecological Areas
  Los Angeles County designated 61 Significant Ecological Areas (SEAs) with the intent of preserving biotic diversity. Proposed development within an SEA with potential for environmental degradation requires a conditional use permit.
- Southern California Association of Governments (SCAG)
  SCAG reviews Environmental Impact Reports of regional significance for consistency with regional plans.

CULTURAL RESOURCES

STATE

- California Code of Regulations, Title 14, section 4852 defines the term "cultural resource" to include buildings, sites, structures, objects, and historic districts.
- Public Resources Code, section 5000 establishes a California Register of Historic Places (CRHR), criteria for eligibility to the CRHR and defines eligible resources. It identifies any unauthorized removal or destruction of historic resources on sites located on public land as a misdemeanor. It also prohibits obtaining or possessing Native American artifacts or human remains taken from a grave or cairn and establishes the penalty for possession of such artifacts with intent to sell or vandalize them as a felony. This section defines procedures for the notification of discovery of Native American artifacts or remains, and states that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated.
- The California Environmental Quality Act (CEQA) (Pub. Resources Code, 21000 et seq.; Code of Reg., Title 14, section15000 et seq.) requires analysis of potential environmental impacts of proposed projects and requires application of feasible mitigation measures.
- Public Resources Code, section 21083.2 states that the lead agency determines whether a project may have a significant effect on “unique” archaeological resources. If so, an EIR shall address these resources. If a potential for damage to unique archaeological resources can be demonstrated, the lead agency may require reasonable steps to preserve the resource in place. Otherwise, mitigation measures shall be required as prescribed in this section. The section discusses excavation as mitigation, limits the applicant’s cost of mitigation, sets time frames for excavation, defines “unique and non-unique archaeological resources,” and provides for mitigation of unexpected resources. The California Energy Commission process is a CEQA equivalent process.
- Public Resources Code, section 21084.1 indicates that a project may have a significant effect on the environment if it causes a substantial adverse change in the significance of a historic resource. The section further defines a “historic resource” and describes what constitutes a “significant” historic resource.
- The CEQA Guidelines, Cal. Code Reg, Tit.14, section 15126.4(b) prescribe the manner of maintenance, repair, stabilization, restoration, conservation, or reconstruction as mitigation of a project’s impact on a historical resource. The Guidelines also discuss documentation as a mitigation measure and discusses mitigation through avoidance of damaging effects on any historical resource of an archaeological nature, preferably by preservation in place, or by data recovery through excavation if avoidance or preservation in place is not feasible. Data recovery must be conducted in accordance with an adopted data recovery plan.
- Section 15064.5 of the CEQA Guidelines defines the term “historical resources,” explains when a project may have a significant effect on historic resources,

describes CEQA's applicability to archaeological sites, and specifies the relationship between "historical resources" and "unique archaeological resources."

- Penal Code, section 622 ½ states that anyone who willfully damages an object or thing of archaeological or historic interest is guilty of a misdemeanor.
- Health and Safety Code, section 7050.5 states that if human remains are discovered during construction, the project owner is required to contact the county coroner.

LOCAL

The General Plan adopted by the City of Vernon contains no provisions for cultural resources (COV 2001a:8.3-17, Table 8.3.2).

FACILITY DESIGN

A lists of laws, ordinances, regulations, and standards (LORS) applicable to each engineering discipline (civil, structural, mechanical and electrical) are described in Exhibit 1 (COV 2001a, Appendices B2 through B6). Some of these LORS include; California Building Code (CBC), American National Standards Institute (ANSI), American Society of Mechanical Engineers (ASME), American Society for Testing and Materials (ASTM) and American Welding Society (AWS).

GEOLOGY, MINERAL RESOURCES AND PALEONTOLOGY

FEDERAL

There are no federal LORS for geological hazards and resources or grading for the proposed project. The Federal Antiquities Act of 1906 (PL 59-209; 16 United States code 431 *et seq*.; 34 Stat. 25), in part, protects paleontological resources from vandalism and unauthorized collection on federal land. The National Environmental Policy Act of 1968 (United States Code, Section 4321 4327; 40 Code of Federal Regulations, Section 1502.25), as amended, requires analysis of potential environmental impacts to important historic, cultural and natural aspects of our national heritage.

STATE AND LOCAL

The California Building Code (CBC) is based upon the Uniform Building Code (UBC), 1997 edition, which was published by the International Conference of Building Officials. The CBC is a series of standards that are used in project investigation, design (Chapters 16 and 18) and construction (including grading and erosion control as found in Appendix Chapter 33). The CBC supplements the UBC's grading and construction ordinances and regulations (California Building Standards Commission [CBSC]), 1998.

The California Environmental Quality Act Guidelines Appendix G provides a checklist of questions that a lead agency should normally address if relevant to a project's environmental impacts.

- Section (V) (c) asks if the project will directly or indirectly destroy a unique paleontological resource or site or unique geological feature.
- Sections (VI) (a), (b), (c), (d), and (e) pose questions that are focused on whether or not the project would expose persons or structures to geological hazards.
- Sections (X) (a) and (b) pose questions about the project's effect on mineral resources.

The "Measures for Assessment and Mitigation of Adverse Impacts to Non-renewable Paleontologic Resources: Standard Procedures" (SVP, 1995) is a set of procedures and standards for assessing and mitigating impacts to vertebrate paleontological resources. They were adopted in October 1995 by the Society of Vertebrate Paleontologists (SVP), a national organization.

HAZARDOUS MATERIALS MANAGEMENT

FEDERAL

The Superfund Amendments and Reauthorization Act of 1986 (42 USC §9601 et seq.), contains the Emergency Planning and Community Right To Know Act (also known as SARA Title III). The Clean Air Act (CAA) of 1990 (42 USC 7401 et seq. as amended) established a nationwide emergency planning and response program and imposed reporting requirements for businesses which store, handle, or produce significant quantities of extremely hazardous materials. The CCA section on Risk Management Plans - codified in 42 USC §112(r) - requires the states to implement a comprehensive system to inform local agencies and the public when a significant quantity of such materials is stored or handled at a facility. The requirements of both SARA Title III and the CAA are reflected in the California Health and Safety Code, section 25531 et seq

STATE

The California Health and Safety Code, section 25534, directs facility owners, storing or handling acutely hazardous materials in reportable quantities, to develop a Risk Management Plan (RMP) and submit it to appropriate local authorities, the United States Environmental Protection Agency (EPA), and the designated local Administering Agency for review and approval. The plan must include an evaluation of the potential impacts associated with an accidental release, the likelihood of an accidental release occurring, the magnitude of potential human exposure, any preexisting evaluations or studies of the material, the likelihood of the substance being handled in the manner indicated, and the accident history of the material. This new, recently developed program supersedes the California Risk Management and Prevention Plan (RMPP).

Title 8, California Code of Regulations, Section 5189, requires facility owners to develop and implement effective safety management plans to insure that large quantities of hazardous materials are handled safely. While such requirements primarily provide for the protection of workers, they also indirectly improve public safety and are coordinated with the RMP process.

Title 8, California Code of Regulations, Section 458 and Sections 500 - 515, set forth requirements for design, construction and operation of vessels and equipment used to store and transfer ammonia. These sections generally codify the requirements of several industry codes, including the ASME Pressure Vessel Code, ANSI K61.1 and the National Boiler and Pressure Vessel Inspection Code. These codes apply to anhydrous ammonia but are also used to design storage facilities for aqueous ammonia.

California Health and Safety Code, section 41700, requires that “No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property.”

Gas Pipeline

The safety requirements for pipeline construction vary according to the population density and land use, which characterize the surrounding land. The pipeline classes are defined as follows (Title 49, Code of Federal Regulations, Part 192, Section 192.5):

- Class 1: Pipelines in locations within 220 yards of ten or fewer buildings intended for human occupancy in any 1-mile segment.
- Class 2: Pipelines in locations within 220 yards of more than ten but fewer than 46 buildings intended for human occupancy in any 1-mile segment. This class also includes drainage ditches of public roads and railroad crossings.
- Class 3: Pipelines in locations within 220 yards of more than 46 buildings intended for human occupancy in any 1-mile segment, or where the pipeline is within 100 yards of any building or small well-defined outside area occupied by 20 or more people on at least 5 days a week for 10 weeks in any 12 month period (the days and weeks need not be consecutive).
- Class 4: Pipelines in locations within 220 yards of building s with 4 or more stories above ground in any 1-mile segment.

The natural gas pipeline must be designed for Class 4 service and must meet California Public Utilities Commission General Order 112-E and 58-A. The natural gas pipeline must be constructed and operated in accordance with the Federal Department of Transportation (DOT) regulations, Title 49, Code of Federal Regulations (CFR), Parts 190, 191, and 192:

- Title 49, Code of Federal Regulations, Part 190 outlines the pipeline safety program procedures;
- Title 49, Code of Federal Regulations, Part 191, Transportation of Natural and Other Gas by Pipeline; Annual Reports, Incident Reports, and Safety-Related Condition Reports, requires operators of pipeline systems to notify the U.S. Department of Transportation of any reportable incident by telephone and then submit a written report within 30 days;
- Title 49, Code of Federal Regulations, Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, specifies minimum safety requirements for pipelines and includes material selection, design requirements, and corrosion protection. The safety requirements for pipeline construction vary according to the population density and land use, which characterize the surrounding land. This part contains regulations governing pipeline construction which must be followed for Class 2, 3, and 4 pipelines.

LOCAL AND REGIONAL

The Uniform Fire Code (UFC) contains provisions regarding the storage and handling of hazardous materials in Articles 79 and 80. The latest revision to Article 80 was issued in 1997 (Uniform Fire Code, 1997) and includes minimum setback requirements for outdoor storage of ammonia. The administering agency for this authority is the City of Vernon Department of Community Services & Water.

The Certified Unified Program Authority (CUPA) with responsibility to review RMPs and Hazardous Materials Business Plans is the City of Vernon Environmental Health Department.

LAND USE

CITY OF VERNON GENERAL PLAN

Land uses are controlled and regulated through a series of goals and policies contained in plans adopted by the local jurisdiction that has land use authority over the area (in this case, the City of Vernon). Local agencies with land use authority (i.e., cities and counties) are required to adopt a General Plan for the area within their jurisdiction that sets forth policies regarding land use and other planning topics. The General Plan is the broadest planning document applicable to the site, expressing broad goals and policies to guide local decisions on future growth, development, and conservation. Other local plans, as well as the zoning ordinance that regulates land use, must be consistent with the goals and policies expressed in the General Plan.

The City of Vernon General Plan was adopted in 1989 and was most recently revised on June 16, 1992. In its preface, the Vernon General Plan is described as an official policy document adopted as a guide for making decisions concerning the development of the community according to desired goals. When adopted in 1989, it was intended to shape the future physical development of the city for the next 20 years. The City of Vernon's General Plan Land Use Element designates the project site as General Industrial. In addition, the existing power plant is designated Public Facility in the Land Use Element. The project's industrial land use designation promotes the City of Vernon's role as a regional industrial area and as a significant employment center within the Los Angeles region.

The City of Vernon was planned as an industrial city when it was incorporated in 1905. The reasons for incorporation outlined in Resolution No.4, which was adopted in 1905, established the City's land use policy as the promotion and advancement of manufacturing industries.

The Land Use Element of the General Plan has two major components that address the description of land uses and land use policies. First, the goals and policies state that the City will promote and maintain the industrial character of the City, and second, the City will encourage the modernization, replacement, or reuse of the older industrial facilities.

The Public Facilities land use designation indicates and provides land for a variety of public and quasi-public facilities. The objective of the Land Use Element in designating public facilities sites is to preserve public amenities and necessary public facilities for which alternative sites would be difficult to procure. Permitted public facilities include educational facilities, utilities, and other government buildings or open space areas.

The City of Vernon is developed to the point where acquisition of additional land for public facilities is not practical. As a result, existing public facility sites will not be relinquished unless it can be demonstrated that they will no longer be necessary to the public. The General Plan contains the following key goals, objectives and policies applicable to the proposed project:

Infrastructure Element

- Policy 6.1: Operate and maintain an electrical utility system, which provides an adequate level of service to businesses and other uses in the City.
- Policy 6.2: Periodically evaluate the electrical utility system to ensure its adequacy to meet any changes in demand over time.

CITY OF VERNON ZONING ORDINANCE

Zoning is the specific administrative tool used by a jurisdiction to regulate land use and development, and is one of the primary tools for implementing the goals and policies of the General Plan. Zoning is typically more specific than the General Plan and includes detailed land use regulations and development standards. The City's Zoning Ordinance divides the land in the city into zones that permit different types of uses and imposes development standards appropriate to the uses permitted in each zoning district. **LAND USE Figure 1** shows the zoning districts in the area of the proposed project site. The MGS project site is located in the General Industrial (M) zoning district.

The purpose of the "M" District (Section 26.3.5 of the Vernon Zoning Ordinance) is "intended for the orderly development and operation of most types of industrial plants and to promote the concentration of such uses in a manner which will foster mutually beneficial relationships with each other." The "M" District permits a broad array of industrial uses, administrative and professional offices/services, automobile-related uses, trade schools, retail commercial uses, and service commercial uses. As indicated earlier in this analysis, the site is designated "Public Facility" which is an allowed use in the M Zoning District.

The Zoning Ordinance (Section 26.3.5-4) also includes minimum design and performance standards applicable to the construction of industrial and commercial buildings in the "M" District. These include standards for building intensities, outdoor activities and storage requirements and other design features.

NOISE AND VIBRATION

FEDERAL

Under the Occupational Safety and Health Act of 1970 (OSHA) (29 U.S.C. § 651 et seq.), the Department of Labor, Occupational Safety and Health Administration (OSHA) has adopted regulations (29 C.F.R. § 1910.95) designed to protect workers against the effects of occupational noise exposure. These regulations list permissible noise exposure levels as a function of the amount of time to which the worker is exposed. The regulations further specify a hearing conservation program that involves monitoring the noise to which workers are exposed, assuring that workers are made aware of overexposure to noise, and periodically testing the workers' hearing to detect any degradation.

There are no federal laws governing off-site (community) noise.

The Federal Transit Administration (FTA) has published guidelines for assessing the impacts of ground-borne vibration associated with construction of rail projects, which have been applied by other jurisdictions to other types of projects. The FTA-recommended vibration standards are expressed in terms of the "vibration level," which is calculated from the peak particle velocity measured from ground-borne vibration. The FTA measure of the threshold of perception is 65 VdB, which correlates to a peak particle velocity of about 0.002 inches per second (in/sec). The FTA measure of the threshold of architectural damage for conventional sensitive structures is 100 VdB, which correlates to a peak particle velocity of about 0.2 in/sec.

STATE

California Government Code Section 65302(f) encourages each local governmental entity to perform noise studies and implement a noise element as part of its General Plan. In addition, the California Office of Planning and Research has published guidelines for preparing noise elements, which include recommendations for evaluating the compatibility of various land uses as a function of community noise exposure. The State land use compatibility guidelines are listed in **NOISE: Table 1**.

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NOISE: Table 1 - Land Use Compatibility for Community Noise Environment

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE – Ldn or CNEL (dBA)													
	50		55		60		65		70		75		80	
Residential - Low Density Single Family, Duplex, Mobile Home														
Residential - Multi-Family														
Transient Lodging – Motel, Hotel														
Schools, Libraries, Churches, Hospitals, Nursing Homes														
Auditorium, Concert Hall, Amphitheaters														
Sports Arena, Outdoor Spectator Sports														
Playgrounds, Neighborhood Parks														
Golf Courses, Riding Stables, Water Recreation, Cemeteries														
Office Buildings, Business Commercial and Professional														
Industrial, Manufacturing, Utilities, Agriculture														

	Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
	Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design.
	Normally Unacceptable	New construction or development should be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: State of California General Plan Guidelines, Office of Planning and Research, June 1990.

The State of California, Office of Noise Control, prepared a Model Community Noise Control Ordinance, which provides guidance for acceptable noise levels in the absence of local noise standards. The Model also contains a definition of a simple tone, or "pure tone," in terms of one-third octave band sound pressure levels that can be used to determine whether a noise source contains annoying tonal components. This Model further recommends that, when a pure tone is present, the applicable noise standard should be lowered (made more stringent) by 5 dBA.

Other State LORS include the California Environmental Quality Act (CEQA) and the California Occupational Safety and Health Administration (Cal-OSHA) regulations.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) requires that significant environmental impacts be identified, and that such impacts be eliminated or mitigated to the extent feasible. Section XI of Appendix G of CEQA Guidelines (Cal. Code Regs., tit. 14, App. G) sets forth some characteristics that may signify a potentially significant impact. Specifically, a significant adverse impact from noise may exist if a project would result in:

a) exposure of persons to, or generation of, noise levels in excess of standards established in the local General Plan or noise ordinance, or applicable standards of other agencies;

b) exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels;

c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or

d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project….

The Energy Commission, in applying Item c) above to the analysis of this and other projects, has concluded that a potential for a significant noise impact may exist where the noise of the project plus the background exceeds the background L_{90} by 5 dBA L_{90} or more at the nearest location where the sound is likely to be perceived.

Noise due to construction activities is usually considered to be insignificant in terms of CEQA compliance if:

- The construction activity is temporary,
- Use of heavy equipment and noisy activities is limited to daytime hours, and
- All feasible noise abatement measures are implemented for noise-producing equipment.

Cal-OSHA

Cal-OSHA has promulgated Occupational Noise Exposure Regulations (Cal. Code Regs., tit. 8, §§ 5095-5099) that set employee noise exposure limits. These standards are equivalent to the federal OSHA standards.

LOCAL

The project is located on a 5.9-acre parcel of land in the City of Vernon at the City's existing Station A power plant. Although the project is located in the City of Vernon,

most of the affected residential areas are in the adjacent City of Huntington Park. The cities of Vernon and Huntington Park are identified as the involved agencies (COV, 2001a, AFC § 8.5.6 and Table 8.5-10).

City of Vernon

City of Vernon – Noise Element – April, 1989. Exterior noise level standards, of the Noise Element for the City of Vernon defines exterior noise limits for single-occupancy dwellings in high-density population areas in terms of noise levels that are not to be exceeded. The level that is not to be considered abusive during the day is 70 dBA, for evening periods is 65 dBA, and for night periods is 62 dBA. The day period is defined as those hours from 7 a.m. to 7 p.m., the evening is defined as 7 p.m. to 10 p.m., and the night period is defined as the hours from 10 p.m. to 7 a.m.

The City does not restrict the hours of construction.

City of Huntington Park

The City of Huntington Park Municipal Code, Section 5-11 limits noise that creates a "Nuisance." There are no specific noise levels stated. In this case it is reasonable to impose the condition that the average nighttime L_{90} cannot be increased by more than 5 dBA to avoid a nuisance. An increase in the ambient of more than 5 dBA will be noticeable by the public and thus could be considered a nuisance.

POWER PLANT EFFICIENCY

No federal, state, or local laws, ordinances, regulations or standards (LORS) apply to the efficiency of this project.

POWER PLANT RELIABILITY

Presently, there are no laws, ordinances, regulations or standards (LORS) that establish either power plant reliability criteria or procedures for attaining reliable operation. However, the Commission must make findings as to the manner in which the project is to be designed, sited and operated to ensure safe and reliable operation [Cal. Code Regs., tit. 20, § 1752(c)].

PUBLIC HEALTH

FEDERAL

Clean Air Act section 112 (42 U.S. Code section 7412)

Section 112 requires new sources which emit more than ten tons per year of any specified hazardous air pollutant (HAP) or more than 25 tons per year of any combination of HAPs to apply Maximum Achievable Control Technology (MACT).

STATE

California Health and Safety Code sections 39650 et seq.

These sections mandate the California Air Resources Board (CARB) and the Department of Health Services to establish safe exposure limits for toxic air pollutants and identify pertinent best available control technologies. They also require that the new source review rule for each air pollution control district include regulations that require new or modified procedures for controlling the emission of toxic air contaminants.

California Health and Safety Code section 41700

This section states that "no person shall discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

LOCAL

South Coast Air Quality Management District (SCAQMD) Rule 1401

This rule requires a risk assessment or risk screening analysis to be performed for new or modified facilities that emit one or more toxic air contaminants that exceed specified amounts.

SOCIOECONOMICS

California Government Code, section 65996-65997

As amended by SB 50 (Stats. 1998, ch. 407, Sec. 23), states that public agencies may not impose fees, charges or other financial requirements to offset the cost for school facilities.

SOIL AND WATER RESOURCES

FEDERAL

Clean Water Act

The Clean Water Act (33 USC § 1257 et seq.) requires states to set standards to protect water quality through the regulation of point source and certain non-point source discharges to surface water. These discharges are regulated through requirements set forth in specific or general National Pollutant Discharge Elimination System (NPDES) permits. Storm water discharges during construction and operation of a facility, and incidental non-storm water discharges associated with pipeline construction also fall under this act, and are addressed through a general NPDES permit. In California, requirements of the Clean Water Act regarding regulation of point source discharges and storm water discharges are delegated to, and administered by, the nine Regional Water Quality Control Boards (RWQCB). In the case of the MGS, water quality is administered by Region 4, the Los Angeles RWQCB.

STATE

California Constitution, Article X, Section 2

This section requires that the water resources of the State be put to beneficial use to the fullest extent possible. The waste, unreasonable use, or unreasonable method of use of water is prohibited. The conservation of such waters is to be exercised with a view to the reasonable and beneficial use in the interest of the people and for the public welfare. The right to water or to the use or flow of water in or from any natural stream or water course in the State is and shall be limited to such water as shall be reasonably required for the beneficial use to be served, and such right does not and shall not extend to the waste or unreasonable use, or unreasonable method of use, or unreasonable method of diversion of water.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1967, Water Code Section 13000 et seq., requires the State Water Resources Control Board (SWRCB) and the nine RWQCBs to adopt water quality criteria to protect state waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards and implementation procedures. These standards are typically applied to the proposed project through the Waste Discharge Requirements (WDRs) permit. The Porter-Cologne Water Quality Control Act also requires the SWRCB and nine RWQCBs to ensure the protection of water quality through the regulation of waste discharges to land. Such discharges are regulated under Title 23, California Code of Regulations, Chapter 15, Division 3. These regulations require that the RWQCB issue Waste Discharge Requirements specifying conditions regarding the construction, operation, monitoring and closure of the waste disposal site, including injection wells and evaporation ponds for waste disposal.

California Water Code

California Water Code 13550 requires the use of reclaimed water, where available. The use of potable domestic water for nonpotable uses, including, industrial uses, is a waste or an unreasonable use of the water within the meaning of Section 2 of Article X of the California Constitution if recycled water is available.

California Water Code Section 13260 requires that, as part of the NPDES permit, any person discharging waste, or proposing to discharge waste, within any region that could affect the quality of the waters of the state, other than into a community sewer system must submit a report of waste discharge to the RWQCB.

The California Safe Drinking Water and Toxic Enforcement Act (California Health & Safety Code Section 25249.5et seq.).

This Act prohibits actions contaminating drinking water with chemical known to cause cancer or possessing reproductive toxicity. The requirements of the Act are administered by the RWCQB.

STATE POLICIES - STATE WATER RESOURCES CONTROL BOARD

The SWRCB has also adopted a number of policies that provide guidelines for water quality protection. The principle policy of the SWRCB which addresses the specific siting of energy facilities is the Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power plant Cooling (adopted by the Board on June 19, 1976 by Resolution 75-58). This policy states that use of fresh inland waters should only be used for power plant cooling if other sources or other methods of cooling would be environmentally undesirable or economically unsound. This SWRCB policy requires that power plant cooling water should come from, in order of priority: wastewater being discharged to the ocean, ocean water, brackish water from natural sources or irrigation return flow, inland waste waters of low total dissolved solids, and other inland waters. This policy also addresses cooling water discharge prohibitions.

LOCAL

County Sanitation Districts of Los Angeles County Wastewater Ordinance – April 1, 1972 (As Amended July1, 1998)

In 1972, the Districts' Boards of Directors first adopted the Wastewater Ordinance. The purpose of the Ordinance is to establish controls on users of the Districts' sewerage system in order to protect the environment and public health, and to provide for the maximum beneficial use of the Districts' facilities.

Los Angeles County Ordinances

The Standard Urban Storm Water Mitigation Plan (SUSMP) was developed as part of the municipal storm water program to address storm water pollution from new Development and Redevelopment by the private sector. While the project does not fall into the category of a private sector development, the applicant will comply with the requirements of the SUSMP by developing BMPs to meet the program objectives on the site.

TRAFFIC AND TRANSPORTATION

FEDERAL

The federal government addresses transportation of goods and materials in Title 49, Code of Federal Regulations:

- Title 49, Code of Federal Regulations, sections 171-177, governs the transportation of hazardous materials, the types of materials defined as hazardous, and the marking of the transportation vehicles.
- Title 49, Code of Federal Regulations, sections 350-399, and Appendices A-G, Federal Motor Carrier Safety Regulations, addresses safety considerations for the transport of goods, materials, and substances over public highways.

STATE

The California Vehicle Code and the Streets and Highways Code contain requirements applicable to the licensing of drivers and vehicles, the transportation of hazardous materials and rights-of-way. In addition, the California Health and Safety Code address the transportation of hazardous materials. Provisions within the California Vehicle Code are:

- Section 353 defines hazardous materials. Sections 31303-31309 regulate the highway transportation of hazardous materials, the routes used, and restrictions thereon.
- Sections 31600-31620 regulate the transportation of explosive materials.
- Sections 32000-32053 regulate the licensing of carriers of hazardous materials and include noticing requirements.
- Sections 32100-32109 establish special requirements for the transportation of inhalation hazards and poisonous gases.
- Sections 34000-34121 establish special requirements for the transportation of flammable and combustible liquids over public roads and highways.
- Sections 34500, 34501, 34501.2, 34501.3, 34501.4, 34501.10, 34505.5-7, 34506, 34507.5 and 34510-11 regulate the safe operation of vehicles, including those which are used for the transportation of hazardous materials.
- Sections 25160 et seq. addresses the safe transport of hazardous materials.
- Sections 2500-2505 authorize the issuance of licenses by the Commissioner of the California Highway Patrol for the transportation of hazardous materials including explosives.
- Sections 13369, 15275, and 15278 address the licensing of drivers and the classifications of licenses required for the operation of particular types of vehicles.

In addition, the possession of certificates permitting the operation of vehicles transporting hazardous materials is required.

- California Streets and Highways Code, Sections 117 and 660-72, and California Vehicle Code, Sections 35780 et seq., require permits for the transportation of oversized loads on county roads.

California Street and Highways Code, Sections 660, 670, 1450, 1460 et seq., 1470, and 1480, regulate right-of-way encroachment and the granting of permits for encroachments on state and county roads.

All construction within the public right-of-way will need to comply with the "Manual of Traffic Controls for Construction and Maintenance of Work Zones" (Caltrans, 1996).

LOCAL

The City of Vernon General Plan (VGP) Infrastructure Element contains goals for long term maintenance and improvement of streets that would be required to support the development envisioned by the Land Use Policy Map of the General Plan. Although no applicable traffic and transportation policies are identified in the Infrastructure Element it does contain a Circulation Element. The Circulation Element indicate the general location and extend of existing and proposed major thoroughfares, transportation routes, terminals and other utilities and facilities that are correlated to the Land Use Element of the General Plan.

The City of Vernon General Plan requires projects to comply with the goals and policies of the Infrastructure Element. The city's transportation goals are to:

- Provide a balanced transportation system for the safe and efficient movement of people, goods, and emergency services throughout the city.

- Ensure the provision of adequate off-street parking and loading facilities for each business.

The City of Vernon Department of Community Services and Water requires an Encroachment Permit and a Traffic Control Plan (TCP) for any project that requires excavation in the city streets. The City of Vernon Police Department requires temporary hauling permits for oversized or overweight vehicles.

TRANSMISSION LINE SAFETY AND NUISANCE

AVIATION SAFETY

Any potential hazard to area aircraft would relate to the potential for collision in the navigable air space. The applicable federal LORS discussed below are intended to ensure the distance and visibility necessary to prevent such collisions.

Federal

- Title 14, Part 77 of the Code of Federal Regulations (CFR), "Objects Affecting the Navigation Space." Provisions of these regulations specify the criteria used by the Federal Aviation Administration (FAA) for determining whether a "Notice of Proposed Construction or Alteration" is required for potential obstruction hazards. The need for such a notice depends on factors related to the height of the structure, the slope of an imaginary surface from the end of nearby runways to the top of the structure, and the length of the runway involved. Such notification allows the FAA to ensure that the proposed structure is located to avoid the aviation hazards of concern.
- FAA Advisory Circular (AC) No. 70/460-2H, "Proposed Construction and or Alteration of Objects that May Affect the Navigation Space." This circular informs each proponent of a project that could pose an aviation hazard of the need to file the "Notice of Proposed Construction or Alteration" (Form 7640) with the FAA.
- FAA AC No. 70/460-1G, "Obstruction Marking and Lighting." This circular describes the FAA standards for marking and lighting objects that may pose a navigation hazard as established using the criteria in Title 14, Part 77 of the CFR.

These discussed LORS were applied to the design and construction of the City's 69 kV transmission lines to be used, as is standard for all high-voltage lines in the SCE System to which these lines are connected.

INTERFERENCE WITH RADIO-FREQUENCY COMMUNICATION

Transmission line-related radio-frequency interference is one of the indirect effects of line operation produced by the physical interactions of line electric fields. Since electric fields are unable to penetrate most materials, including the soil, such interference and other electric field effects are not associated with underground lines. The level of any such interference usually depends on the magnitude of the electric fields involved. Because of this, the potential for perception of radio interference could be assessed from field strength estimates obtained for each proposed line. The following regulations are intended to ensure that such lines are located away from areas of potential interference and that any interference is mitigated whenever it occurs. These regulations were also applied (as is standard industry practice) to the existing Vernon City grid lines at the time of construction.

Federal

- Federal Communications Commission (FCC) regulations in Title 47 CFR, section 15.25. Provisions of these regulations prohibit operation of any devices producing force fields, which interfere with radio communications, even if (as with transmission lines) such devices are not intentionally designed to produce radio-frequency energy. Such interference is due to the radio noise produced by the action of the electric fields on the surface of the energized overhead conductor. The process involved is known as corona discharge but is referred to as spark gap electric discharge when it occurs within gaps between the conductor and insulators or metal fittings. When generated, such noise manifests itself as perceivable interference with radio or television signal reception or interference with other forms of radio communication. Since the level of interference depends on factors such as line voltage, distance from the line to the receiving device, orientation of the antenna, signal level, line configuration and weather conditions, maximum interference levels are not specified as design criteria for modern transmission lines. The FCC requires each line operator to mitigate all complaints about interference on a case-specific basis. The City of Vernon and the other state municipal and non-municipal utilities include specific complaint resolution measures in their line management programs to ensure compliance with this FCC requirement.

State

- General Order 52 (GO-52), California Public Utilities Commission (CPUC). Provisions of this order govern the construction and operation of power and communications lines and specifically deal with measures to prevent or mitigate inductive interference. Such interference is produced by the electric field induced by the line in the antenna of a radio signal receiver.

Several design and maintenance options are available as industry standards for minimizing these electric field-related impacts. When incorporated into the line design and operation, such measures also serve to reduce the line-related audible noise discussed below.

AUDIBLE NOISE

Industry Standards

As with radio-frequency noise, audible power line noise usually results from the action of the electric field at the surface of the overhead line conductor and could be perceived as a characteristic crackling, frying or hissing sound or hum, especially in wet weather. There are no design-specific federal regulations to limit the audible noise from transmission lines. As happens with radio noise, such noise is limited through design, construction, or maintenance practices established from industry research and experience as effective without significant impacts on line safety, efficiency, maintainability and reliability. All modern overhead high-voltage lines (such as the existing Vernon City lines and the interconnected SCE lines) are designed to assure compliance. Since the noise level depends on the strength of the line electric field, the

potential for perception can be assessed for each new line from estimates of the field strengths expected during operation. Such noise is usually generated during rainfall, but mainly from overhead lines of 345 kV or higher. It is, therefore, not generally expected from the 69 kV lines to be used for this project. Research by the Electric Power Research Institute (EPRI 1982) has validated this by showing the fair-weather audible noise from modern transmission lines to be generally indistinguishable from background noise at the edge of a 100-ft right-of-way.

NUISANCE SHOCKS

Industry Standards

Nuisance shocks are electric shocks associated with current flow at levels generally incapable of causing significant physiological harm. They result mostly from direct contact with metal objects electrically charged by fields from the energized line. Such electric charges are induced in different ways by the line electric and magnetic fields and are mitigated to reflect the differences in patterns of generation. There are no design-specific federal regulations to limit nuisance shocks in the transmission line environment. For the proposed project and all modern overhead high-voltage lines, such shocks are effectively minimized through grounding procedures specified in the National Electrical Safety Code (NESC) and the joint guidelines of the American National Standards Institute (ANSI) and the Institute of Electrical and Electronics Engineers (IEEE). Line owners, such as SCE and the City of Vernon, are usually responsible for ensuring compliance with these grounding-related practices within the right-of-way. Staff usually recommends specific conditions of certification to ensure that such grounding is made along the route of each new line.

FIRE HAZARDS

The fire hazards addressed through the following regulations are those that could be caused by sparks from conductors of overhead lines, or that could result from direct contact between the line and nearby trees and other combustible objects.

State

- General Order 95 (GO-95), CPUC, “Rules for Overhead Electric Line Construction” specifies tree-trimming criteria to minimize the potential for power line-related fires.
- Title 14, section 1250 of the California Code of Regulations: “Fire Prevention Standards for Electric Utilities” specifies utility-related measures for fire prevention.

The requirements of these regulations are incorporated into the design of all modern municipal and non-municipal high-voltage lines.

HAZARDOUS SHOCKS

The hazardous shocks addressed by the following regulations and standards are those that could result from direct or indirect contact between an individual and the energized line whether overhead or underground. Such shocks are capable of serious physiological harm or death and remain a driving force within the City of Vernon and

other utility service areas in the design and operation of transmission and other high-voltage lines.

State

- GO-95, CPUC. "Rules for Overhead Line Construction" These rules specify uniform statewide requirements for overhead line construction regarding ground clearance, grounding, maintenance and inspection. Implementing these requirements ensures the safety of the general public and line workers.
- Title 8, California Code of Regulations, sections 2700 through 2974. "High Voltage Electric Safety Orders" These safety orders establish essential requirements and minimum standards for safely installing, operating, working around, and maintaining electrical installations and equipment.

The requirements of these rules and orders were incorporated into the design of the proposed project line, as is standard for municipal and non-municipal utilities.

Local

There are no shock hazard-related requirements on the physical dimensions of power lines at the local level.

Industrial Standards

No design-specific federal regulations have been established to prevent hazardous shocks from overhead power lines. Safety is assured within the state's municipal and non-municipal utility service areas from compliance with the requirements in the National Electrical Safety Code, Part 2: Safety Rules for Overhead Lines. These provisions specify the minimum national safe operating clearances applicable in areas where the line might be accessible to the public. They are intended to minimize the potential for direct or indirect contact with the energized line.

ELECTRIC AND MAGNETIC FIELD EXPOSURE

The possibility of deleterious health effects from electric and magnetic field (EMF) exposure has increased public concern in recent years about living near high-voltage lines. Both fields occur together whenever electricity flows, hence the general practice of describing exposure to them together as EMF exposure. The available evidence as evaluated by CPUC, other regulatory agencies, and staff, has not established that such fields pose a significant health hazard to exposed humans.

While there is considerable uncertainty about the EMF/health effects issue, the following facts have been established from the available information and have been used to establish existing policies:

- Any exposure-related health risk to the exposed individual will likely be small.
- The most biologically significant types of exposures have not been established.
- Most health concerns are about the magnetic field.

- The measures employed for such field reduction can affect line safety, reliability, efficiency and maintainability, depending on the type and extent of such measures.

State

In California, the CPUC (which regulates the installation and operation of high-voltage lines in California) has determined that only no-cost or low-cost measures are presently justified in any effort to reduce power line fields beyond levels existing before the present health concern arose. The CPUC has further determined that such reduction should be made only in connection with new or modified lines. The available evidence has not identified any potential health risk as justifying the retrofit of existing lines. The CPUC further required SCE (the project area's major service utility) and other electric utilities within its jurisdiction to prepare a specific guideline document listing the specific EMF-reducing measures that would be incorporated into the standard safety designs for all new or upgraded power lines and related facilities within their respective service areas. These reduction measures were derived from the same general approaches employed over the years within the industry to minimize the fields from all energized lines. They therefore are essentially the same for all utilities, whether municipal or non-municipal. The CPUC further established specific limits on the resources to be used in each case to reduce the intensity of the line fields in question. Such limiting requirements were intended by the CPUC to apply to the cost of any redesign to reduce field strength or relocation to reduce exposure. Electrical utilities such as those of the City of Vernon that are not within the jurisdiction of the CPUC voluntarily comply with these CPUC requirements, thereby ensuring similarity in intensity for fields of lines of the same voltage and current-carrying capacity. This operational CPUC policy resulted from assessments made to implement CPUC Decision 93-11-013.

In keeping with this CPUC policy, the CEC requires a showing by each applicant that each new or modified line would be designed to incorporate the EMF-reducing design guidelines applicable to the utility service area involved. These field-reducing measures can impact line operation if applied without appropriate regard for environmental and other local issues bearing on safety, reliability efficiency and maintainability. Therefore, it is up to each applicant to ensure that such measures are applied in ways that prevent significant impacts on line operation and safety. The extent of such applications would be reflected by the ground-level field strengths as measured during operation. When estimated or measured for lines of similar voltage and current-carrying capacity, such field strength values can be used by the CEC and other regulatory agencies to assess the effectiveness of the applied reduction measures. These field strengths can be estimated for any given design using established procedures. Estimates are specified for a height of one meter above the ground, in units of kilovolts per meter (kV/m), for the electric field, and milligauss (mG) for the companion magnetic field. Their magnitude depends on line voltage (in the case of electric fields), the geometry of the support structures, degree of cancellation from nearby conductors, distance between conductors and, in the case of magnetic fields, amount of current in the line.

Since all new lines in California are currently required under current CPUC policy to be designed to directly incorporate or reflect incorporation of the EMF-reducing guidelines of the state's major electric utilities that are interconnected, the fields from each given

line are expected under this policy to be similar in magnitude to the fields from similar lines in the service area in question. This requirement was established to reflect the fact that such fields have not been established as posing a health hazard to humans. If a new transmission line had been proposed for MGS, the applicable field-reducing guidelines would have reflected the requirements in the SCE guideline document, given that the same general reduction approaches are employed by all utilities. Incorporating such measures into the existing (standard) non field-related SCE or City of Vernon's safety designs would have constituted compliance with present CPUC requirements on field strength management.

Industrial Standards

There are no health-based federal regulations or industry codes specifying environmental limits on the strengths of fields from power lines. However, the federal government continues to conduct and encourage research necessary for an appropriate policy on the EMF health issue.

In the face of the present uncertainty, several states have opted for design-driven regulations, which, as with California's, are intended to ensure that fields from new lines are generally similar in intensity to those from existing lines of similar voltage and current-carrying capacity. It is for this reason that staff considers it appropriate for the existing 69 kV City of Vernon utility lines to be used without retrofit in connection with the proposed MGS. Some states (Florida, Minnesota, New Jersey, New York, Montana) have set specific environmental limits on one or both fields in this regard. These limits are, however, not based on any specific health effects.

Before the present health-based concern developed, measures to reduce field effects from power line operations were mostly aimed at the electric field component whose effects can manifest themselves as the previously noted radio noise, audible noise and nuisance shocks. The present focus is on the magnetic field because only it can penetrate soil, building and other materials to potentially produce the types of health impacts at the root of the present concern. As one focuses on the strong magnetic fields from the more visible overhead transmission and other high-voltage power lines, staff considers it important for perspective, to note that an individual in a home could be exposed for short periods to much stronger fields while using some common household appliances (National Institute of Environmental Health Services and the U.S Department of Energy, 1995). Scientists have not established which of these types of exposures would be more biologically meaningful in the individual.

TRANSMISSION SYSTEM ENGINEERING

- California Public Utilities Commission (CPUC) General Order 95 (GO-95), "Rules for Overhead Electric Line Construction," formulates uniform requirements for construction of overhead lines. Compliance with this order ensures adequate service and safety to persons engaged in the construction, maintenance and operation or use of overhead electric lines and to the public in general.
- California Public Utilities Commission (CPUC) General Order 128(GO-128), "Rules for Construction of Underground Electric Supply and Communications Systems," formulates uniform requirements and minimum standards to be used for underground supply systems to ensure adequate service and safety to persons engaged in the construction, maintenance and operation or use of underground electric lines and to the public in general.
- The National Electric Safety Code, 1999 provides electrical, mechanical, civil and structural requirements for overhead electric line construction and operation.
- The North American Electric Reliability Council (NERC) and Western Systems Coordinating Council (WSCC) Planning Standards were merged. The combined Planning Standards are now referred to as the NERC/WSCC Planning Standards and provide the system performance standards used in assessing the reliability of the interconnected system. Certain aspects of the NERC/WSCC standards are either more stringent or more specific than the NERC standards. These standards provide planning for electric systems so as to withstand the more probable forced and maintenance outage system contingencies at projected customer demand and anticipated electricity transfer levels, while continuing to operate reliably within equipment and electric system thermal, voltage and stability limits. These standards include the reliability criteria for system adequacy and security, system modeling data requirements, system protection and control, and system restoration. Analysis of the WSCC system is based to a large degree on Section I.A of the standards, "NERC and WSCC Planning Standards with Table I and WSCC Disturbance-Performance Table" and on Section I.D, "NERC and WSCC Standards for Voltage support and Reactive Power". These standards require that the results of power flow and stability simulations verify defined performance levels. Performance levels are defined by specifying the allowable variations in thermal loading, voltage and frequency, and loss of load that may occur on systems during various disturbances. Performance levels range from no significant adverse effects inside and outside a system area during a minor disturbance (loss of load or a single transmission element out of service) and to a level that seeks to prevent system cascading and the subsequent blackout of islanded areas during a major disturbance (such as loss of multiple 500 kV lines in a right of way and/or multiple generators). While controlled loss of generation or load or system separation is permitted in certain circumstances, their uncontrolled loss is not permitted (WSCC 2001).
- NERC Planning Standards provide national policies, standards, principles and guidelines to assure the adequacy and security of the electric transmission system.

The NERC planning standards provide for system performance levels under normal and contingency conditions. With regard to power flow and stability simulations, while these Planning Standards are similar to WSCC Standards, certain aspects of the WSCC standards are either more stringent or more specific than the NERC standards for Transmission System Contingency Performance. The NERC planning standards apply not only to interconnected system operation but also to individual service areas (NERC 1998).

- Cal-ISO Grid Planning Standards also provide standards, and guidelines to assure the adequacy, security and reliability in the planning of the Cal-ISO transmission grid facilities. The Cal-ISO Grid Planning Standards incorporate the WSCC and NERC Planning Standards. With regard to power flow and stability simulations, these Planning Standards are similar to WSCC and the NERC Planning Standards for Transmission System Contingency Performance. However, the Cal-ISO Standards also provide some additional requirements that are not found in the WSCC or NERC Planning Standards. The Cal-ISO Standards apply to all participating transmission owners interconnecting to the Cal-ISO controlled grid. They also apply when there are any impacts to the Cal-ISO grid due to facilities interconnecting to adjacent controlled grids not operated by the Cal-ISO (Cal-ISO 2002a).

VISUAL RESOURCES

FEDERAL

The proposed project, including the linear facilities, is not located on federally administered public lands and is not subject to federal regulations pertaining to visual resources.

STATE

None of the roadways in the project vicinity are eligible or designated State Scenic Highways. Therefore, no state regulations pertaining to scenic resources are applicable to the project.

LOCAL

The proposed project site is located within the City of Vernon. Therefore, the project would be subject to local laws, ordinances, regulations, and standards (LORS) pertaining to the protection and maintenance of visual resources. Staff identified one visual resources-related policy in the Natural Resources Element of the Vernon General Plan. Policy 1.3 states that the City shall "encourage private property owners and industries to establish and maintain landscaped areas." In addition, one visual resources-related requirement in the City's Zoning Ordinance is applicable to the proposed project. Zoning Ordinance, Article III, Section 26.3.5-4(c) [General Industry Zone development standards] states: “Outdoor activities and storage may be permitted provided such activities and storage are not visible from the public right-of-way.”

WASTE MANAGEMENT

FEDERAL

Resource Conservation and Recovery Act (42 U.S.C. § 6922)

RCRA establishes requirements for the management of hazardous wastes from the time of generation to the point of ultimate treatment or disposal. Section 6922 requires generators of hazardous waste to comply with requirements regarding:

- Record keeping practices which identify quantities of hazardous wastes generated and their disposition,
- Labeling practices and use of appropriate containers,
- Use of a manifest system for transportation, and
- Submission of periodic reports to the EPA or authorized state.

Title 40, Code of Federal Regulations, part 260

These sections contain regulations promulgated by the EPA to implement the requirements of RCRA as described above. Characteristics of hazardous waste are described in terms of ignitability, corrosivity, reactivity, and toxicity, and specific types of wastes are listed.

STATE

California Health and Safety Code §25100 et seq. (Hazardous Waste Control Act of 1972, as amended).

This act creates the framework under which hazardous wastes must be managed in California. It mandates the State Department of Health Services (now the Department of Toxic Substances Control (DTSC) under the California Environmental Protection Agency, or Cal EPA) to develop and publish a list of hazardous and extremely hazardous wastes, and to develop and adopt criteria and guidelines for the identification of such wastes. It also requires hazardous waste generators to file notification statements with Cal EPA and creates a manifest system to be used when transporting such wastes.

Title 14, California Code of Regulations, §17200 et seq. (Minimum Standards for Solid Waste Handling and Disposal)

These regulations set forth minimum standards for solid waste handling and disposal, guidelines to ensure conformance of solid waste facilities with county solid waste management plans, as well as enforcement and administration provisions.

Title 22, California Code of Regulations, §66262.10 et seq. (Generator Standards)

These sections establish requirements for generators of hazardous waste. Under these sections, waste generators must determine if their wastes are hazardous according to either specified characteristics or lists of wastes. As in the federal program, hazardous waste generators must obtain EPA identification numbers, prepare manifests before transporting the waste off-site, and use only permitted treatment, storage, and disposal facilities. Additionally, hazardous waste must only be handled by registered hazardous waste transporters. Generator requirements for record keeping, reporting, packaging, and labeling are also established.

Title 22, California Code of Regulations, §67100.1 et seq. (Hazardous Waste Source Reduction and Management Review)

These sections establish reporting requirements for generators of certain hazardous and extremely hazardous wastes in excess of specified limits. The required reports must indicate the generator's waste management plans and performance over the reporting period.

California Health and Safety Code, § 41700 (Emission Limitations)

California Health and Safety Code, section 41700, requires that "No person shall discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health, or safety of any such persons or the public, or which cause, or have a natural tendency to cause injury or damage to business or property."

LOCAL

The City of Vernon Environmental Health Department locally administers the California Laws and Regulations for both non-hazardous and hazardous wastes. The City's Fire Department and the Sheriff's Department have additional regulatory responsibilities with respect to hazardous wastes. MGS will be required to obtain a Hazardous Materials Business Plan from the City of Vernon Environmental Health Department before storing hazardous materials and wastes on site.

WORKER SAFETY AND FIRE PROTECTION

FEDERAL

In December 1970 Congress enacted Public Law 91-596, the Federal Occupational Safety and Health Act of 1970. This Act mandates safety requirements in the workplace and is found in Title 29 of the United States Code, § 651 (29 U.S.C. §§ 651 through 678). Implementing regulations are codified at Title 29 of the Code of Federal Regulations, under General Industry Standards §§ 1910.1 - 1910.1500 and clearly define the procedures for promulgating regulations and conducting inspections to implement and enforce safety and health procedures to protect workers, particularly in the industrial sector. Most of the general industry safety and health standards now in force under the Act represent a compilation of materials from existing federal standards and national consensus standards. These include standards from the voluntary membership organizations of the American National Standards Institute (ANSI) and the National Fire Protection Association (NFPA) which publishes the National Fire Codes.

The purpose of the Occupational Safety and Health Act is to "assure so far as possible every working man and woman in the nation safe and healthful working conditions and to preserve our human resources," (29 USC § 651). The Federal Department of Labor promulgates and enforces safety and health standards that are applicable to all businesses affecting interstate commerce. The Department of Labor established the Occupational Safety and Health Administration (OSHA) in 1971 to discharge the responsibilities assigned by the OSH Act.

Applicable Federal requirements include:

- 29 U.S. Code § 651 et seq. (Occupational Safety and Health Act of 1970);
- 29 CFR §1910.1 - 1910.1500 (Occupational Safety and Health Administration Safety and Health Regulations);
- 29 CFR §1952.170 – 1952.175 (Federal approval of California's plan for enforcement of its own Safety and Health requirements, in lieu of most of the Federal requirements found in 29 CFR §1910.1 – 1910.1500).

STATE

California passed the Occupational Safety and Health Act of 1973 ("Cal/OSHA") as published in the California Labor Code § 6300. Regulations promulgated as a result of the Act are codified at Title 8 of the California Code of Regulations, beginning with §337-560 and continuing with §1514 through 8568. The California Labor Code requires that the Cal/OSHA Standards Board adopt standards at least as effective as the federal standards (Labor Code § 142.3(a)) and thus all Cal/OSHA health and safety standards meet or exceed the Federal requirements. Hence, California obtained federal approval of its State health and safety regulations, in lieu of the federal requirements published at 29 CFR §1910.1 - 1910.1500). The Federal Secretary of Labor, however, continually

oversees California's program and will enforce any federal standard for which the State has not adopted a Cal/OSHA counterpart.

The State of California Department of Industrial Relations is charged with responsibility for administering the Cal/OSHA plan. The Department of Industrial Relations is further split into six divisions to oversee, among other activities: industrial accidents, occupational safety and health, labor standards enforcement, statistics and research, and the State Compensation Insurance Fund (workers compensation).

Employers are responsible for informing their employees about workplace hazards, potential exposure and the work environment (Labor Code § 6408). Cal/OSHA's principal tool in ensuring that workers and the public are informed is the Hazard Communication standard first adopted in 1981 (8 CCR §5194). This regulation was promulgated in response to California's Hazardous Substances Information and Training Act of 1980. It was later revised to mirror the Federal Hazard Communication Standard (29 CFR §1910.1200) which established on the federal level an employee's "right to know" about chemical hazards in the workplace, but added the provision of applicability to public sector employers. A major component of this regulation is the required provision of Material Safety Data Sheets (MSDSs) to workers. MSDSs provide information on the identity, toxicity, and precautions to take when using or handling hazardous materials in the workplace.

Finally, 8 CCR §3203 requires that employers establish and maintain a written Injury and Illness Prevent Program to identify workplace hazards and communicate them to its employees through a formal employee-training program.
Applicable State requirements include:

- 8 CCR §339 - List of hazardous chemicals relating to the Hazardous Substance Information and Training Act;
- 8 CCR §337, et seq. Cal/OSHA regulations;
- 24 CCR § 3, et seq. - incorporates the current edition of the Uniform Building Code;
- Health and Safety Code § 25500, et seq. - Risk Management Plan requirements for threshold quantity of listed acutely hazardous materials at the facility;
- Health and Safety Code § 25500 - 25541 - Hazardous Material Business Plan detailing emergency response plans for hazardous materials emergency at the facility.

LOCAL

The California Building Standards Code published at Title 24 of the California Code of Regulations § 3 et seq. consists of eleven parts containing the building design and construction requirements relating to fire and life safety and structural safety. The Building Standards Code includes the electrical, mechanical, energy, and fire codes applicable to the project. Local planning/building & safety departments enforce the California Building Code.

National Fire Protection Association (NFPA) standards are published in the California Fire Code. The fire code contains general provisions for fire safety, including but not restricted to: 1) required road and building access; 2) water supplies; 3) installation of fire protection and life safety systems; 4) fire-resistive construction; 5) general fire safety precautions; 6) storage of combustible materials; 7) exits and emergency escapes; and 8) fire alarm systems. The California Fire Code reflects the body of regulations published at Part 9 of Title 24 of the California Code of Regulations.

Similarly, the Uniform Fire Code (UFC) Standards, a companion publication to the California Fire Code, contains standards of the American Society for Testing and Materials and the NFPA. It is the United State's premier model fire code. It is updated annually as a supplement and published every third year by the International Fire Code Institute to include all approved code changes in a new edition. The City of Vernon adopted the 1997 Uniform Fire Code in 1998. The City of Vernon Fire Department administers the UFC (Martinez 2002).

Applicable local (or locally enforced) requirements include:

- 1998 Edition of California Fire Code and all applicable NFPA standards (24 CCR Part 9);
- California Building Code Title 24, California Code of Regulations (24 CCR § 3, et seq.); and
- Uniform Fire Code, 1997.

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

APPLICATION FOR CERTIFICATION OF THE MALBURG GENERATING STATION BY THE CITY OF VERNON	**DOCKET NO. 01-AFC-25** **PROOF OF SERVICE**

I, _____, declare that on _____, I deposited copies of the attached _____ in the United States mail at *Sacramento, CA* with first class postage thereon, fully prepaid, and addressed to the following:

DOCKET UNIT

The original signed document plus the required 12 copies to the Energy Commission Docket Unit:

CALIFORNIA ENERGY COMMISSION
DOCKET UNIT, MS-4
Attn: Docket No. 01-AFC-25
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Individual copies of all documents to the parties:

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I declare under penalty of perjury that the foregoing is true and correct.

_____
[signature]

* * * *

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

APPLICATION FOR CERTIFICATION OF THE MALBURG GENERATING STATION BY THE CITY OF VERNON	**DOCKET NO. 01-AFC-25** DATA ADEQUATE MAY 8, 2002

EXHIBIT LIST

EXHIBIT 1 Application for Certification for the Malburg Generating Station (AFC) (Vol. I), Technical Appendices A-G (Vol. II), and Technical Appendices H-R (Vol. III), dated December 2001. Paper copy and magnetic media. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 2 Response to Data Adequacy Recommendation, dated May 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 3 Information Requested in the CEC's Data Requests, dated June 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 4 Informational Workshop and Hearing Data Requests, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 5 Application for Permit to Construct and Operate Malburg Generating Station, dated December 2001. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 6 Application for Permit to Construct and Operate Malburg Generating Station, Attachment 1, Rule 1303, Air Dispersion Modeling Analysis, dated December 2001. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 7 Application for Permit to Construct and Operate Malburg Generating Station, Attachment 2, Rule 1401 Analysis, dated December 2001. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 8 Application for Permit to Construct and Operate Malburg Generating Station, Attachment 2a, Rule 1401 Analysis (Cooling Tower), dated December 2001. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 9 Application for Permit to Construct and Operate Malburg Generating Station, Attachment 3, Rule 2005 Air Dispersion Modeling Analysis, dated December 2001. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 10 Supplement for the Application for Permit to Construct and Operate Malburg Generating Station, dated February 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 11 Second Supplement for the Application for Permit to Construct and Operate Malburg Generating Station, dated June 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 12 Revised Supplement for the Application for Permit to Construct and Operate Malburg Generating Station, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 13 Data Adequacy Recommendation, dated January 2002. Sponsored by Staff; admitted into evidence on 2/10/03.

EXHIBIT 14 Zip Code Listing for Cumulative Air Quality Impact Analysis, dated February 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 15 Environmental Impact Report re County of Los Angeles Fire Department, dated February 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 16 Cumulative Assessment for Foreseeable Local Sources, dated April 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 17 Data Adequacy Recommendation, dated May 2002. Sponsored by CEC Staff; admitted into evidence on 2/10/03.

EXHIBIT 18 Cumulative Air Dispersion Input & Output Modeling Files, dated May 2002. Magnetic media only. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 19 National Pollutant Discharge Elimination System (NPDES) Permit for Industrial, dated May 2002. Paper copy and magnetic media. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 19A SWPPP Permit; dated May 2002. Paper copy and magnetic media. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 19B NPDES Permit for Construction; dated May 2002. Paper copy and magnetic media. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 20 Transmission Systems Engineering System Impact and Facilities Study, dated May 2002. Paper copy and magnetic media. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 21 CEC Data Requests to Applicant, dated May 2002. Sponsored by CEC Staff; admitted into evidence on 2/10/03.

EXHIBIT 22 City of Vernon Correspondence to CEC, Waiving 45-Day Time Period for Informational Hearing, dated May 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 23 City of Vernon Correspondence Request to the CEC for Additional Time to Provide Information Requested by CEC Staff, dated May 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 24 Issues Identification Report, dated June 2002. Sponsored by CEC Staff; admitted into evidence on 2/10/03.

EXHIBIT 25 AFC Economic Impact Analysis, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 26 AFC Emissions Offsets and BACT Analysis, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 27 AFC Southern California Edison Technical Assessment, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 28 AFC revised Public Health Section, dated July 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 29 AFC Additional Cultural Resources Responses, dated August 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 30 SCAQMD Preliminary Determination of Compliance, dated August 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 31 Correspondence to City of Vernon re Transmission System Impact & Facility Study from Southern California Edison, dated August 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 32 Contract for the Detailed Engineering, Procurement, Construction and Startup, dated September 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 33 Verification of Distribution of Public Notice Description of the Malburg Generating Station Project Pursuant to South Coast Air Quality Management District Rule 212(d), dated September 2002. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 34 Staff Assessment for the Malburg Generating Station Project, dated September 27, 2002. Sponsored by Staff; admitted into evidence on 2/10/03.

EXHIBIT 35 Addendum to Staff Assessment for the Malburg Generating Station Project, dated December 24, 2002. Sponsored by Staff; admitted into evidence on 2/10/03.

EXHIBIT 36 Final Addendum to Staff Assessment for the Malburg Generating Station Project, dated February 4, 2003. Sponsored by Staff; admitted into evidence on 2/10/03.

EXHIBIT 37 Final Determination of Compliance certifying that complete emissions offsets have been identified and will be obtained prior to licensing, dated December 13, 2002. Sponsored by Staff; admitted into evidence on 2/10/03.

EXHIBIT 38 Applicant's Testimony in Support of the Application for Certification of the Malburg Generating Station Project, dated February 3, 2003. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 39 Letter from South Coast Air District to Paul Richins, CEC Staff, dated February 10, 2003. Sponsored by Staff, admitted into evidence on 2/10/03.

EXHIBIT 40 Contract for Procurement, Construction and Startup, February 3, 2003. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 41 Letter from Stephen P. Lyons to Jay McEntire Re Project Labor Agreement for Malburg Generating Station, Vernon, CA, February 7, 2003. Sponsored by Applicant; admitted into evidence on 2/10/03.

EXHIBIT 42 Staff Response to Evidentiary Hearing Comments, February 25, 2003. Sponsored by Staff, admitted into evidence on 2/25/03.

EXHIBIT 43 Project Labor Agreement for the Malburg Generating Station Project. Sponsored by Applicant; admitted into evidence on 3/17/03.

EXHIBIT 44 Letter from the South Coast Air Quality Management District to Kerry Willis, dated February 12, 2003. Sponsored by Staff; admitted into evidence on 2/18/03.

EXHIBIT 45 E-mail from Chandrashekhar Bhatt from the South Coast Air Quality Management District to Bill Pfanner, CEC Staff, with attached revised FDOC sections. Sponsored by Staff; admitted into evidence on 3/19/03.

EXHIBIT 46 Staff's Errata to Presiding Member's Proposed Decision, concerning Condition of Certification **AQ-C1**, docketed May 7, 2003. Sponsored by Staff; admitted into evidence on May 7, 2003.

GLOSSARY OF TERMS AND ACRONYMS

	A
A	Ampere
AAL	all aluminum (electricity conductor)
AAQS	Ambient Air Quality Standards
ABAG	Association of Bay Area Governments
AC	alternating current
ACE	Argus Cogeneration Expansion Project Army Corps of Engineers
ACSR	aluminum covered steel reinforced (electricity conductor)
AFC	Application for Certification
AFY	acre-feet per year
AHM	Acutely Hazardous Materials
ANSI	American National Standards Institute
APCD	Air Pollution Control District
APCO	Air Pollution Control Officer
AQMD	Air Quality Management District
AQMP	Air Quality Management Plan
ARB	Air Resources Board
ARCO	Atlantic Richfield Company
ASAE	American Society of Architectural Engineers
ASHRAE	American Society of Heating Refrigeration & Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ATC	Authority to Construct
	B
BAAQMD	Bay Area Air Quality Management District
BACT	Best Available Control Technology
BAF	Basic American Foods
BARCT	Best Available Retrofit Control Technology
bbl	barrel
BCDC	Bay Conservation and Development Commission
BCF	billion cubic feet
Bcfd	billion cubic feet per day
b/d	barrels per day
BLM	Bureau of Land Management
BPA	U.S. Bonneville Power Administration
BR	Biennial Report
Btu	British thermal unit
	C
CAA	U.S. Clean Air Act
CAAQS	California Ambient Air Quality Standards
CALEPA	California Environmental Protection Agency
CALTRANS	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CBC	California Building Code
CCAA	California Clean Air Act
CDF	California Department of Forestry
CDFG	California Department of Fish and Game
CEERT	Coalition for Energy Efficiency and Renewable Technologies
CEM	continuous emissions monitoring
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFB	circulating fluidized bed
CFCs	chloro-fluorocarbons
cfm	cubic feet per minute

CFR	Code of Federal Regulations
cfs	cubic feet per second
CLUP	Comprehensive Land Use Plan
CNEL	Community Noise Equivalent Level
CO	carbon monoxide
CO_2	carbon dioxide
COI	California Oregon Intertie
CPCN	Certificate of Public Convenience & Necessity
CPM	Compliance Project Manager
CPUC	California Public Utilities Commission
CT	combustion turbine current transformer
CTG	combustion turbine generator
CURE	California Unions for Reliable Energy
	D
dB	decibel
dB(A)	decibel on the A scale
DC	direct current
DCTL	Double Circuit Transmission Line
DEIR	Draft Environmental Impact Report
DEIS	Draft Environmental Impact Statement
DFG	California Department of Fish and Game
DHS	California Department of Health Services
DISCO	Distribution Company
DOC	Determination of Compliance
DOE	U.S. Department of Energy
DSM	demand side management
DTC	Desert Tortoise Council
DWR	California Department of Water Resources
	E
EDF	Environmental Defense Fund
Edison	Southern California Edison Company
EDR	Energy Development Report
EFS&EPD	Energy Facilities Siting and Environmental Protection Division
EIA	U.S. Energy Information Agency
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
ELFIN	Electric Utility Financial and Production Simulation Model
EMF	electric and magnetic fields
EOR	East of River (Colorado River)
EPA	U.S. Environmental Protection Agency
EPRI	Electric Power Research Institute
ER	Electricity Report
ERC	emission reduction credit {offset}
ESA	Endangered Species Act (Federal) Environmental Site Assessment
ETSR	Energy Technologies Status Report
	F
FAA	Federal Aviation Administration
FBE	Functional Basis Earthquake
FCAA	Federal Clean Air Act
FCC	Federal Communications Commission
FEIR	Final Environmental Impact Report
FIP	Federal Implementation Plan
FONSI	Finding of No-Significant Impact
FERC	Federal Energy Regulatory Commission
FSA	Final Staff Assessment
	G

GEP	good engineering practice
GIS	gas insulated switchgear geographic information system
gpd	gallons per day
gpm	gallons per minute
GW	gigawatt
GWh	gigawatt hour
	H
H_2S	hydrogen sulfide
HCP	habitat conservation plan
HHV	higher heating value
HRA	Health Risk Assessment
HRSG	heat recovery steam generator
HV	high voltage
HVAC	heating, ventilating and air conditioning
	I
IAR	Issues and Alternatives Report
IEA	International Energy Agency
IEEE	Institute of Electrical & Electronics Engineers
IID	Imperial Irrigation District
IIR	Issues Identification Report
IOU	Investor-Owned Utility
IS	Initial Study
ISO	Independent System Operator
	J
JES	Joint Environmental Statement
	K
KCAPCD	Kern County Air Pollution Control District
KCM	thousand circular mils (also KCmil) (electricity conductor)
KGRA	known geothermal resource area
km	kilometer
KOP	key observation point
KRCC	Kern River Cogeneration Company
kV	kilovolt
KVAR	kilovolt-ampere reactive
kW	kilowatt
kWe	kilowatt, electric
kWh	kilowatt hour
kWp	peak kilowatt
	L
LADWP	Los Angeles Department of Water and Power
LAER	Lowest Achievable Emission Rate
lbs	pounds
lbs/hr	pounds per hour
lbs/MMBtu	pounds per million British thermal units
LCAQMD	Lake County Air Quality Management District
LMUD	Lassen Municipal Utility District
LORS	laws, ordinances, regulations and standards
	M
m (M)	meter, million, mega, milli or thousand
MBUAPCD	Monterey Bay Unified Air Pollution Control District
MCE	maximum credible earthquake
MCF	thousand cubic feet
MCL	Maximum Containment Level
MCM	thousand circular mil (electricity conductor)
$\mu g/m^3$	micro grams (10^{-6} grams) per cubic meter

MEID	Merced Irrigation District
MG	milli gauss
mgd	million gallons per day
MID	Modesto Irrigation District
MOU	Memorandum of Understanding
MPE	maximum probable earthquake
m/s	meters per second
MS	Mail Station
MVAR	megavolt-ampere reactive
MW	megawatt (million watts)
MWA	Mojave Water Agency
MWD	Metropolitan Water District
MWh	megawatt hour
MWp	peak megawatt
	N
N-1	one transmission circuit out
N-2	two transmission circuits out
NAAQS	National Ambient Air Quality Standards
NCPA	Northern California Power Agency
NEPA	National Energy Policy Act National Environmental Policy Act
NERC	National Electric Reliability Council
NESHAPS	National Emission Standards for Hazardous Air Pollutants
NMHC	nonmethane hydrocarbons
NO	nitrogen oxide
NOI	Notice of Intention
NOL	North of Lugo
NO_x	nitrogen oxides
NO_2	nitrogen dioxide
NOP	Notice of Preparation (of EIR)
NOV	Notice of Violation
NRDC	Natural Resources Defense Council
NSCAPCD	Northern Sonoma County Air Pollution Control District
NSPS	New Source Performance Standards
NSR	New Source Review
	O
O_3	Ozone
OASIS	Open Access Same-Time Information System
OCB	oil circuit breaker
OCSG	Operating Capability Study Group
O&M	operation and maintenance
OSHA	Occupational Safety and Health Administration (or Act)
	P
PG&E	Pacific Gas & Electric Company
PDCI	Pacific DC Intertie
PHC(S)	Prehearing Conference (Statement)
PIFUA	Federal Powerplant & Industrial Fuel Use Act of 1978
PM	Project Manager particulate matter
PM_{10}	particulate matter 10 microns and smaller in diameter
$PM_{2.5}$	particulate matter 2.5 microns and smaller in diameter
ppb	parts per billion
ppm	parts per million
ppmvd	parts per million by volume, dry
ppt	parts per thousand
PRC	California Public Resources Code

PSD	Prevention of Significant Deterioration
PSRC	Plumas Sierra Rural Electric Cooperative
PT	potential transformer
PTO	Permit to Operate
PU	per unit
PURPA	Federal Public Utilities Regulatory Policy Act of 1978
PV	Palo Verde photovoltaic
PX	Power Exchange
	Q
QA/QC	Quality Assurance/Quality Control
QF	Qualifying Facility
	R
RACT	Reasonably Available Control Technology
RDF	refuse derived fuel
ROC	Report of Conversation reactive organic compounds
ROG	reactive organic gas
ROW	right of way
RWQCB	Regional Water Quality Control Board
	S
SACOG	Sacramento Area Council of Governments
SANBAG	San Bernardino Association of Governments
SANDAG	San Diego Association of Governments
SANDER	San Diego Energy Recovery Project
SB	Senate Bill
SCAB	South Coast Air Basin
SEGS	Solar Electric Generating Station
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCE	Southern California Edison Company
SCFM	standard cubic feet per minute
SCH	State Clearing House
SCIT	Southern California Import Transmission
SCR	Selective Catalytic Reduction
SCTL	single circuit transmission line
SDCAPCD	San Diego County Air Pollution Control District
SDG&E	San Diego Gas & Electric Company
SEPCO	Sacramento Ethanol and Power Cogeneration Project
SIC	Standard industrial classification
SIP	State Implementation Plan
SJVAB	San Joaquin Valley Air Basin
SJVAQMD	San Joaquin Valley Air Quality Management District
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SMUDGEO	SMUD Geothermal
SNCR	Selective Noncatalytic Reduction
SNG	Synthetic Natural Gas
SO_2	sulfur dioxide
SO_x	sulfur oxides
SO_4	sulfates
SoCAL	Southern California Gas Company
SONGS	San Onofre Nuclear Generating Station
SPP	Sierra Pacific Power
STIG	steam injected gas turbine

SWP	State Water Project
SWRCB	State Water Resources Control Board
	T
TAC	Toxic Air Contaminant
TBtu	trillion Btu
TCF	trillion cubic feet
TCM	transportation control measure
TDS	total dissolved solids
TE	transmission engineering
TEOR	Thermally Enhanced Oil Recovery
TID	Turlock Irrigation District
TL	transmission line or lines
T-Line	transmission line
TOG	total organic gases
TPD	tons per day
TPY	tons per year
TS&N	Transmission Safety and Nuisance
TSE	Transmission System Engineering
TSIN	Transmission Services Information Network
TSP	total suspended particulate matter
	U
UBC	Uniform Building Code
UDC	Utility Displacement Credits
UDF	Utility Displacement Factor
UEG	Utility Electric Generator
USC(A)	United States Code (Annotated)
USCOE	U.S. Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
	V
VCAPCD	Ventura County Air Pollution Control District
VOC	volatile organic compounds
	W
W	Watt
WAA	Warren-Alquist Act
WEPEX	Western Energy Power Exchange
WICF	Western Interconnection Forum
WIEB	Western Interstate Energy Board
WOR	West of River (Colorado River)
WRTA	Western Region Transmission Association
WSCC	Western System Coordination Council
WSPP	Western System Power Pool